Mendip Data Systems

JSON Analyse and Transform for Access (JATFA)

User Guide

Version 4.20

Colin Riddington

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Increasingly, data is being made available from online sources as **JSON** files. The file format is very versatile and efficient allowing rapid data transfer See <u>Appendix A</u> for more information about **JSON** file structure

However, the data then needs to be processed (parsed) before it can be used in **Access**. Unfortunately, **Access** does not provide any easy method of importing **JSON** files.

By contrast, **JSON** data can be imported and parsed using **Excel Power Query** add-in (**2010/2013**) or the built-in **Get & Transform** feature in **Excel 2016**

JSON Analyse & Transform for Access (JATFA) has been created to simplify the processing of JSON files directly into Access so the data can be saved in normalised Access tables.

1. Installation

The JSON Analyse & Transform for Access application has been designed to run in Access 2010 or later. It is compatible with both 32-bit and 64-bit Access.

The application has **not** been fully tested in Access 2007.

The application will be installed to the folder C:\Programs\MendipDataSystems\JATFA. This location will be made a trusted location Shortcuts will be created on the desktop and start menu.

If you want to remove the application at a later date, do so using Add/Remove Programs

During installation, you will be asked to provide user information

This will be stored in the registry key together with information about the application: HKEY_CURRENT_USER\Software\Mendip Data Systems\ JATFA

NOTE:

At a minimum, you must enter the user name. Other items are optional If you bypass this information during installation, it can be added from the application itself

2. Initial Setup

Each time the application runs, a splash form appears briefly.

Various checks are run whilst the form is visible. It then closes automatically.



When the application is run for the first time, a user information screen will be shown:

| New User Informa | ition | Close |
|---|--|-------|
| Congratulations You have successfully installed JSOI | N Parser version 4.05 | |
| Please check / complete all items b Details entered during program ins | elow tallation are shown where available. | |
| Registered User Name | | |
| Company | | |
| Address | | |
| Telephone | | |
| EMail | | |
| Licence Key | | |
| Support Expiry Date | | |
| | | |
| | | |

Information entered during installation will be retrieved from the registry. If you left any of these fields blank, please enter the information now.

The **licence key and support expiry date** are entered automatically Support is available for 90 days after installation

When the user information form is closed, this message appears:

| Email set | tings not done | \times |
|-----------|--|----------|
| ? | Email has not yet been setup for this application. Do you want to enter email settings now? | |
| | Yes No | |

If you click Yes, the Email Settings form opens:

| Use this form to test settings used t | | | | Close |
|---|---|------------------------------|----------------------------------|----------------------|
| | to send emails from this program | | | |
| Use Outlook for Email | Yes v | | | Clear EMail Settings |
| Settings: | NOTE: The items below are I | NOT required if Outlook is (| used to send email from the prog | ram |
| Send Mail Using Method | ~ | | 1 = local; 2 = network | |
| Port used to send email | | | Usually 25 | |
| Email server | | | e.g. "smtp.gmail.com" | |
| SMTP Authenticate | ~ | | Usually 1 | |
| UserName | | | Default user email for email | from this program |
| Password | | | Password for default user em | ail |
| Timeout (seconds) | | | e.g. 60 | |
| Use SSL | | | True / False | |
| Click the "Save Settings' button if th Click the "Help" button for more info Click the "Clear" button to remove t | e email is sent successfully. ormation if an error message is sh | hown. | in an attached me. | |
| | est eman data nom tins section. | | | |
| Recipient email address | | | | |
| Attachment filename (optional) | | | | Browse |
| | This must be the full file path | of the attachment | | |
| Send Email | Clear Test Email Data | Help | Save Set | ings |
| | The following are used by va | rious features in the progra | im to send emails automatically | |
| Default email addresses: | | | | |
| Default email addresses: Program Support EMail | support@mendipdatasystem | s.co.uk | | |

Email is used to send feedback to customer support Email messages can be sent direct from the application or using **Outlook**.

Complete this form so that email can be sent direct from the application Send a test email to check this is working correctly. If errors occur, click the **Help** button for more information

If the email is sent successfully, click **Save Settings**. NOTE: The settings are **NOT** saved automatically

Close the email settings form. The default **Start form** now opens

3. Start form

This is the default form shown when the application first loads. It contains a summary of the program together with copyright information



Please note the copyright information on this form.

The application uses JSON parser code available from https://github.com/VBA-tools/VBA-JSON Alternative JSON parsers are available from other sources.

If preferred, you can bypass the startup form and load the application at the main form instead

NOTE: When the application loads it checks its path and updates other folder paths accordingly. For example, the folders used for **backups and default JSON files** etc

| Pr | ogram Settings | Close | |
|----|--------------------|---|--|
| ID | ItemName | ItemValue | |
| 1 | ProgramFolder | C:\Programs\MendipDataSystems\JATFA | |
| 2 | DefaultFilesFolder | C:\Programs\MendipDataSystems\JATFA\Files | |
| 3 | BackupFolder | C:\Programs\MendipDataSystems\JATFA\Backups | |
| 4 | VideosFolder | C:\Programs\MendipDataSystems\JATFA\Videos | |
| 5 | ImagesFolder | C:\Programs\MendipDataSystems\JATFA\Images | |
| 6 | HelpFolder | C:\Programs\MendipDataSystems\JATFA\Help | |

4. Main form

This is used for many features of the JSON Analyse & Transform for Access (JATFA) application

| JSON File I | mporter & Parser | Print Summary Admin Exit |
|----------------------------|--|--|
| FileID | 1 | JSON Output: Shrink Expand Copy Edit JSON Go To Top Go To End |
| Search Item Data Source | GeoIP | ["ip"786.154.3.26","city"; "Bude", "region", "England", "region_code", "ENG", "country", "GB", "country_name", "United Kingdom", "postal", "EX3", "latitude" :> 0.8243, "longitude";- 4.5413, "Unitempon", "Kingdondon," assn: "GX3556", "Gam", "Bittish Telecommunications PLC"). |
| URL | https://ipapi.co/json | B |
| File Name | GeoIP.json | |
| Folder Path | C:\Programs\MendipDataSystems\JSONParser\Files | |
| Table Name(s) | tblGeoIP | |
| Transform function | TransformGeoIP SQL | |
| Tristate level | T T=true (unicode), F=false (ascii), M=mixed, D= system default | |
| Import Notes | JSON file saved 23/10/2017 19:58:08 | |
| Comments / Hints | Simple array - straightforward to parse | |
| Difficulty Level | 1 1 = easy; 5 = very complex | |
| Completed | Ticked = data saved to Access table(s) | v |
| Record Count | 1 Number of records saved to table | Total characters in JSON file: 329 Valid JSON File? 🗹 Special Case? 🗆 Analyse JSON |
| Add New | Delete | Displaying as concise JSON data |
| Navigation | N 4 1 of 46 > N | Search item Table Tools Empty Table View Table |
| JSON File Tool: | Get View Transform | External JSON Tools JSON to CSV Excel Power Query JSON Editor Validate JSON |

The form controls can be considered in 3 main sections:

- A) Details of JSON file data source / destination table / transform function
- B) JSON file viewer (shrink / expand) plus tools to analyse / fix JSON files
- C) Navigation and processing tools

Over 65 JSON files have been supplied from the very simple to highly complex. As a rough guide, files have been assigned a difficulty level on a 1-5 scale: 1 (easy) to 5 (very complex)

Processing has been completed for all files as examples More files are also available for which processing has not been done

Although part of the parsing process is common to all JSON files, other sections need to be individualised to match the structure of the source file and the destination table

You can also import your own **JSON** files into the application. However, it is **STRONGLY** recommended that you work through a variety of the supplied examples before doing so.

a) Parse & import an existing file using the transform function Select a file using the navigation buttons or the search combo box

The JSON file will be 'read' into the window on the right of the form

Click the **Transform** button. The data is parsed and imported into one or more normalised tables. The process is extremely fast – usually less than a second even for files of several hundred records

When completed, you will see a message similar to this:



Click **Yes** to view the table of imported data:

| ID | Title • | Genre • | Director - | Duration - | ReleaseYear 🔸 | Website |
|----|--|---------------------------------|------------|------------|---------------|---|
| | 201 Big Kahuna, The | Comedy Drama | Byer | 141 | 1997 | http://mail.ru/purus/aliquet/at/feuglat.jsp |
| | 202 Ride | Drama | Barnish | 101 | 2000 | http://parallels.com/duis/mattis/egestas/metus.js |
| | 203 The Captains | Documentary Sci-Fi | | 171 | 2002 | |
| | 204 Jim Jefferies: I Swear to God | Comedy | Room | 153 | 1993 | http://comsenz.com/nulla/suscipit/ligula.jpg |
| | 205 Nostalghia | Drama | Jakubowsky | 93 | 2001 | https://elpais.com/lacinia/erat/vestibulum/sed/mage |
| | 206 Associate, The | Comedy | Baselli | 182 | 1984 | https://cbslocal.com/odio/elementum/eu/interdum/ |
| | 207 Saint Joan | Drama | Fishpoole | 122 | 2001 | https://github.io/nisi/venenatis/tristique.html |
| | 208 Under the Bombs | Drama War | Parram | 203 | 2005 | https://prweb.com/ultrices/enim/lorem/ipsum/dolog |
| | 209 Still Alice | Drama | Chapellow | 145 | 2003 | http://google.cn/congue.png |
| | 210 Mood Indigo (L'écume des jours) | Drama Fantasy | Willcock | 85 | 2013 | http://smugmug.com/in/lectus/pellentesque/at.xml |
| | 211 Coming Apart | Drama | Castillon | 133 | 1984 | http://accuweather.com/vel.aspx |
| | 212 Novo | Drama | Kempson | 90 | 2002 | https://patch.com/turpis/elementum/ligula/vehicula |
| | 213 Flight of the Living Dead | Action Horror Sci-Fi | Jorgensen | 198 | 2007 | https://furl.net/magnis/dis.json |
| | 214 Wadd: The Life & Times of John C. Holmes | Documentary | Hesse | 178 | 1992 | http://eventbrite.com/aliquam/sit.jpg |
| | 215 Gaslight | Drama Thriller | Fyndon | 77 | 2004 | https://fema.gov/etiam/justo/etiam/pretium/iaculis |
| | 216 Sword of Doom, The (Dai-bosatsu tôge) | Action Drama | Thatcher | 198 | 1999 | http://java.com/penatibus/et.xml |
| | 217 Thesis on a Homicide | Crime Mystery Thriller | Caveau | 87 | 1993 | http://multiply.com/adipiscing.png |
| | 218 One Husband Too Many | Comedy Romance | Merriday | 135 | 2009 | http://wisc.edu/vitae/nisl/aenean/lectus/pellentesg |
| | 219 Don't Give Up the Ship | Comedy | Petrovsky | 167 | 1992 | http://goo.gl/massa/id/lobortis/convallis/tortor.js |
| | 220 Cimarron | Drama Western | Moors | 195 | 2011 | http://virginia.edu/id/mauris.png |
| | 221 Friday the 13th Part VI: Jason Lives | Horror | | 92 | 1997 | |
| | 222 Count Dracula (Nachts, wenn Dracula erwacht) | Horror Mystery | | 83 | 2004 | |
| | 223 King Corn | Documentary | Harris | 116 | 1989 | https://prnewswire.com/sapien/quis.jsp |
| | 224 Canciones de amor en Lolita's Club | Drama | Dailly | 175 | 2004 | http://chron.com/pretium/iaculis/justo/in.png |
| | 225 Volcano (Eldfjall) | Drama | Laying | 125 | 2012 | https://wikipedia.org/rhoncus/sed/vestibulum/sit/ar |
| | 226 Rockabilly Vampire | Comedy Horror | Dehn | 88 | 1989 | http://wordpress.org/curabitur/at/ipsum/ac/tellus/s |
| | 227 Back to the Future Part III | Adventure Comedy Sci-Fi Western | Sokill | 199 | 1994 | https://newsvine.com/tristique/est.json |

NOTE: before importing new data, by default existing data is deleted to prevent duplication of records

If the file cannot be processed, a message like this will be shown instead



Click the **Expand** button to display the data in a format that may be easier to understand

| f addressline1":"Allies Computing Ltd", "addressline2":"Manor Farm Barns", "addressline3":Fork Noad", "addressline3":Fork Noad, "summaryline":"Allies Computing Ltd, Manor Farm Barns, Fork Noad, Framingham Pigot, Norwich, Norolk, Norolk, Norolk, | <pre>{ for the set of the set</pre> | <pre>{ "addressline1":"Allies Computing Ltd", "addressline2":"Manor Farm Barns", "addressline3":Toc Road", "addressline3": Toc Road", "summaryline":"Allies Computing Ltd, Monor Farm Barns, Framingham Pipot, Norroich, Nortoich, "addresslines"/Manor Farm Barns, "addresslines"/Tox Road", "addresslines"/Tox Road", "addresslines"/Tox Road", "addresslines"/Tox Road", "addresslines"/Tox Road", "addresslines"/Tox Road", "Sumanyline"/B 2.B Cashflow Solutions Ltd, Manor Farm Barns, Farnontham Dirot Farnontham Dirot</pre> | | Shrink | Expand | Сору | Edit <u>J</u> SO | N Go T | Го Тор | Go To End |
|--|--|--|--|--|---|------|------------------|--------|--------|-----------|
| "organisation","Allies Computing Lid", "buildingsmei" "Manor Farm Barns", "premise"" Manor Farm Barns", "street" "Fox Road", "dependentiocality:"Framingham Pigot", "aostroum" "Nawyich" | "county":"Norfolk", "postcode"."NR14 7PZ" }, { | "courty:"Norfolk", "postcode"."NR14 7P2" addressline1"."B 2 B Cashflow Solutions Ltd", "addressline3"."Manor Farm Barns", "addressline3"."Fox Road", "addressline3"."Fox Road", "addressline3"."Fox Road", Fox Road, Fox Road, Fox Road, Fox Road, Fox Road, Fox Road, | { "addressline1" "addressline3" "addressline4" "summaryline" Manor Farm Ba Fox Road, Framingham Pi Norvich, Norfolk, NR14 7P2", "organisation" "premise":"Fox Ra "attreemise": "Fox Ra "attreemise": "Fox Ra "attreemise": "Fox Ra "attreemise": "Attracements "attreemise": "Fox Ra "attreemise": "Fox Ra | "Allies Comp: "Manor Farn "Fox Road", "Framinghar "Allies Comp Irns, got, "Allies Comp ""Manor Far nor Farm Bar pad", Iity': "Framin" | buting Ltd", n Barns", n Pigot", buting Ltd, m Barns", ns", rgham Pigot", | | | | | ^ |

Click the Shrink button to return to the default concise format

Click the Edit JSON button to view/edit the file in the default application e.g. Notepad

Occasionally, downloaded JSON files may be supplied in an invalid format. Files which fail a validation check are shown in **RED** and the **Transform** button is **disabled**

| JSON Output: | Shrink | Expand | Сору | Go To Top | Go To End |
|--|---|---|---|--------------------------|-------------------------------|
| ["address":[["str _S_9th_St","stat pcode":"29401", | eet":"2300 eet":"NE","set" """"Charlest | Steele_St","state Steele_St","state Sede","68508","(on")}}} | e":"(CO", "zipcode":"80205 city":"Lincoln"),("street": | ","(city":"Denver"),["st | e":"SC","zi |
| Total characters | in JSON file: | 244 DN data | Valid JSON File? | | ↓ Analyse JSON Fix JSON |

You can correct many JSON errors by clicking the Fix JSON button



Click **Yes** to attempt to fix the errors.

If successful, a message like this will be shown and the file text will revert to **BLUE**



If unsuccessful, the text will remain **RED** as you will not be able to transform (process) the data.

The original **GoogleMaps** file (in the **More Files** folder) is a file that cannot be fixed using this method.

b) External JSON conversion tools

Four other JSON conversion tools are supplied for such cases

i) Online JSON to CSV converter

Click the button – the JSON text is copied to the clipboard Paste the text into the window that appears (or upload it from the file)



The converted data appears in a new window and can be saved to your computer as a CSV file

| | | e | DOWNLOAD | share t convert another | customi | re this result | | |
|---------------------------------|------------------|------------------|------------------|--|---------|---------------------------------|---------------------|-------|
| addressline1 | addressline2 | addressline3 | addressline4 | summaryline | number | organisation | buildingname | |
| Allies Computing Ltd | Manor Farm Barns | Fox Road | Framingham Pigot | Allies Computing Ltd, Manor Farm Barns, Fox Road, Fra | | Allies Computing Ltd | Manor Farm Barns | Mar |
| B 2 B Cashflow Solutions Ltd | Manor Farm Barns | Fox Road | Framingham Pigot | B 2 B Cashflow Solutions Ltd, Manor Farm Barns, Fox | | B 2 B Cashflow Solutions Ltd | Manor Farm Barns | Mar |
| Brasteds Event Excellence | Manor Farm Barns | Fox Road | Framingham Pigot | Brasteds Event Excellence, Manor Farm Barns, Fox Roa | | Brasteds Event Excellence | Manor Farm Barns | Mar |
| Brasteds Lodge | Manor Farm Barns | Fox Road | Framingham Pigot | Brasteds Lodge, Manor Farm Barns, Fox Road, Framingha | | Brasteds Lodge | Manor Farm Barns | Mar |
| Conker Interiors Ltd | Manor Farm Barns | Fox Road | Framingham Pigot | Conker Interiors Ltd, Manor Farm Barns, Fox Road, Fra | | Conker Interiors Ltd | Manor Farm Barns | Mar |
| East Anglias Childrens Hospices | Manor Farm Barns | Fox Road | Framingham Pigot | East Anglias Childrens Hospices.Manor Farm Barns,F | | East Anglias Childrens Hospices | Manor Farm Barns | Mar |
| Eastern Chauffeurs Ltd | Manor Farm Barns | Fox Road | Framingham Pigot | Eastern Chauffeurs Ltd, Manor Farm Barns, Fox Road, F | | Eastern Chauffeurs Ltd | Manor Farm Barns | Mar |
| Equal Lives | Manor Farm Barns | Fox Road | Framingham Pigot | Equal Lives.Manor Farm Barns,Fox Road,Framingham P | | Equal Lives | Manor Farm Barns | Mar |
| Estate Office | Manor Farm Barns | Fox Road | Framingham Pigot | Estate Office.Manor Farm Barns.Fox Road.Framingham | | Estate Office | Manor Farm Barns | Mar |
| Framingham Pigot Parish Meeting | Manor Farm Barns | Fox Road | Framingham Pigot | Framingham Pigot Parish Meeting, Manor Farm Barns, F | | Framingham Pigot Parish Meeting | Manor Farm Barns | Mar |
| Genesis Lifts Ltd | Manor Farm Barns | Fox Road | Framingham Pigot | Genesis Lifts Ltd, Manor Farm Barns, Fox Road, Framin | | Genesis Lifts Ltd | Manor Farm Barns | Mar |
| Mancroft International | Manor Farm Barns | Fox Road | Framingham Pigot | Mancroft International, Manor Farm Barns, Fox Road, F | | Mancroft International | Manor Farm Barns | Mar |
| Paradox | Manor Farm Barns | Fox Road | Framingham Pigot | Paradox, Manor Farm Barns, Fox Road, Framingham Pigot | | Paradox | Manor Farm Barns | Mar |
| Serenity Training Ltd | Manor Farm Barns | Fox Road | Framingham Pigot | Serenity Training Ltd, Manor Farm Barns, Fox Road, Fr | | Serenity Training Ltd | Manor Farm Barns | Mar |
| Variblast Ltd | Manor Farm Barns | Fox Road | Framingham Pigot | Variblast Ltd. Manor Farm Barns. Fox Road, Framingham | | Variblast Ltd | Manor Farm Barns | Mar |
| (Potter) | Fox Road | Framingham Pigot | | (Potter), Fox Road, Framingham Pigot, Norwich, Norfolk | | | (Potter) | |
| Beck Cottage | Fox Road | Framingham Pigot | | Beck Cottage, Fox Road, Framingham Pigot, Norwich, Nor | | | Beck Cottage | E |
| Burnside | Fox Road | Framingham Pigot | | Burnside.Fox Road.Framingham Pigot.Norwich.Norfolk | | | Burnside | |
| Charles Cottage | Fox Road | Framingham Pigot | | Charles Cottage, Fox Road, Framingham Pigot, Norwich, | | | Charles Cottage | Cł |
| Cottage-On-The-Beck | Fox Road | Framingham Pigot | | Cottage-On-The-Beck, Fox Road, Framingham Pigot, Norw | | | Cottage-On-The-Beck | Cotta |
| Foxes Cottage | Fox Road | Framingham Pigot | | Foxes Cottage.Fox Road, Framingham Pigot, Norwich, No | | | Foxes Cottage | F |
| Framingham Cottage | Fox Road | Framingham Pigot | | Framingham Cottage, Fox Road, Framingham Pigot, Norwi | | | Framingham Cottage | Fram |

ii) Excel Power Query

This message appears – click **OK** to open **Excel** and run **Power Query**



Or click Help to view a short video (18 seconds) demonstrating how this tool is used

NOTE:

For Access 2010/2013, you must first install the Excel Power Query add-in

iii) JSON Editor

This is useful to help edit **JSON** files into a valid format Upload your file or paste into the left window. The right window allows you to view each section of the file in a tree-view structure

| 🕞 🗮 Code • | > < | 2 + 0 C Tree - |
|--|-----------|---|
| 1 ["response":["status":"ok", "userTier":"developer", "total":1992123, "startIndex":1, "pageSize" | | C object (13 |
| 18. "currentPage":1. "pages":199213."order8v": "pewest"."results":[("td":"footbal]/live/2017 | | [] object [1] |
| /nov/06/fa-cup-second-round-draw-live"."type"."liveblog"."sectionId":"football"."sectionName | Load File | response (9) |
| ""Football", "webPublicationDate": "2017-11-06719:20:072", "webTitle": "FA Cup second-round | | |
| draw - live!"."webUc1":"https://www.theguardian.com/football/live/2017/nov/06/fa-cup-second | | status : ok |
| -round-draw-live", "apiUrl": "https://content.guardianapis.com/football/live/2017/nov/06/fa | Save File | 2 D vrastias : developer |
| -cup-second-round-draw-live", "isHosted"; false, "pillarId": "pillar/sport", "pillarName" | | |
| :"Sport"), ("id":"commentisfree/2017/nov/06/the-guardian-view-on-russias-revolutionary | | total : 1992123 |
| -centenary-it-shook-the-world-then-it-failed", "type": "article", "sectionId": "commentisfree" | | |
| ,"sectionName":"Opinion","webPublicationDate":"2017-11-06T19:18:222","webTitle":"The | | :: StartIndex : 1 |
| Guardian view on Russia's revolutionary centenary: it shook the world - then it failed | | E DageSize : 10 |
| Editorial", "webUrl": "https://www.theguardian.com/commentisfree/2017/nov/06/the-guardian-view | | |
| -on-russias-revolutionary-centenary-it-shook-the-world-then-it-failed","apiUrl":"https | | currentPage : 1 |
| ://content.guardianapis.com/commentisfree/2017/nov/06/the-guardian-view-on-russias-revolutio | | |
| nary-centenary-it-shook-the-world-then-it-failed","isHosted":false,"pillarId":"pillar | | pages - 199213 |
| /opinion","pillarName":"Opinion"),("1d":'uk-news/2017/nov/06/more-than-200-grenfell-children | | 🗄 📋 orderBy : newest |
| -stil-in-b6s-five-months-on-mps-told", type:/article", sectionid //wk-news, sectionName" | | 11 million from |
| : OK news , webrubicationuate : 207-11-0019:17/112 , webitte : nore than 200 grenteil | | T Pesuits [10] |
| children still in bass live months on, bys told , weburi : https://www.theguardian.com/uk | | ○ 0 (11) |
| "adjub", "bttps://content.guergianaic.com/ub.guer/2017/adu/06/wora.thes.200 menfall | | |
| children.still in bbs.five.months.on.mns.told" "isHosted":false) ("id":"news/2017/nov/05 | | id : football/live/2017/nov/06/fa-cup-second-round- |
| /need-for-transparency-about-offshore-investments-underlined-by-paradise-papers", type" | | draw-live |
| :"article", "sectionId": "news", "sectionName": "News", "webPublicationDate": "2017-11-06T19:11 | | 🗄 🗇 type : liveblog |
| :562", "webTitle": "Need for transparency about offshore investments underlined by Paradise | | 12 III sastianTd : fastball |
| Papers Letters", "webUrl": "https://www.theguardian.com/news/2017/nov/06/need-for-transparen | | Sectionid - Vootball |
| cy-about-offshore-investments-underlined-by-paradise-papers", "apiUrl": "https://content | | sectionName : Football |
| .guardianapis.com/news/2017/nov/06/need-for-transparency-about-offshore-investments-underlin | | |
| ed-by-paradise-papers", "isHosted":false}, {"id":"politics/2017/nov/06/jeremy-corbyn-theresa | | webPublicationDate = 2017-11-00119:2010/2 |
| <pre>-may-cbi-conference-brexit", "type": "article", "sectionId": "politics", "sectionName": "Politics"</pre> | | webTitle : FA Cup second-round draw - live! |
| "webPublicationDate":"2017-11-06719:08:222", webTitle":"Corbyn's sweet nothings get | | |
| business leaders rolling over for a tummy tickle John Crace", webUrl : https://www | | webUrl: https://www.theguardian.com/football/live/2017/ |
| .theguardian.com/politics/2017/nov/00/jerem/corpyn-theresa-may-cbi-conterence-Dexit Testinal Testina (instance) (insta | | nov/86/Ta-cup-second-round-draw-live |
| , aplor1 : https://cutent.guarolanapis.com/pointics/201/h0/vo/jeremy-cureya-may | | apiUrl: https://content.guardianapis.com/football/live/ |
| <pre>-cbiconference-prexit; isobted :fmise; { lo : busines; 2017/nov/e0/nos-recentering ddi.isobted: isobted :fmise; { lo : busines; 2017/nov/e0/nos-recentering ddi.isobted: isobted :fmise; } </pre> | | 2017/nov/06/fa-cup-second-round-draw-live |
| neur "restionizes": " and bull stions that " 1017-11.0510.07.257" " active to the | | isHosted : false |
| faced nationalisation if we did not take it over, ex-Lloyds boss tells court, "webUrl" | | C D attraction attractions |
| :"https://www.theguardian.com/business/2017/nov/06/hbos-faced-nationalisation-if-we-did-not | | pillarid : pillar/sport |
| -take-it-over-ex-llovds-boss-tells-court", "apiUrl": "https://content.guardianapis.com | | 2 [] pillarName : Sport |
| /business/2017/nov/06/hbos-faced-nationalisation-if-we-did-not-take-it-over-ex-lloyds-boss | | |
| -tells-court", "isHosted": false}, {"id": "us-news/2017/nov/06/woman-trump-middle-finger-fired | | |
| the second second states and the second s | | |

iv) Validate JSON

Use to check for errors in the JSON file Upload your file or paste into the window then click **Validate JSON**

| 1 - | 11 |
|------|---|
| 2 | "id": "5968dd23fc13ae04d9000001", |
| з | "product_name": "(I am a spammer)", |
| 4 | "supplier": "Wisozk Inc", |
| 5 | "quantity": 261, |
| 6 | "unit_cost": "\$10.47" |
| 7 • |), (|
| 8 | "id": "5968dd23fc13ae04d900002", |
| 9 | "product_name": "Mountain Juniperus ashei", |
| 10 | "supplier": "Keebler-Hilpert", |
| 11 | "quantity": 292, |
| 12 | "unit_cost": "\$8.74" |
| 13 • |), (|
| 14 | "id": "5968dd23fc13ae04d9000003", |
| 4.5 | |
| Val | idate JSON Clear Support JSONLint for \$2/Month |
| Resu | lts |
| val | Id JSON |

If the file is valid, the above message will be shown in **GREEN** If there are errors, these will be shown in the Results section in **RED**



Use this tool to work through and correct the errors. Once you have a valid file, you can copy the corrected version & overwrite the original file

c) Transform other supplied files

Once you have tested several of the prepared **JSON** files and read the code used to process them, you can try to create your own transform functions on some of the other supplied files.

As an example, the Employees file (ID = 13) is used below

| ISON File I | mporter & Parser | | | | Print Su | mmary | Admin | Quit | | |
|-----------------------|--|--|--|---|--|--|--|--|--|--|
| FileID | 13 | | JSON Output: | Shrink | Expand | Сору | Edit <u>I</u> SON | Go To Top Go To End | | |
| Search Item | Employees | | [{"id":1,"EmpID":"1 | 8- | | | | , | | |
| Data Source | Mockaroo | | 3703159","FirstNa | me":"Chryst | el","LastName":"E | Dillicate","Title" "id":2 "EmpID": | "Mr","Gender":"Fem | ale","DOB":"17/08/2000","Departme | | |
| URL | https://api.mockaroo.com/api/22b219b0?count=10 0&key=ef799ed0 | | O652122", "Firsthame": "Moressa", "Lasthame": "Nestor, "Title": "Mr.", "Gender": "Temale", "D0B": "0702/1987", " "Sopport", "JobTitle": "Ubarrian", "Lid", "Emplo": "One-"Sopport", "JobTitle": "Mr.", "Gender": "Maile", "D0B": "06/12/1952", "Departed", "Sopport", "JobTitle", "Markien, "Barcell", "Title", "Rev", "Gender": "Maile", "D0B": "06/12/1952", "Departed", "Sopport", "JobTitle", "Markien, "Basthame", "Armolio", "Armolio, "Armolio, "Armolio", "Armolio, "Arm | | | | | | | |
| File Name | Employees.json | 44 | 7367126","FirstNa | me":"Mario | n","LastName":"G | oschalk","Title" | "Mr","Gender":"Ma | le","DOB":"02/12/1957","Department" | | |
| Folder Path | C:\Programs\MendipDataSystems\ISONParser\Files | | 28041377 "Firsthame" "Mellica" [Lasthame" "Chiechio", "Thie""Dr", "Gender", "Female", "DOB", "21/06/1996", "Departmeters", "Idottica", "Cancino", "Thie", "Dr", "Gender", "Female", "DOB", "21/06/1996", "Departmeters", "Idottica", "Cancino", "Sender", "Female", "DOB", "21/1/1957", "Departmeters", "Idottica", "Cancino", "Sender", "Female", "DOB", "21/1/1957", "Departmeters", "Idottica", "Cancino", "Sender", "Female", "DOB", "21/06/1996", "Departmeters", "Idottica", "Cancino", "Sender", "Female", "DOB", "21/06/1996", "Departmeters", "Idottica", "Cancino", "Sender", "Female", "DOB", "21/1/1957", "Departmeters", "Idottica", "Cancino", "Sender", "Female", "DOB", "21/1/1957", "Departmeters", "Idottica", "Cancino", "Sender", "Sender, "Sender", Sender, "Sender", Sender, "Sender", Sender, "Sender, "Sender", Sender, "Sender, "Sender", Sender, "Sender, "Sender", "Sender, "Sender, "Sender", Sender, "Sender, "Sender | | | | | | | |
| Table Name | tblEmployees | | esearch and Devel 5073957","FirstNa | opment","Jo me":"Eveline | bTitle":"Director (e","LastName":"La | of Sales"},{"id":7 impe","Title":"M d":8 "Emplo":"E | ,"EmpID":"19- s","Gender":"Female | ","DOB":"18/07/1984","Department": | | |
| Transform function | TransformEmployees | Augustering , Norme : minimum Aurismi, J. M. 8, Chiple J. 50- 500 (2000) (20 | | | | | | | | |
| Tristate level | T T=true (unicode), F=false (ascii), M=mixed, D= system default | | "Business Develop 3818153", "FirstNa Product Managem | ment","JobT me":"Samso ent"."JobTitl | itle":"Software Co n","LastName":"S e":"Junior Executi | nsultant"},{"id" trand","Title":"R ive"}.{"id":11."Er | ev","Gender":"30- ev","Gender":"Male | ","DOB":"24/03/1972","Department":" | | |
| Import Notes | JSON file saved 21/09/2017 23:37:18 | | 9706209","FirstNa "Product Managen 4964775","FirstNa | me":"Cleopa nent","JobTit me":"Redfor | itra","LastName": le":"Staff Scientis d","LastName":"C | "Rey", "Title": "Re it"}, {"id": 12, "Em rock", "Title": "Re | v","Gender":"Female DD":"57- v","Gender":"Male", | ","DOB":"06/01/1954","Department": "DOB":"28/02/1998","Department":"H | | |
| Comments / Hints | Simple array - straightforward to parse | 4964775', "Histilame". Reditord', Lastilame "Crock", "Ittle", "Kev," Gender: "Male", "D08": 28/02/1998", "Department" 488876', "Histilame", "Courter, "Lastilame "Crock", "Listila", "Emplo", "Sander: "Male", "D08": 03/04/1995', "Department" 4188876', "Histilame", "Courter, "Lastilame", "Crocker, "Listila", "Emplo", "Sander: "Male", "D08": 03/04/1995', "Department", "Battilame", "Monter, "Listilame", "Monter, "Listilame", "Battilame, "Sander, "Male", "D08": 03/04/1995', "Department", "Battilame, "Monter, "Listilame, "Monter, "Listilame," Male", "D08": 17/03/1999', "Department", "Battilame", "Monter, "Listilame," Male", "D08": 17/03/1999', "Department", "Battilame, "Monter, "Listilame," Male", "D08": 17/03/1999', "Department", "Battilame, "Hole", "Listilame," Male", "D08": 17/03/1999', "Department", "Battilame," Tide, "Listilame," Male", "D08": 17/03/1999', "Department", "Battilame," Hole", "Listilame," Male", "D08": 12/01/17/03/1999', "Department", "Battilame," Tide, "Listilame," Male", "D08": 12/01/17/03/1999', "Department", "Battilame," Hole", "Listilame," Male", "D08": 12/01/17/03/1999', "Department", "Battilame," Hole, "Listilame,", "Monter, "Listila | | | | | | | | |
| Difficulty Level | 1 1 = easy; 5 = very complex | | 6951107","FirstNa ining","JobTitle":"S | me":"Deck", enior Cost A | "LastName":"Bran ccountant"},{"id" | ndo", "Title": "Mr 17, "EmpID": "19 | ,"Gender":"Male","E | 008":"03/09/1962","Department":"Tra | | |
| Completed | Ticked = data saved to Access table(s) | | :"Services","JobTit | e":"Software | e Test Engineer IV | "},{"id":18,"Emp | D":"75- | e , 505 . 10/01/1966 , Department | | |
| Record Count | 100 Number of records saved to table | | Total characters | in JSON fi | le: 18495 | Valid JSON F | ile? 🗹 Spec | ial Case? | | |
| Add New | Delete | | Displaying as | concise . | ISON data . | | | | | |
| Navigation | N 4 13 of 63 N | | Search Item | | | ~ T | able Tools | Empty Table View Table | | |
| JSON File Tool: | Get View Transform | | External JSON To | ols j | SON to CSV | Excel Po | wer Query | JSON Editor Validate JSO | | |

Your first task is to create the fields for the destination table – **tblEmployees** This can be done in 2 ways:

i) Click the small **Design** button to the right of the table name

| Table Name | tblEmployees | |
|------------|--------------|------|
| | | |

If the table has already been created, it will open in **design view:**

| Field | Vame | Data Type | Description | 1 |
|--|-------------------------------------|------------|--|---|
| | vanie | Number | ID Whole number, Required Unique | |
| IU Small | | Taut | Ib. Whole humber, kequired, onique. | _ |
| EmplD | | lext | EmplD. 20-char max. | |
| FirstName | | Text | FirstName. 20-char max. | |
| LastName | | Text | LastName. 20-char max. | |
| Title | | Text | Title. 50-char max. | |
| Gender | | Text | Gender. 20-char max. | |
| DOB | | Date/Time | DOB. | |
| Department | | Text | Department, 50-char max, | |
| JobTitle | | Text | JobTitle, 50-char max. | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | Field Pronerties | |
| | | | Field Properties | |
| General Lookup | | | Field Properties | |
| General Lookup Field Size | Integer | | Field Properties | |
| General <mark>Lookup</mark> Field Size Format | Integer | | Field Properties | |
| General Lookup Field Size Format Decimal Places | Integer Auto | | Field Properties | |
| General Lookup Field Size Format Decimal Places Input Mask | Integer Auto | | Field Properties | |
| General Lookup Field Size Format Decimal Places Input Mask Caption | Integer Auto | | Field Properties | |
| General Lookup Field Size Format Decimal Places Input Mask Caption Default Value | Integer Auto | | Field Properties | |
| General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule | Integer Auto | | Field Properties A field name can be up to 64 characters Ion including spaces. Press F1 for help on field | |
| General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule Validation Text | Auto | | Field Properties A field name can be up to 64 characters lon including spaces. Press F1 for help on field names. | |
| General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule Validation Text Required | Auto | | Field Properties A field name can be up to 64 characters Ion including spaces. Press F1 for help on field names. | |
| General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Rule Validation Rule Validation Text Required Indexed | Integer Auto No Yes (No Du | uplicates) | Field Properties A field name can be up to 64 characters lon including spaces. Press F1 for help on field names. | |
| General Lookup Field Size Format Decimal Places Input Mask Caption Default Value Validation Text Required Indexed Smart Tags | Auto No Yes (No Du | plicates) | Field Properties A field name can be up to 64 characters lon including spaces. Press F1 for help on field names. | |

Otherwise a message like this will be shown:



Click **Yes** to create the table.

The file will be analysed and suggested field names / datatypes determined. The new table will then be created based on this analysis. This process is very quick and will be followed by this message:

| New tabl | e created | Х |
|----------|--|---|
| | A new table tblEmployees has been successfully created | |
| | Click OK to open the table in design view | |
| | | |
| | OK Cancel | |

Click **OK** to view the table design. Edit the fields as required

ii) If you want more control over the process (RECOMMENDED), click the Analyse button.
 Once again, the file will be analysed, and suggested field names / datatypes determined.
 However, this time a file analysis form opens:

| FileID: 13 File Name : Employees.json Valid JSON Nite? Special Case? W Difficulty Level Array: The JSON file has no sub-arrays Image: Status and Status | | | | | | | | | | 0 | | Differents of | | |
|--|---|-------------------|--------------|--|------------------------------|----------------------------------|--|--|--|--|--|--------------------------------|-------------|--|
| Array: The JSON file has no sub-array: View Field & distance The suggested table structures is shown below for the table design, uncheck the INP check box for CAULUDE any field from the table design, uncheck the INP check box for CAULUDE any field from the table design, uncheck the INP check box for CAULUDE any field from the table design, uncheck the INP check box for CAULUDE any field from the table design, uncheck the INP check box for CAULUDE any field from the table design, uncheck the INP check box for CAULUDE any field from the table design. Analysis 02 0 Ref NOTE: Some complex structures may not be correctly analysed. AUWAYS CHECK the file yourself. Analysis 02 0 Ref 1 0 Nome complex structures may not be correctly analysis 02 0 Bind distance Holemployees Ind 3 FirstName Text 50 10 and IbEmployees | FileID | : | 13 | File Name : | Employ | ees.json/ | | | Valid JSON file? | Special Case? | | Difficulty L | evel | |
| Fields & datatypes: The suggested table structure is shown below. Field order, it pames & datatypes can be modified as you wish. To EXCLUDE any field from the table design, uncheck the INPERCENCE or Analysis OK2 Image of the primary key (PK) field if needed. COMPOSITE primary keys are NOT allowed Ref NOTE : Some complex structures may not be correctly analysed. ALWAYS CHECK the file yourself. Analysis OK2 Image of the primary keys are NOT allowed Ref 1 D Number Integer 1 id Sub-array Level lable Name IbEmployees 2 Emplo Text 50 1 10/2 Sub-array Level lable Name IbEmployees 3 FirstName Text 50 Chrystel FirstName IbEmployees 4 LastName Text 50 Deremain Gender IbEmployees IbEmployees 5 Title Text 50 Female Gender IbEmployees 6 Gender Text 50 Female Gender IbEmployees 8 Department Text 50 Staff Accountant III JobTitle IbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle | Arrays | : | т | he JSON file ha | s no sub-ai | rrays | | | | | | | | |
| Fields & datatypes: The suggested table structure is shown below. Field order, if we mere & datatypes can be modified as you wish. To EXCLUDE any field from the table design, uncheck the INUEX check box You can also change the primary key (PK) field if needed. COMPOSITE primary keys are NOT allowed Ref NOTE : Some complex structures may not be correctly analysed. ALWAYS CHECK the file yourself. Analysis OK? Ref 1 0 0 Number integer 1 id Ubternployees 2 EmplD Toxt 50 19-3703159 EmplD Ubternployees 3 FirstName Text 50 Chrystel FirstName Ubternployees 5 Title Text 50 Market EmplD Ubternployees 6 Gender Text 50 Market Text 50 Title 7 DOB Date/Time Date TriNol2000 DOB Ubternployees 5 8 Department Text 50 Finaling Department Ubternployees 9 JobTitle Text 50 Staff Accountant III JobTitle Text fields identiffied : Imarkform Data Tra | | | | | | | | _ | | | | | Vie | |
| To EXCLUDE any field from the table design, uncheck the INL Index check box You can also change the primary key (PK) field if needed. COMPOSITE primary keys are NOT allowed Ref NOTE : Some complex structures may not be correctly analysed. ALWAYS CHECk the file yourself. Analysis OK2 (Pt) Bur 1 D Number Integer 1 id tbEmployees tbEmployees 2 EmplD Text 50 Chrystel FirstName tbEmployees 3 FirstName Text 50 Chrystel FirstName tbEmployees 4 LastName Text 50 Dilicate Chrystel FirstName tbEmployees 5 Title Text 50 Permale Gender tbEmployees tbEmployees 6 Gender Text 50 Permale Gender tbEmployees tbEmployees 8 Department Text 50 Permale Gender tbEmployees Text Staff Accountant III JobTitle JobTitle Textsform Data Transform 5 Tatle Text 50 Staff Accountant IIII | Fields | & datat | ypes: T | he suggested to | able structu | ure is shown | below. F | ield order, fi r th ames | & datatypes can be modifie | d as you wish. | | | Rer | |
| You can also change the primary key (FX) field if needed. COMPUSITE primary keys are NOT allowed NOTE : Some complex structures may not be correctly analysed. ALWAYS CHECK the file yourself. Analysis OK? Rer Order FK, Fried/ Stoggested Field Name Number Integer 1 id Stobarray Level Table Name Toble Name T | | | Т | o EXCLUDE any | field from | the table de | sign, und | heck the INC UPE chee | sk box | | | | 0-6 | |
| NOTE: Some complex structures may not be correctly analysed. ALWAYS CHECK the file yourself. Analysis DK? Bur Order PK Held? Suggested Held Name Datatype Size / Type Include? Sample Data Subarray Level Table Name Text Files Ide Name | | | Ŷ | ou can also cha | ange the pr | imary key (P | K) field if | needed. COMPOSITE p | rimary keys are NOT allowe | a | | | кето | |
| Order PK: Held? Suggested Field Name Datatype Size / Type Integer 1 id Sub-array Level Table Name 1 D Number Integer 1 id tblEmployees 3 Emplo Text 50 193703159 Emplo tblEmployees 3 FirstName Text 50 Ohrystel FirstName tblEmployees 4 LastName Text 50 Difficato LastName tblEmployees 5 Title Text 50 Mr Title tblEmployees 6 Gender Text 50 Mr Title tblEmployees 7 DOB Date/Time Date 17/08/2000 D0B tblEmployees 9 JobTitle Text 50 Xaff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text | NOTE | | S | ome complex st | tructures m | ay not be co | rrectly a | nalysed. ALWAYS CHEC | CK the file yourself. | | Analys | sis OK? 🗹 | <u>R</u> un | |
| 1 D Number Integer 1 id tbEmployees 2 EmplD Text 50 18-3703159 EmplD tbEmployees 3 FirstName Text 50 Chrystel FirstName tbEmployees 4 LastName Text 50 Dilicate LastName tbEmployees 5 Title Text 50 Dilicate LastName tbEmployees 6 Gender Text 50 Final Gender tbEmployees 7 DOB Date/Time Date 17/08/2000 DOB tbEmployees 8 Department Text 50 Training Department tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 JobTitle Text 50 Staff Accountant II | Order | PK Field | 1? Suggested | Field Name | Datatype | Size / Type | Include | ? Sample Data | JSON Field | Sub-array | Level Table | Name | 1 | |
| 2 Emplo Text 50 19.3703159 Emplo tblEmployees 3 FirstName Text 50 Chrystel FirstName tblEmployees 4 LastName Text 50 Dilitate LastName tblEmployees 5 Title Text 50 Mr Title tblEmployees 6 Gender Text 50 Female Gender tblEmployees 7 DOB Date/Time Date 1708/2000 DOB tblEmployees 8 Department Text 50 Training Department tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees JSON file contents: [[1:di-1:femploi/18-3703159"; firstName"Chrystel", "LastName" Content", "Text", "T | 1 | \checkmark | ID | | Number | Integer | | 1 | id | | tblEm | ployees | | |
| 3 FirstName Text 50 Chrystel FirstName tblEmployees 4 LastName Text 50 Dilicate LastName tblEmployees 5 Title Text 50 Dilicate LastName tblEmployees 6 Gender Text 50 Pemale Gender tblEmployees 7 DOB Date/Time Date Training Department tblEmployees 8 Department Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 7 DOS Staff Accountant III JobTitle tblEmployees Trainsfor 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 1 Staff Accountant III JobTitle tblEmployees Transform Function Transform Employees Transform 1SON file contents: IfIcriting 2.mpiniting 2.mpiniti | 2 | | EmpID | | Text | 50 | | 18-3703159 | EmpID | | tblEm | ployees | | |
| 4 LastName Text 50 Dilicate LastName tblEmployees 5 Trile Text 50 Mr Title tblEmployees 6 Gender Text 50 Mr Title tblEmployees 7 DOB Date/Time Date 17/08/2000 DOB tblEmployees 8 Department Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 15ON file contents: [[ftd*1, templo*1:18-3703159*/FirstName*/Chipstef*/LastName*/Ollicate*/Title*/Mr*/Cende*/Temple*/000*/02/13/05/200*/00*/02/10/05/200*/00*/02/10/05/200*/00*/00*/00*/00*/00*/00*/00*/00*/00 | 3 | | FirstName | | Text | 50 | | Chrystel | FirstName | | tblEm | ployees | | |
| 5 Title Text 50 Mr Title tbEmployees 6 Gender Text 50 Female Gender tbEmployees 7 DOB Date/Time Date 17/08/2000 DOB tbEmployees 8 Department Text 50 Training Department tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tbEmployees 9 Toble Name tbEmployees Create Table Transform Function [TransformEmployees] Transform Employees JSON file contents: [[fidd"1, "Employ"18-3703159", "firstName"Chrystel", "LastName"Chrystel", "LastName"Content", Title", "Mr.", Gender", "Female", "DOB", "JOBTITE", "Therais Transform Employ | 4 | | LastName | | Text | 50 | | Dillicate | LastName | | tblEm | ployees | | |
| 6 Gender Text 50 Female Gender tblEmployees 7 DOB Date/Time Date 17/08/2000 DOB tblEmployees 8 Department Text 50 Training Department tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text Staff Accountant IIII JobTitle tblEmployees TextStaff Accountant IIII Tex | 5 | | Title | | Text | 50 | | Mr | Title | | tblEm | ployees | | |
| 7 DOB Date/Time Date 17/08/2000 DOB tblEmployees 8 Department Text 50 Training Department tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Table Name tblEmployees Create Table Transform Function Transform Employees JSON file contents: [["cirl_1"tmpl0"]18-3703159", "firstName" "Chirystel", "LasName" "Chirystel", "LasName" "Collicate", "Title": Mr." (Cender "Temale", "DOB"07/26/397", "Department", "Training "JobTitle", "Staff Accountant III", Ind", 2, Templo", "JobTitle", "Marking "Assistant", "DolLas ass", "LasName", "Cender "Temale", "DOB"07/26/397", "Department", "Start, "JobTitle", "Marking Assistant", "Ind", 2, Templo", "JobTitle", "Marking Assistant", "Gender "Temale", "DOB"07/20/2015/2057", "Department", "Start, "JobTitle", "Marking Assistant", Ind", 2, Templo", "JobTitle", "Marking Assistant", Ind", 2, Templo", "JobTitle", "Marking", "Start, "JobTitle", "MarkingAssistant, III", Ind", 2, Templo", "JobTitle", "Marki | 6 | | Gender | | Text | 50 | | Female | Gender | | tblEm | iployees | | |
| 8 Department Text 50 Training Department tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 9 JobTitle Text 50 Staff Accountant III JobTitle tblEmployees 7 Total fields identified: 9 Table Name tblEmployees Create Table Transform Function Transform Employees Image: Staff Accountant Image: Staff Accountant Transform Employees Image: Staff Accountant Image: Staff Accountant Transform Employees Image: Staff Accountant Transform Employees Image: Staff Accountant Image: Staff Accountant Transform Employees Image: Staff Accountant Image: Staff Accountant Image: Staff Accountant Transform Employees Image: Staff Accountant Image: Staff | 7 | | DOB | | Date/Time | Date | | 17/08/2000 | DOB | | tblEm | ployees | | |
| 9 JobTitle Text 50 Staff Accountant III JobTitle tbiEmployees Total fields identified : 9 Table Name tbiEmployees Create Table Transform Function Transform Data Transform Data JSON file contents: [ft:df:1;Emplo*:18-3703;59"/TirstName**Cherkstift:LastName**Dilicate*_Title**M**/Gender**Female**D08**17/08/2000**20partment**Training**JobTitle**Staff Accountant JSON file contents: [ft:df:1;Emplo*:18-3703;59"/TirstName**Cherkstift:LastName**Dilicate*_Title**M**/Gender**Female**D08**17/08/2000**20partment**Training**JobTitle**Ubraina 1/(1d*3;Emplo**12- 1002/795**/FirstName**Gender**Title**M***Gender***Gender***Gender***Staff***/Compartment***Staff***/TobTitle***Ubraina*****/Title************************************ | 8 | | Departmer | nt | Text | 50 | | Training | Department | | tblEm | ployees | | |
| Total fields identified: 9 Table Name tblEmployees Create Table Transform Function TransformEmployees Image: Transform Data Transform Data Transform Data JSON file contents: [[11:1],11:2],12:0;0;12:8;0;12:8;12:0;0;12:8;12:0;0;12:8;12:0;0;12:8;12:0;0;12:8;12:0;0;12:9;12:0;0;12:0;0;12:9;12:0;0;12:0;0;12:9;12:0;0;12:0;0;12:9;12:0;0;12:9;12:0;0; | 9 | | JobTitle | | Text | 50 | | Staff Accountant III | JobTitle | | tblEm | ployees | | |
| Total fields identified : 9 Table Name tblEmployees Create Table Transform Function Transform Employees Image: Transform Data Transform Data <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<> | | | | | | | | | | | | | | |
| Total fields identified : 9 Table Name Iblemployees Create Table Transform Function Transform Employees Mail Transform JSON file contents: [[['di'1, 'Emplo'18-8703159', 'FirstName'', Chrystel', 'LastName'', Clicitate', 'Title', 'Mr', 'Gender', 'Female', 'DOB''17/08/2000', 'Department', 'Transform Mail Transform Transform <tht th="" transform<=""> <th <="" td="" transform<=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th></tht> | <td></td> | | | | | | | | | | | | | |
| Total fields identified : 9 Table Name tblEmployees Create Table Transform Function Transform Employees Transform Data Transform JSON file contents: [['di'1, 'Emplo'1:8-3703159', 'FirstName'', 'Chrystel', 'LastName'', 'Dillicate', 'Title', 'Md', 'Cender', 'Female', 'DOD', '17/08/2000', 'Department', 'Training', 'JebTitle', 'Staff Accountant Shrink Expand (['di'1, 'Emplo': 18-3703159', 'FirstName'', 'Bers', 'Gender', 'Title', ''Md', 'Cender', 'Female', 'DOD', '17/08/2000', 'Department', 'Training', 'JebTitle', 'Staff Accountant USD', 'Expand USD', 'FirstName'', 'Mers', 'SastName', ''Mers', 'Gender', 'Temale', 'DOB', '07/02/1987', 'Department', 'Sates', 'JebTitle', ''Mash', 'Gender', 'Temale', 'DOB', '002/12/1987', 'Department', 'Sates', 'JebTitle', ''Mash', 'Gender', 'Female', 'DOB', '02/12/1987', 'Department', 'Sates', 'JebTitle', ''Mash', 'Gender', 'Female', 'DOB', '20/12/1987', 'Department', 'Sates', 'JebTitle', ''Mash', 'Gender', 'Female', 'DOB', '20/12/1987', 'Department', 'Sates', 'JebTitle', ''Accountant II', 'I'd', 'Emplo''.'12-204137', 'FirstName', ''Gender', 'Female', 'DOB', '20/12/1987', 'Department', 'Sates', 'JebTitle', 'Mash', 'Gender', 'Female', 'DOB', '21/06/1996', 'Department', 'Sates', 'JebTitle', 'Accountant II', 'I'd', 'Emplo''.'12-204137', 'FirstName', ''Gender', 'Female', 'DOB', '21/06/1996', 'Department', 'Sates', 'JebTitle', 'Accountant II', 'I'd', 'Emplo''.'12-204137', 'FirstName', 'Chaete', 'Female', 'DOB', '21/06/1996', 'Department', 'Sates', 'JebTitle', 'Accountant II', 'I'd', 'Emplo''.'12-204137', 'FirstName', 'Chaete', 'Female', 'DOB', '21/06/1996', 'Department', 'Sates', 'JebTitle', 'Accountant II', 'I'd', 'Emplo''.'13-204137', 'Emplo''.'13-204137', 'First | | | | | | | | | | | | | | |
| Total fields identified : 9 Table Name tblEmployees Create Table Transform Function Transform Support JSON file contents: [ft:df:1;Emplo*:18-3703;59*/FirstName*:Collicate*/Title*:Mf*/Gender*:Female*/D08*:17/08/2000*/Department*:Training*:JobTitle*:Staff Accountant Shrink Expand (ft:df:1;Emplo*:18-3703;59*/FirstName*:Collicate*/Title*:Mf*/Gender*:Female*:D08*:17/08/2000*/Department*:Training*:JobTitle*:Staff Accountant USA (ft:df:1;Emplo*:18-3703;59*/FirstName*:Collicate*/Title*:Mf*/Gender*:Female*:D08*:17/08/2000*/Department*:Staff Shrink Expand View / Edit JSON (ft:df:1;Emplo*:18-3703;59*/FirstName*:Collicate*/Title*:Mf*/Gender*:Female*:D08*:21/087*/Department*:Staff View / Edit JSON View / Edit JSON | | | | | | | | | | | | | | |
| JSON file contents: 3 Jable Name Charling Under The Staff Accounts JSON file contents: (Initial Jable 2003) Charling Under The Staff Accounts (Initial Jable 2003) Charling Under The Staff Accounts Shrink Expand (Initial Jable 2003) Charling Under The Staff Accounts (Initial Jable 2003) Charling Under The Staff Accounts View / Edit JSON (Initial Jable 2003) Charling Under The Staff Accounts (Initial Jable 2003) Charling Under The Staff Accounts View / Edit JSON (Initial Jable 2003) Charling Under The Staff Accounts (Initial Jable 2003) Charling Under The Staff Accounts View / Edit JSON (Initial Jable 2003) Charling Under The Staff Accounts (Initial Jable 2004) (Initia | Total f | iolds ide | untified : | 0 Table Ne | - | LIC. | | Courte Table | Transform Eurotian To | | 801 T (| Tra | nsfor | |
| JSON file contents: [[1/d^11,1/Emp[0718-3703159]",firstName"10/ensystP", LastName"10/listet_"Title1*M1", Conder*1*Email=10081*07/02/1987", 2000", Department**Training", 2hbTtle1*StR Accountant Shrink: Egpand 0552172?, FirstName**Netron*_Title1*M1", Conder*1*Email=20081*07/02/1987", Department**Support*, 10051tle1*Ubarsian], [1/d*3, Emp10**07-132-0051297; FirstName**Netron*_Title1*M1", Conder*1*Email=10081*07/02/1987", Department**Sates*, 2hbTtle**Netron*_1*Conder=1*20081*07/02/1987", Department**Sates*, 2hbTtle**Netron*_1*Conder=1*20081*07/11/295*, Department**Sates*, 2hbTtle**Netron*_1*Conder**, 2hbTtle**Netron*_1*Conder=1*20081*07/11/295*, Department**Sates*, 2hbTtle**Netron*_1*Conder=1*20081*07/11/295*, Department**Sates*, 2hbTtle**Netron*_1*Conder**, 2hbTtle***, 2 | Totall | ielus lue | intineu . | 5 Table Na | ine [| orempioyees | • | | | ansionmemployees | | rm Data | 131011 | |
| Shrink Expand 052172**firstName**Merssa**LastName**Nerssa**LastName**Nersis**Title**Me***Gende***D08**07/02/1997**Department**Support**JobTitle**Librarian*]{1'd*3,*EmpID**12- 1902795*, firstName**Merssa**LastName***Gorell***Title**Me***Gende***D08**07/02/1997**Department**Support**JobTitle***Librarian*]{1'd*3,*EmpID**12- 1902795*, firstName***Gorell***Title***Me***Gorell****Me***D08***001***001***001**************** | JSON f | ile cont | ents: [| {"id":1,"EmpID":"1 | 8-3703159",' | 'FirstName":"Cl | hrystel","L | astName":"Dillicate","Title" | "Mr","Gender":"Female","DOB":"1 | 7/08/2000","Department" | "Training","JobTitl | e":"Staff Accounta | ant | |
| View / Edit JSON 1902/759", "FirstName", "ClassName", "Borrell", "Title", "Rev", "Gend ("ClassName", "Soles", "LossName", "Soles", "LossName", "Genzali, "Title", "Rev", "Gend ("ClassName", "Soles", "LossName", "Soles", "LossName", "ClassName", "ClassName, "ClassName", "ClassName, "ClassName", "ClassName, "ClassName", "ClassName, "Cl | | k Ex | nand | 652172","FirstNa | me":"Maress | a","LastName": | "Nestor"," | Title":"Mr","Gender "Femal | e","DOB":"07/02/1987","Departm | ent":"Support","JobTitle":"I | Librarian"},{"id":3,' | 'EmpID":"07- | | |
| View / Edit JSON 2804337", Firsthame" "Mellina", "Lasthame" "Chichio," "Title", "Dr." Gender "Termale", "DoB', "2004399", "Department", "Sales", "Jubitile", "Accountant 11", [1], "Life", Exeption "Lasthame", "Chicken, "Title", "Dr." Gender "Termale", "DoB', "2004399", "Department", "Sales", "Jubitile", "Accountant 11", [1], "Life", "Exeption "Lasthame", "Allen "Life", "Dr." Gender "Termale", "DoB', "2004397", "Firsthame", "Dischort, "Bales", "Dischort, "Dischort," Dischort, "Dischort, "Disc | | | 1 | 902795", "FirstNa | me":"Jens","L me":"Marion | astName":"Bor | rell","Title Sorchalk" | ":"Rev","Gender":"Male","DC | DB":"06/12/1952","Department":" | Sales","JobTitle":"Marketir | ng Assistant"},{"id": Health Coach I"\/"i | :4,"EmpID":"12- | | |
| View / Edit ISON 8178268"; FirstName": Auria "LastName": "Rycroft", "Title": "Dr", "Gender": "Female", "DO8:"26/11/1967"; "Department": "Research and Development", "JobTitle": "Director of Sales"], ("Id", "Emplo": "19-5073957"; FirstName": "Evelone", LastName": "LastName": "LastName: "LastName": "LastName": "LastName: "LastName": "LastName: "LastName": "LastName: "LastName": "LastName: "LastName": "LastName: LastName: "LastName: "LastName: "LastName: "LastName: LastName: | | | 2 | 804137","FirstNa | me":"Mellisa | ","LastName":" | Chiechio", | "Title":"Dr","Gender":"Fema | le","DOB":"21/06/1996","Departm | nent":"Sales","JobTitle":"Ac | countant II"},{"id": | 6,"EmpID":"12- | | |
| Face Wire of address is transmic receive i contour complete trace and include index of the state | Viev | v / Edit <u>J</u> | SON | 178268","FirstNai ales"} {"id"-7 "Emr | me":"Auria"," | 'LastName":"Ry 3957" "FirstNa | craft","Tit me" [,] "Eveli | e":"Dr","Gender":"Female"," ne" "LastName":"Lampe" "Ti- | DOB":"26/11/1967","Department" tle":"Ms" "Gender":"Female" "DOB | ":"Research and Developm ":"18/07/1984" "Departme | ent","JobTitle":"Dir ent":"Engineering" | ector of "IobTitle":"Einanc | ial | |
| | | | | and price of the | | , , matwa | | , | | , <i>07/1004 , 0</i> 0001000 | | | | |

5. File Analysis form

This is a very powerful form and can be divided into 5 main sections:

- A) Details of JSON file and reporting controls
- B) Summary of analysis procedure and analysis tools
- C) Analysis details
- D) Table creation and transform tools
- E) Navigation controls

a) Analyse existing files

When the form is first opened, file analysis will be done automatically. This will only take a couple of seconds unless the file is very large or complex.

Click **Run Analysis** to repeat the process e.g. if the file has been edited Click **Remove All** if you want to clear the existing analysis for any reason Click **Refresh Form** to update the display if you change the order of the fields listed

Click **View Hints** to view a summary of information about the file structure including any issues arising from the analysis or transform routines. Details can be edited here

| Hints for FileID 36 : ActivePeople.json | Close |
|---|-------|
| Complex data types deliberately used as test of analysis procedure e.g. colons (hyperlink, ipaddress6), time values plus memo fields & boolean values Simple array - straightforward to parse | |

The detail section shows the suggested field names, order, datatypes, sample data, sub-array and table info for the destination table(s).

| Order | PK Field | ? Suggested Field Name | Datatype | Size / Type | Include? | Sample Data | JSON Field | Sub-array | Level | Table Name | Table # |
|-------|--------------|------------------------|-----------|-------------|--------------|----------------------|------------|-----------|-------|--------------|---------|
| 1 | \checkmark | ID | Number | Integer | \checkmark | 1 | id | | | tblEmployees | 1 |
| 2 | | EmpID | Text | 50 | | 18-3703159 | EmplD | | | tblEmployees | 1 |
| 3 | | FirstName | Text | 50 | | Chrystel | FirstName | | | tblEmployees | 1 |
| 4 | | LastName | Text | 50 | | Dillicate | LastName | | | tblEmployees | 1 |
| 5 | | Title | Text | 50 | | Mr | Title | | | tblEmployees | 1 |
| 6 | | Gender | Text | 50 | | Female | Gender | | | tblEmployees | 1 |
| 7 | | DOB | Date/Time | Date | | 17/08/2000 | DOB | | | tblEmployees | 1 |
| 8 | | Department | Text | 50 | | Training | Department | | | tblEmployees | 1 |
| 9 | | JobTitle | Text | 50 | \checkmark | Staff Accountant III | JobTitle | | | tblEmployees | 1 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

The analyser will normally do this perfectly, but you should ALWAYS CHECK the details carefully.

Creating tables and transforming the data into normalised tables will be done based on the results of the file analysis. It is therefore **VERY IMPORTANT** to ensure this is correct.

NOTE: Field names will automatically be:

- capitalised and any spaces, underscores or special characters will be removed
- prefixed with the table or subarray name where the default name uses a reserved word in Access such as name/value/date e.g. in the **Statements** file, **Date** becomes **StatementDate**
- prefixed with the subarray name where duplicate fields exist in main array & subarrays

Edit the field names / datatypes / order if required:

- Modify the primary key field if the analyser didn't get this correct.
 The field order will automatically be updated to place the new primary key first in the list
 NOTE: composite primary key fields are NOT allowed
- Check the field size for text fields (1->255) and the Number field type (integer/long/double) If you get an error when transforming data, you may need to increase field size
- Untick the Include checkbox to exclude any unwanted fields
- Add new fields if necessary do NOT use spaces or 'special' characters in the field name In such cases, you may need to treat the file as a 'special case' – see below.

NOTE: Double click on sample data if it is too large to fit in the space available. A 'zoom' window will open showing the full sample data text. The sample data can be edited

Once you are happy with the results, click **Create New Table.** The new table will then open in **design view** as before. NOTE: In certain cases, it may be necessary to treat the file as a **special case**. This will allow you to overwrite the default analysis procedures for the specified file. Examples of special cases include: IdealPostcodes (9), GetAddress (10), Colours (16). Click the small button with a question mark to see details of special case code



NOTE:

If the **JSON** file contains **subarrays**, the analysis screen will suggest ways of splitting the data into 2 or more tables to ensure the tables are fully normalised. For example:

| Fi | ile A | 4na | lysis: | Cars.js | on | | | | Analysis Summary | Print Analy | sis | Return to <u>M</u> ain | Form | <u>Q</u> uit |
|----|-------------------------|-----------|-----------------------|---|---|---|--|---|---|--|---|---|---|--|
| F | ileID | : | 34 | File Name : | Cars.js | on | | | Valid JSON file? 🔽 | Special Ca | se? 🗌 | 0 | Difficulty Lev | el 3 |
| A | Arrays: | | | The JSON file I It is RECOMM Check the fina | has 3 sub-an ENDED that I column and | rays: the data is sav I if necessary | ved in 4 re-assig | model, colou tables: tblCars, tblC n fields to the correct | ır, price CarsModel, tblCarsColour, tblCa t table | arsPrice | | | View | Hints |
| F | ields 8 | k datat | ypes: | The suggested To EXCLUDE a You can also c | table struct ny field from hange the pi | ure is shown l the table des imary key (PK | oelow. F ign, und) field if | ield order, field name heck the INCLUDE ch needed. COMPOSITE | es & datatypes can be modified a eck box : primary keys are NOT allowed | is you wish. | | | Remo | ove <u>A</u> ll inalysis |
| P | NOTE : | | | Some complex | structures n | nay not be cor | rectly a | nalysed. ALWAYS CH | ECK the file yourself. | | | Analysis | OK? 🗹 | |
| | Order | PK Fiel | d? Sugges | ted Field Name | Datatype | Size / Type | Include | ? Sample Data | JSON Field | Sub-array | Array Leve | I Table Name | Т | able # |
| | 1 | \square | ID | | Number | Integer | \checkmark | 1 | id | | | tblCars | | 1 |
| | 2 | | Manufa | cturer | Text | 50 | | Oldsmobile | manufacturer | | | tblCars | | 1 |
| | 3 | | Year | | Number | Integer | | 2004 | year | | | tblCars | | 1 |
| | 4 | | Model | | Text | 50 | | Suburban | model | model | 1 | tblCarsModel | | 2 |
| | 5 | | Colour | | Text | 50 | \checkmark | Indigo | colour | colour | 1 | tblCarsColour | | 3 |
| | 6 | | Price | | Currency | | | £19892.77 | price | price | 1 | tblCarsPrice | | 4 |
| Т | īotal fi | elds id | entified : | 6 Table N | lame(s) + | blCars | | Create Tables | Transform Function: Transfo | rmCars | SQL | <u>Transform Data</u> | a Transform | m OK? 🗹 |
| 1 | SON fi Shrin View | le cont | ents: pand ISON | [("id":1,"manufat "]},{"id":2,"manu 92"]),("id":3,"ma anufacturer":"Pl Mercury","year": Series", "Equinox Cruiser", "Grand 7","Eldorado"],"c | cturer":"Oldsm facturer":"Chen nufacturer":"H ymouth", "year" 1987, "model": ", "Spirit"], "colo Cherokee"], "colo :colour":["Maub | obile", "year":20 rrolet", "year":19 yundai", "year":2 :1998, "model":[' "7 our":["Blue", "Vio lour":["Orange", "Gree | 04,"mode 97,"mode 002,"mod 'Accent",' et","Puce 'Green"," en","Teal" | "["Suburban","Prelude", !"["Acclaim","Accent","vC ell"["VB","GS","Aurora"]," VUE"],"colour":["Green"," "[],"price":["£20851.50","4 Crimson"],"price":["£1256],"price":["£16806.60","£1 | "Journey","300"],"colour","["Indigo","P yager","Astra", "colour", "Blue", "Teal colour", ["Teal", "Turquoise", "Orange"], Red", "Mauv", "Mauv"], price", ["E11432 E17146-59", "E18963.39", "E226.51"], Sa 111, "E2207.120", "E001.11", "E188 6475.57", "E6073.50", "E15995.65"], [" | uce","Teal"],"price ,"Goldenrod"],"pr ,"price":["£6136.8 5.98","£9169.87"," ,{"id":6,"manufact 59.10"]},{"id":7,"m id":8,"manufactur | ":["£19892. ice":["£206 8","£21653 '£18217.15' urer":"Acur anufacture er":"Nissan | 77","£22856.61"," 80.73","£18629.4 91","£6760.42","i ,"£17143.27"]},{"i a","year":1987,"m ":"Toyota","year" ';"year":2008,"mo | '£13477.84",'£8 4",'£5510.46",'; £20507.31"]},{"i id":5,"manufact odel":["Land :2006,"model":[Firebird", | 3896.61 £22938. d":4,"m urer":" "CX- "Precis" |
| | Navig | ation | | K (| 34 of 6 | 3 | M | Search Iten | n | ✓ R | ecord Co | unt 100 | View | [able |

From version 3.3 onwards, all tables are created automatically when you click Create New Tables.

The next step is to create a **transform function** which will **parse** the **JSON** file and **save** the data to the table you have created

Click the small **SQL** button to the right of the transform function name:

Transform Function: TransformEmployees

The transform function is then created using 2 template files.

The **transform function** is written specifically for the file being tested based on the above file analysis (from version 3.8 onwards).

This should take less than a second to complete. The new function then opens automatically.

A message like this will be shown indicating that it should be CHECKED before use



Public Function TransformEmployees() 'Colin Riddington - Mendip Data Systems - 12/09/2017 'TEMPLATE CODE for Transform JSON procedure 'MODIFY the code to match the structure of your JSON file 'When done, add explanatory comments here On Error GoTo Err_Handler 'get start time Start = Timer ReadJSON: 'Read .json file 'The next line works if Tristate = true (T). If it is false, replace -1 with 0 Set JsonTS = fso.OpenTextFile(strFilePath, ForReading, False, -1) strJSON = JsonTS.readall 'Remove unwanted characters - tab & line feed strJSON = Replace(Replace(Replace(strJSON, vbTab, ""), vbLf, ""), vbCr, "") 'Next line - removing space - should usually be omitted
' strJSON = Replace(strJSON, " ", "") JsonTS.Close ' Debug.Print strJSON ModifyJSON: 'add this section to enclose the whole JSON string if no overall group is supplied 'add this seample, overall group = "result"
If InStr(strJSON, "[") = 1 Then
'add dummy text to make parsing easier
strJSON = "{""result"":" & strJSON & "}"
' Debug.Print strJSON Debug.Print strJSON End If

Carefully **CHECK** the recordset section(s) used to import the parsed data. Whilst this **should** be correct, you should modify it if there are any issues

```
'write to table(s)
 Set db = CurrentDb
Set JSON = modJsonConverter.ParseJson(strJSON)
 'Build recordset for table(s) matching json fields to destination table fields
 'IMPORTANT - the fields are case sensitive - JSON fields are usually lower case
 'code for table 1 - tblCricketStats
 Set rst = db.OpenRecordset("tblCricketStats", dbOpenDynaset, dbSeeChanges)
With rst
    For Each result In JSON("result")
        .AddNew
         !uniqueID = result("unique id")
         !title = result("title")
        !description = result("description")
        .Update
     Next
     .Close
End With
Set rst = Nothing
```

IMPORTANT:

JSON field names are case sensitive and often are lower case

Make sure the details match for the:

- table field e.g. ContactName
- JSON field e.g. contactName
- Subarray names (where applicable)

When you are satisfied, return to the main form and click the **Transform** button.

The data will then be added to the table(s) created for this file.

By default, existing data will be overwritten though the function can be modified if appropriate. If successful, a message similar to this will be shown:

| View imp | ported records? | \times |
|----------|--|----------|
| ? | 100 new records were added to the table tblEmployees | |
| | Time taken = 1 second(s) Do you want to view these records now? | |
| | <u>Y</u> es <u>N</u> o | |

Click the **Yes** button to view the records added.

However if a problem occurs, you may see a message similar to this:

| No impo | rted data | X |
|---------|---|---|
| | New records were not added to the table tblCityBikes Click OK to enter details of the transform errors in a new form | |
| | OK Cancel | |

Continue to edit the Transform function as necessary until you get this working

If you want to **delete** the **transform function** so you can start again, **double click** on the **transform function** textbox

| Transform Function | TransformCityBikes | SQL | <u>T</u> ransform Data | Transform OK? |
|--------------------|--------------------|-----|------------------------|---------------|
| | | | | |

NOTE:

The process should be **fully automated** for most **JSON** files with no user intervention required. However, files with **3 or more levels of nested subarrays** cannot be done completely automatically

b) Add new JSON files

Click the **Add New** button and enter a description in the **Search Item** control. NOTE: You can use a **wizard** to guide you through the process if preferred

Default values for the file name & folder, table name and transform function are added automatically. You can alter these if necessary.

Enter the name of the **JSON** website and the **URL** if applicable.

| Search Item | Postcoder | 1 |
|--|--|----------|
| JSON Site | postcoder.com | |
| URL | http://ws.postcoder.com/pcw/PCW45-12345- 12345- 1234X/address/uk/NR147PZ?format=json&lines=4 | |
| File Name | Postcoder.json | <u>A</u> |
| ∗ Folder Path | G:\MyFiles\ExampleDatabases\JSON\JSONParser\Fi les | |
| * Table Name | tblPostcoder | |
| Transform function | TransformPostcoder | SQ |
| * REOUIRED item | 5 | |
| * REQUIRED item | 5 | |
| * REQUIRED item. | 5 | |

Click the Save button

NOTE:

If using an online **JSON** source, click the **Get** button to save the data to the specified **JSON** file. Otherwise, import the data to the file manually and click the **View** button.

| SON File I | mporter & Parser | | | | Print Summ | ary Admin | | Exit |
|-----------------------|--|-----|---|---|---|--|---|---------------------|
| ID | 35 | | JSON Output: | Shrink | Expand | Сору | | Go To End |
| Search Item | Postcoder | | {"addressline1 | ":"Allies Co | mputing Ltd","add | dressline2":"Manor Farm E | arns","addressline3 | ":"Fox |
| JSON Site | postcoder.com | | Road","address | line4":"Fra | ningham Pigot","s | ummaryline":"Allies Com | outing Ltd,Manor Far | m |
| URL | http://ws.postcoder.com/pcw/PCW45-12345- 12345- 1234X/address/uk/NR147PZ?format=json&lines=4 | ۲ | Barns,Fox Road Ltd","buildingna Road","depend Pigot","posttow | ,Framingha ame":"Man entlocality" m":"Norwic | m Pigot,Norwich,I or Farm Barns","pi :"Framingham h","county":"Norfo | vorfolk,NR14 7P2","organi remise":"Manor Farm Barr olk","postcode":"NR14 7P2 | isation":"Allies Comp is","street":"Fox !"},{"addressline1":"E | uting 3 2 B |
| File Name | Postcoder.json | # | Road"."address | ons Ltd","a line4":"Fra | ddressline2":"Mai ningham Pigot"."s | nor Farm Barns","addressi summaryline":"B 2 B Cashi | Ine3":"Fox flow Solutions Ltd.Ma | anor Farm |
| Folder Path | G:\MyFiles\ExampleDatabases\JSON\JSONParser\Fi les | | Barns,Fox Road Solutions Ltd"," Road","depende | ,Framingha buildingnar entlocality" | m Pigot,Norwich,I ne":"Manor Farm :"Framingham | Norfolk,NR14 7PZ","organi Barns","premise":"Manor | sation":"B 2 B Cashf Farm Barns","street" | low ':"Fox |
| Table Name | tblPostcoder | | Pigot","posttow | m":"Norwic | h","county":"Norfo | olk","postcode":"NR14 7PZ | "},{"addressline1":"E | Brasteds |
| Transform function | TransformPostcoder | SQL | Event Excellence Road", "address Barns, Fox Road | e", "addres line4": "Fra Framingha | sline2":"Manor Fa ningham Pigot","s m Pigot.Norwich.I | rm Barns","addressline3": :ummaryline":"Brasteds Ev Norfolk.NR14 7PZ"."organi | "Fox vent Excellence,Man isation":"Brasteds Ev | or Farm /ent |
| Tristate level | T T=true (unicode), F=false (ascii), M=mixed, D= system default | | Excellence","bu Road","depende | ildingname entlocality" | ":"Manor Farm Ba :"Framingham | irns", "premise": "Manor Fa | rm Barns","street":"I | Fox |
| Import Notes | JSON file saved 12/09/2017 01:08:14 | | Lodge", "addres Pigot", "addres | n":"Norwic sline2":"Ma vline":"Bra | n", "county": "Norro anor Farm Barns", steds Lodge.Man | addressline3":"Fox Road" "Fox Road" "Farm Barns.Fox Road.Fr | ;"},{"addressline1":"E ","addressline4":"Frai amingham | mingham |
| Other Comments | | | Pigot, Norwich, M Barns", "premise Pigot", "posttow Interiors Ltd", "a | Norfolk,NR1 e":"Manor I m":"Norwic ddressline line4":"Fra | 4 7PZ", "organisat Farm Barns", "stree h", "county": "Norfo 2": "Manor Farm B mingham Pigot" "s | ion":"Brasteds Lodge","bu et":"Fox Road","dependent olk","postcode":"NR14 7PZ arns","addressline3":"Fox :ummandine":"Conker Inte | ildingname":"Manor tlocality":"Framingha "},{"addressline1":"(priors 1td Manor Farm | Farm m Conker |
| Difficulty Level | 1 = easy; 5 = very complex | | Road, Framingh | am Pigot,N | prwich,Norfolk,NR | 14 7PZ", "organisation": "C | onker Interiors | r barns,rox |
| Completed | Ticked = data saved to Access table(s) | | Ltd","buildingna Road"."depende | ame":"Man entlocalitv" | or Farm Barns","pi :"Framingham | remise":"Manor Farm Barn | is","street":"Fox | |
| Record Count | 0 Number of records saved to table | | Total characters | in JSON fil | e: 11512 | Valid JSON File? | | Analyse JSON |
| Add New | Delete | | | | | | | |
| Navigation | N 4 34 of 34 > N | | Search Item | | [| V Table Tools | Empty Table | View Table |
| JSON File Tool: | Get View Transform | | External JSON To | ools j | SON to CSV | Excel Power Query | JSON Editor | Validate JSO |

The **JSON** data will be read and displayed on the form. This will be very fast (normally < 1 second).

Analyse the data to get a list of fields then create the **destination table fields** and the **transform function** as previously described.

6. Reports

Several reports are available from the application:

a) File Summary

Click the Print Summary button on the Main form

| ID Search Item | File Name | URL | Folder Path | Table Name | Transform Function | Level | Valid | Completed | Records |
|-----------------|-----------------------|---|---|-------------------|------------------------------|-------|-------|-----------|---------|
| 1 GeolP | GeoIP. json | https://ipapi.co/json | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblGeoIP | Transform GeoIP | 1 | Z | V | 1 |
| 2 Guardian | Guardian.json | https://content.guardianapi s.com/search?api- key=Off966b0-97fa-4f7b- 9db9-2fba895e85e1 | C:\Programs\MendipDa taSystems\JSON Parser\ Files | tblGuardian | TransformGuardian | 1 | N | V | 10 |
| 3 Animals | Animals. json | https://api.mockaroo.com/a pi/88643ad0?count=100&ke y=ef799ed0 | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblAnimals | Transform Animals | 1 | V | M | 100 |
| 4 Countries | Countries.json | https://api.mockaroo.com/a pi/27159fb0?count=200&ke y=ef799ed0 | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblCountries | Transform Countries | 1 | | M | 200 |
| 5 Films | Films.json | https://api.mockaroo.com/a pi/79de0140?count=200&ke y=ef799ed0 | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblFilms | TransformFilms | 1 | V | V | 200 |
| 6 Plants | Plants.json | https://api.mockaroo.com/a pi/cb94f370?count=100&ke y=ef799ed0 | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblPlants | T ransform Plants | 1 | V | M | 100 |
| 7 AddressSamp | e AddressSample.json | | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblAddressSample | Transform AddressSam ple | 1 | M | | 3 |
| 8 Contacts | Contacts.json | | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblContacts | Transform Contacts | 2 | | M | 91 |
| 9 IdealPostcode | s IdealPostcodes.json | https://api.ideal- postcodes.co.uk/v1/postcod es/ct921l?api_key=iddqd | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblidealPostcodes | Transform IdealPostco des | 2 | M | M | 27 |
| .0 GetAddress | GetAddress.json | https://api.getAddress.io/fin d/ct92II?api- key=bCznmRnnZkSLyifg-I- qcw9770&format=false&sor t=true | C:\Programs\MendipDa taSystems\JSONParser\ Files | tblGetAddress | T ransform GetAddress | 3 | | | 27 |
| 1 Postcoder | Postcoder.json | http://ws.postcoder.com/pc w/PCW45-12345-12345- 1234X/address/uk/NR147PZ ?format=json | C:\Programs\MendipDa taSystems\JSON Parser\ Files | tblPostcoder | Transform Postcoder | 1 | M | V | 28 |

b) File Analysis Details Click the **Print Analysis** button on the **Analysis** form

| | s : | | File contains 3 separate sub | arrays - model, | colour, price so data | needs to be sav | ed into 4 tables | | | | |
|----------|--------|-------------|---|---|--|--|--|------------------|-------------------|----------------|----------------|
| Arrays : | | | The JSON file has 3 sub-arra It is RECOMMENDED that th Check the final column and | ys: ie data is saved if necessary re-i | model, co in 4 tables: tblCars, assign fields to the co | lour, price tblCarsModel, rrect table | tblCarsColour, tblCa | rsPrice | | | |
| Fields & | dataty | ypes : | The suggested table structu To EXCLUDE any field from t You can also change the pri | re is shown belo he table design mary key (PK) fi | ow. Field names & da , uncheck the INCLUE eld if needed. COMPC | tatypes can be r DE check box DSITE primary ke | modified as you wish. eys are NOT allowed | | | | |
| NOTE : | | | Some complex structures m | ay not be corre | ctly analysed. ALWAY | S CHECK the fil | e yourself. | | | | |
| Order PK | (Field | Field Nam | e Datatype | Size / Type | Sample Data | Include | JSON Field | SubArray Name | SubArray Level | / Table Name | Table Numbe |
| 1 | ~ | ID | Number | Integer | 1 | | id | | | tblCars | 1 |
| 2 [| | Manufacture | r Text | 50 | Oldsmobile | V | manufacturer | | | tblCars | 1 |
| 3 [| | Year | Number | Integer | 2004 | M | year | | | tblCars | 1 |
| 4 [| | Model | Text | 50 | Suburban | | model | model | 1 | tblCarsModel | 2 |
| 5 [| | Colour | Text | 50 | Indigo | | colour | colour | 1 | tblCarsCo lour | 3 |
| 6 [| | Price | Currency | | £19892.77 | | price | price | 1 | tblCarsPrice | 4 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

c) File Analysis Summary

Click the Analysis Summary button on the Analysis form

| | | | | | Analysis Summary | | | | | | Transform Summary | | |
|----|----------------|---------|------------|---------|------------------|------|-------|-------|------------|-----|-------------------|-------|--------|
| ID | Search Item | Special | Date O | K? Erro | s T | ime | Table | Field | Date | OK? | Errors | Time | Record |
| | | Case | Completed | | Τα | aken | Count | Count | Completed | | | Taken | Count |
| 1 | GeoIP | | 06/11/2017 | Z | | 2 | 1 | 13 | 26/10/2017 | | | 1 | 1 |
| 2 | Guardian | | 06/11/2017 | Z | | 1 | 1 | 11 | 04/11/2017 | M | | 1 | 10 |
| 3 | Animals | | 06/11/2017 | Z | | 1 | 1 | 3 | 26/10/2017 | Ø | | 2 | 100 |
| 4 | Countries | | 05/11/2017 | Z | | 2 | 1 | 8 | 26/10/2017 | V | | 1 | 200 |
| 5 | Films | | 05/11/2017 | Z | | 1 | 1 | 7 | 26/10/2017 | V | | 3 | 200 |
| 6 | Plants | | 05/11/2017 | Z | | 1 | 1 | 4 | 26/10/2017 | V | | 2 | 100 |
| 7 | AddressSample | | 06/11/2017 | Z | | 1 | 1 | 5 | 26/10/2017 | M | | 1 | 3 |
| 8 | Contacts | | 06/11/2017 | Z | | 1 | 1 | 7 | 26/10/2017 | V | | 1 | 91 |
| 9 | IdealPostcodes | | 05/11/2017 | / | | 1 | 1 | 37 | 04/11/2017 | M | | 1 | 27 |
| 10 | GetAddress | M | 05/11/2017 | Z | | 1 | 1 | 6 | 04/11/2017 | V | | 1 | 27 |
| 11 | Postcoder | | 06/11/2017 | Z | | 1 | 1 | 14 | 06/11/2017 | V | | 1 | 28 |
| 12 | Products | | 05/11/2017 | Z | | 1 | 1 | 5 | 26/10/2017 | M | | 1 | 3 |
| 13 | Employees | | 05/11/2017 | 2 | | 2 | 1 | 9 | 26/10/2017 | V | | 6 | 100 |
| 14 | Drugs | | 05/11/2017 | Z | | 1 | 1 | 5 | 26/10/2017 | M | | 5 | 100 |
| 15 | Statement | | 08/11/2017 | 2 | | 1 | 1 | 5 | 08/11/2017 | | | 1 | 60 |
| 16 | Colours | | 05/11/2017 | Z | | 1 | 1 | 3 | 26/10/2017 | V | | 1 | 148 |

d) File Information

Click the **JSON File Info** button on the **Help** ribbon at the top of the screen

| ileID | Searchitem | File Hints | Special Case | Analysis OK | Table Count | Field Count | Transform OK | Record Count |
|-------|----------------|---|-----------------|----------------|----------------|----------------|-----------------|-----------------|
| 1 | GeoIP | Simple array - straightforward to parse | | V | 1 | 13 | V | 1 |
| 2 | Guardian | Simple array - straightforward to parse | | V | 1 | 11 | \checkmark | 10 |
| 3 | Animals | Simple array - straightforward to parse | | \checkmark | 1 | 3 | \checkmark | 100 |
| 4 | Countries | Simple array - straightforward to parse | | \checkmark | 1 | 8 | \checkmark | 200 |
| 5 | Films | Simple array - straightforward to parse | | \checkmark | 1 | 7 | \checkmark | 200 |
| 6 | Plants | Simple array - straightforward to parse | | \checkmark | 1 | 4 | \checkmark | 100 |
| 7 | AddressSample | Simple array - straightforward to parse | | \checkmark | 1 | 5 | \checkmark | 3 |
| 8 | Contacts | Simple array - straightforward to parse | | \checkmark | 1 | 7 | \checkmark | 91 |
| 9 | IdealPostcodes | This file is well structured and easy to parse as a single table. It has far more fields than are likely to be needed for address purposes Two derived fields have been added: address line & address block. For that reason, the file needs to be treated as a 'special case' Also lots of unnecessary fields have been excluded | Ŋ | V | 1 | 37 | V | 27 |
| 10 | GetAddress | This address file from an online provider is poorly structured with no field names The postcode used for the search isn't included in the file output! It is extracted from the web url and added along with a derived address block field. The file structure actually contains a subarray - addresses. However, it makes more sense to treat it as a single table containing all required fields For all the above reasons, the file needs to be treated as a special case for the transform function code | | | 1 | 6 | | 27 |
| 11 | Postcoder | Well structured address file Simple array - straightforward to parse | | V | 1 | 14 | V | 28 |
| | Droducto | Simple array - straightforward to parse | | | 1 | 5 | v | 3 |

7. Admin Menu form

This is used to run various admin tasks e.g. backup the database

| e this form | n to do common admin tasks | |
|-------------|---|--|
| ſ | Backup Database | Save a copy of this database to the backups folder |
| | Program Settings | View / edit program settings |
| | EMail Settings | View / edit settings used to send emails from the program |
| | Program Info | View information about the program |
| | Form Resizer | Used to resize forms if these have become over enlarged |
| | User Guide | View a user guide for this program |
| | View Start Form | View the start up form |
| | Empty All JSON Data Tables | Empties all tables based on imported JSON data |
| | Delete All JSON Data Tables | Delete all JSON data tables e.g. prior to version releasse |
| | Delete All Transform Functions | Deletes all transform functions e.g. prior to version release |
| | Delete All File Analysis Data | Deletes all JSON file analysis data |
| | Remove Data / Analysis Tables & Transform Functions | Clears all items prior to version release. Same as running above 3 buttons togethe |
| | Run Powershell | Runs a file script in Powershell (not available in this version) |
| | View Version Changes Summary | View a summary of changes to the program by version |

- **Backup database** saves a copy of the database to the **Backups** folder with the version number and the backup date/time e.g. JSONParser_v4.20_20171206184439.accdb
- **Program Settings** this contains various values used throughout the application NOTE: incorrectly set values may prevent the application working correctly

| Pr | ogram Settings | | Close |
|----|------------------------------|---|-------|
| ID | ItemName | ItemValue | |
| 1 | ProgramFolder | C:\Programs\MendipDataSystems\JATFA | |
| 2 | DefaultFilesFolder | C:\Programs\MendipDataSystems\JATFA\Files | |
| 3 | BackupFolder | C:\Programs\MendipDataSystems\JATFA\Backups | |
| 4 | VideosFolder | C:\Programs\MendipDataSystems\JATFA\Videos | |
| 5 | ImagesFolder | C:\Programs\MendipDataSystems\JATFA\Images | |
| 6 | HelpFolder | C:\Programs\MendipDataSystems\JATFA\Help | |
| 7 | StartFormStatus | Yes | |
| 8 | ShowNewJSONWizard | Yes | |
| 9 | UpdateFlag | No | |
| 10 | RegisteredUser | Colin Riddington | |
| 11 | UserCompany | Mendip Data Systems | |
| 12 | UserEMail | | |
| 13 | UserAddress | | |
| 14 | UserPhone | | |
| 15 | LicenceKey | | |
| 16 | SupportExpiryDate | | |
| 17 | WorkstationName | COLIN-PC | |
| 18 | WindowsVersion | Microsoft Windows 10 Pro 10.0.16299 32-bit | |
| 19 | AccessVersion | 2010 SP2 32-bit: Build 14.0.7162 | |
| 20 | ScreenResolution | 1680*1050 Widescreen | |
| 21 | EMailUseOutlook | | |
| СА | RE: Incorrect settings may p | revent this program working correctly | |

These items can be grouped as follows:

- 1-6 : set automatically relative to the application path **DO NOT ALTER**
- 7-8 : user preferences
- o 9 : used during version updates DO NOT ALTER
- 10-16 : user & licence info entered for this application
- o 17-20 : computer info (useful if you need to contact program support)
- \circ $\hfill 21-29$: settings used to send emails from the application

• Email Settings

If not already done, complete this form so that email can be sent direct from the application Send a test email to check this is working correctly.

| iviuli settili <u>ys</u> | | Close |
|--|--|---|
| Use this form to test settings used | to send emails from this program | |
| Use Outlook for Email | No | Clear EMail Settings |
| Settings: | NOTE: The items below are NOT required if Out | look is used to send email from the program |
| Send Mail Using Method | 2 🗸 | 1 = local; 2 = network |
| Port used to send email | 25 | Usually 25 |
| Email server | smtp.gmail.com | e.g. "smtp.gmail.com" |
| SMTP Authenticate | 1 ~ | Usually 1 |
| UserName | xyz@gmail.com | Default user email for email from this program |
| Password | ***** | Password for default user email |
| Timeout (seconds) | 60 | e.g. 60 |
| Use SSL | True | True / False |
| Fill in the details below then click t | the 'Send Email' button to try & send a test email mess | sage with an attached file. |
| Fill in the details below then click the Click the 'Save Settings' button if th Click the "Help" button for more ini Click the "Clear" button to remove Recipient email address Attachment filename (optional) | the 'Send Email' button to try & send a test email mess he email is sent successfully. formation if an error message is shown. test email data from this section. | sage with an attached file. |
| Fill in the details below then click the Click the 'Save Settings' button if th Click the "Help" button for more ini Click the "Clear" button to remove Recipient email address Attachment filename (optional) | the 'Send Email' buttons to try & send a test email mess he email is sent successfully. formation if an error message is shown. test email data from this section. This must be the full file path of the attachment | sage with an attached file. |
| Fill in the details below then click the Click the 'Save Settings' button if the Click the "Help" button for more ini Click the "Clear" button to remove Recipient email address Attachment filename (optional) | the 'Send Email' button to try & send a test email mess formation if an error message is shown. test email data from this section. This must be the full file path of the attachment Clear Test Email Data | Browse Save Settings |
| Fill in the details below then click the Click the 'Save Settings' button if th Click the "Help" button for more ini Click the "Clear" button to remove Recipient email address Attachment filename (optional) Send Email Default email addresses: | the 'Send Email' button to try & send a test email mess he email is sent successfully. formation if an error message is shown. test email data from this section. This must be the full file path of the attachment Clear Test Email Data The following are used by various features in the | sage with an attached file. Browse telp Save Settings program to send emails automatically |
| Fill in the details below then click the Click the 'Save Settings' button if th Click the "Help" button for more ini Click the "Clear" button to remove Recipient email address Attachment filename (optional) Send Email Default email addresses: Program Support EMail | the 'Send Email' button to try & send a test email mess he email is sent successfully. formation if an error message is shown. test email data from this section. This must be the full file path of the attachment Clear Test Email Data The following are used by various features in the support@mendipdatasystems.co.uk | sage with an attached file. Browse telp Save Settings e program to send emails automatically |

If errors occur, a message similar to this will be shown:

| EMail erro | r | × |
|------------|--|---|
| 8 | Sorry - I was unable to send the email message(s). Error # 3749 Fields update failed. For further information, examine the Status property of individual field objects. The Help file explains most common email error messages. Do you want to view the Help file now? | |
| | Yes No | |

Click the **Help** button for more information about the error

NOTE: Click Save Settings when done. Email settings are NOT saved automatically

• Program Info

Brief summary info for this version

| Pr | ogram Info | | Close |
|----|-------------------|---|-------|
| ID | ltemName | ItemValue | |
| 1 | ProgramName | JSON Parser | |
| 2 | Version | 4.10 | |
| 3 | VersionDate | 05/12/2017 | |
| 4 | SupportEmail | support@mendipdatasystems.co.uk | |
| 5 | ProgramWebsite | http://www.mendipdatasystems.co.uk/json-parser/4594050096 | |
| 6 | Author | Colin Riddington | |
| 7 | Company | Mendip Data Systems | |
| 8 | JSONParserAuthor | Tim Hall | |
| 9 | JSONParserWebsite | https://github.com/VBA-tools/VBA-JSON | |
| 10 | 64-bit compatible | Yes | |
| 11 | WebVersion | 4.05 | |
| | | | |

 Form Resizer – sometimes during development work forms can become 'over-enlarged'. This is unlikely to occur in normal program use However if necessary, use this tool to restore any affected forms to their correct size

| Form Un-Resizer | | Close |
|---|---|-------|
| Jse this when you need to restore a form to its original size for any reason. | | |
| f the form is over-enlarged, select the form then click the 'Shrink Form' button f this was done by mistake, click the 'Enlarge Form' button to reverse the proc | 255 | |
| ype a few letters to filter the form list and press the Return key: | Selected form: | |
| | Implementation Implementation Implementation Implementation | |
| Now select the form from the list: | Shrink Form Enlarge Form | |
| frmAdmin | | |
| frmAttachFile | | |
| frmDimmer | NOTE: | |
| frmEmailSettings | If the selected form contains subforms, you will need to repeat this process | |
| frmFormUnResizer | for each sub-form | |
| frmJSONAnalysisSummary | | |
| frmJSONFIleHint | | |
| frmJSONSampleDataZoom | | |
| frmJSONStructure | | |
| frmJSON Fransformsummary | | |
| frmiviain fee Maaaaa Case | | |
| frmWessageForm | | |
| fmProgramPetures | | |
| fmBrogramSattings | | |
| fmCondEmail | | |
| fmSelach | | |
| fmStart | | |
| fmUserInfo | | |
| fsubISONStructure | | |
| | | |
| | | |
| | | |
| | | |
| | | |

- User Guide Opens this document
- View Start Form See <u>page 1</u> for more information
- Empty All JSON Data Tables Use this to delete all records from the JSON data tables. The tables themselves are NOT deleted A backup is automatically done first
- Delete All JSON Data Tables Use this to delete all JSON data tables. A backup is automatically done first
- Delete All Transform Functions Use this to delete all transform functions for the data tables A backup is automatically done first
- Delete All File Analysis Data Use this to empty all data in JSON file analysis tables. A backup is automatically done first
- Remove JSON Data / Analysis Tables & Transform Functions Clears all items. Identical to running above 3 items together A backup is automatically done first
- Run Powershell
 Not available in this version
- View Version Changes Summary Summary of changes made in each version of the application

8. Help ribbon



The Help ribbon contains 7 items for quick access:

- User Guide opens this document
- JSON File Info summary info report for JSON files used with this application

| ileID | Searchitem | <i>Ale Hints</i> | Special Case | Analysis OK | Table Count | Field Count | Transform OK | Record Count |
|---------|------------------|--|-----------------|----------------|----------------|----------------|-----------------|-----------------|
| 13 | Employees | Simple array - straightforward to parse | | Z | 1 | 9 | V | 100 |
| 14 | Drugs | Simple array - straightforward to parse | | V | 1 | 5 | | 100 |
| 15 | Statement | Simple array - straightforward to parse | | | 1 | 5 | | 60 |
| 16 | Colours | Although the structure of this file is easy to visualise, by default it would be parsed into a "spreadsheet-type" form at of many fields each with one record. The transform function has been designed to modify the output into a normalised database structure with 2 fields colour & colour value. For that reach it is trated as a special case. | Ø | M | 1 | 3 | Ø | 148 |
| 17 | AwkwardString | This is a simple file deliberately designed to contain a wide variety of 'awkward' characters that could cause issues with parsing code. Although slightly slower than some other files, the file is transformed without difficulty. | | Y | 1 | 2 | N | 100 |
| 18 | Currencies | Although the structure of this file is easy to visualise, by default it would be parsed into a "spreadsheetkype" form at of many fields each with one record. The transform function has been designed to modify the output into a normalised database structure with 2 fields currency code & currency. For that reach it is trated as a special case. | Ð | V | 1 | 3 | | 168 |
| 19 | CurrencyExchange | Although the structure of this file is easy to visualize, by default it would be parsed into a "spread/sheet-type" format of many field sack with one record. The transform function has been designed to modify the output into a normalised database structure with 2 fields: currency & (exchange) ats. The base rate & data download date have been added to each record for clarity. | Ø | Z | 1 | 5 | Ø | 31 |
| | | For that reason it is treated as a special case | | | | | | |
| 20 | Geonames | Tranked as special cases o selected fields are automatically excluded - modify if all fields required Also, the first field in the file is Lng (Longitude) which could be used as the primary key field. However, it is more logical to use the Geoname D field as the PK field For that reason the order has been changed as part of special case code with Geonamic Detas 1.8 Ling as 2. | P | ¥ | 1 | 12 | Ð | 10 |
| 21 | Books | Simple array - straightforward structure | | Z | 1 | 9 | Ø | 100 |
| 6 Decen | nber 2017 | | | | | | P | age 2 of 8 |

• Check for Updates – checks for a newer version on the Mendip Data Systems website. If a newer version is available, you will see a message similar to this:



Click YES to download the latest version from the website

If you already have the latest version, a message like this will be shown:



- Email Support send an email to MDS customer support:
 - if you have any questions about using specific parts of the application
 - to report any bugs / errors you experience using the application
 - o to suggest improvements or additional features for a future version

If you are reporting a bug, please include the workstation info with the email as this may assist in providing a solution

| end EMa | nil to Customer Support | Send E-Mail Close |
|--|---|---|
| Use this form to s You may attach o | end an email to Customer Support ne or more files if required | |
| Send To: | support@mendipdatasystems.co.uk | |
| Сору То: | info@mendipdatasystems.co.uk | use a semicolon (;) between email addresses |
| Inter Subject: | JSON Parser Support Request from Colin Riddington | |
| Enter the message | e text below: | Include workstation info with email? |
| Computer Info: Norkstation = CO Nindows Version Access Version = Acceen Resolution | >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> | Â |
| Computer Info: Workstation = CC Windows Version Access Version = Screen Resolution | VIII-PC = Microsoft Windows 10 Pro 10.0.15063 32-bit 2010 SP2 32-bit: Build 14.0.7162 = 1680*1050 Widescreen | |
| Computer Info: Workstation = CC Windows Version Access Version = Screen Resolution | VIII-PC = Microsoft Windows 10 Pro 10.0.15063 32-bit 2010 SP2 32-bit: Build 14.0.7162 = 1680*1050 Widescreen | Ŷ |
| Computer Info: Workstation = CC Windows Version Access Version = Screen Resolution | VIIN-PC = Microsoft Windows 10 Pro 10.0.15063 32-bit 2010 SP2 32-bit Build 14.0.7162 = 1680*1050 Widescreen :) Remove Files | × |

- Backup database identical to the Admin menu item
- Program Settings identical to the Admin menu item
- Program Info identical to the Admin menu item

For more information on using JSON files with this application, see the Appendices:

- Appendix A : JSON File Structure
- Appendix B : Reading & Editing JSON files in this application
- Appendix C : Info about supplied JSON files
- Appendix D : More Files
- Appendix E : Possible Issues

The following are also useful sources of information: <u>https://en.wikipedia.org/wiki/JSON</u> <u>https://www.w3schools.com/js/js_json_intro.asp</u> <u>https://adobe.github.io/Spry/samples/data_region/JSONDataSetSample.html</u>

I hope you find this version of the **JSON Analyse & Transform for Access** application useful. All feedback on its use and suggestions for further development will be very welcome.

Colin Riddington Mendip Data Systems

Email:info@mendipdatasystems.co.ukWebsite:www.mendipdatasystems.co.uk

Appendix A - JSON File Structure

JSON (JavaScript Object Notation) is a syntax for storing and exchanging data. JSON files are text with file type '.json' and can be viewed in any text editor e.g. Notepad

JSON Syntax Rules

- Data is in name/value pairs separated by commas
- Curly braces hold objects, square brackets hold arrays. These are also in pairs
- Files MUST always start with a '{' or a '[' and end with a '}' or a ']'
- The number of '{' and '}' must match. Similarly for '[' and ']'

NOTE:

This application handles files enclosed in square brackets [] slightly differently to those enclosed in braces {} This is explained in <u>Appendix B</u>

A name/value pair consists of a field name (in double quotes), followed by a colon, followed by a value: For example: "name":"John"

Field names usually start with a lower case letter

Where combined words are used in field names, capitals or underscores may be used For example: "firstName": "John" or "first_name": "John"

Values must be one of the following data types:

• String / number / JSON object / array / Boolean / null

String values must be written with double quotes: "name": "John" *Number values* do NOT have quotes: "engineSize": 1495

To improve readability, JSON files may include 'whitespace' and additional square bracketing. The following examples are structurally identical:

```
{"employee": { "name":"John", "age":30, "city":"New York" } }
```

```
{"employee": [ { "name":"John", "age":30, "city":"New York" } ] }
```

```
{
"employee":
{
"name":"John",
"age":30,
"city":"New York"
}
}
```

```
{
"employee": [
{"name":"John",
"age":30,
"city":"New York"
}]
}
```

Arrays of values only have square brackets:

```
"manufacturer": [ "Ford", "BMW", "Fiat" ]
```

Nested JSON Objects

Values in a JSON object can be another JSON object.

```
{
    "name":"John",
    "age":30,
    "cars": [ {
        "car1":"Ford",
        "car2":"BMW",
        "car3":"Fiat"
        } ]
}
```

Nested Arrays in JSON Objects

Values in an array can also be another array ('subarray'), or even another JSON object:

```
{
    "name":"John",
    "age":30,
    "cars": [
        { "name":"Ford", "models":["Fiesta", "Focus", "Mustang" ] },
        { "name":"BMW", "models":["320", "X3", "X5" ] },
        { "name":"Fiat", "models":["500", "Panda" ] }
]
}
```

```
{
 "firstName": "John",
 "lastName": "Smith",
 "isAlive": true,
 "age": 25,
 "address": {
  "streetAddress": "21 2nd Street",
  "city": "New York",
  "state": "NY",
  "postalCode": "10021-3100"
 },
 "phoneNumbers": [
   "type": "home",
   "number": "212 555-1234"
  },
   "type": "office",
   "number": "646 555-4567"
        },
        {
         "type": "mobile",
         "number": "123 456-7890"
         }
         ],
         "children": [],
         "spouse": null
}
```

Appendix B – Reading & Editing JSON files in this application

Often JSON files may contain extraneous information that is not required when saving data

This application uses the following rules to determine which portions should be included:

- Where files are enclosed in square brackets, the ENTIRE file is read
- Where files are enclosed in curly braces, the portion to the left of the next square bracket or curly brace is discarded

In this example, the leading section is ignored: {"id":"0001","type":"donut","name":"Cake","image":

{"id":"0001","type":"donut","name":"Cake","image":["IFile":"images/0001.jpg","lwidth": 200,"lheight": 200],"thumbnail":["TFile":"images/thumbnails/0001.jpg","Twidth": 32,"Theight": 32]}

The file detects 6 fields and places the thumbnail data in a subarray.

| (| Order | PK Field? | Suggested Field Name | Datatype | Size / Type | Include? | Sample Data | JSON Field | Sub-array | Array Level | Table Name |
|---|-------|--------------|----------------------|-----------|-------------|--------------|----------------------------|------------|-----------|-------------|-----------------------|
| Γ | 1 | \checkmark | IFile | Hyperlink | | \checkmark | images/0001.jpg | IFile | | | tbllmageData |
| | 2 | | lwidth | Number | Integer | | 200 | lwidth | | | tbllmageData |
| Γ | 3 | | lheight | Number | Integer | \checkmark | 200 | lheight | | | tbllmageData |
| | 4 | | TFile | Hyperlink | | | images/thumbnails/0001.jpg | TFile | thumbnail | 1 | tbllmageDataThumbnail |
| | 5 | | Twidth | Number | Integer | \checkmark | 32 | Twidth | thumbnail | 1 | tbllmageDataThumbnail |
| | 6 | | Theight | Number | Integer | | 32 | Theight | thumbnail | 1 | tbllmageDataThumbnail |
| Е | | | | | | | | | | | |

However, if the file is enclosed in square brackets, the entire file is used:

[{"id":"0001","type":"donut","name":"Cake","image":["IFile":"images/0001.jpg","Iwidth": 200,"Iheight": 200],"thumbnail":["TFile":"images/thumbnails/0001.jpg","Twidth": 32,"Theight": 32]}]

The analyser now finds 9 fields with the 3 fields in the leading section treated as the top level array. The image and thumbnail data form 2 separate subarrays:

| Order | PK Field? | Suggested Field Name | Datatype | Size / Type | Include? | Sample Data | JSON Field | Sub-array | Array Level | Table Name |
|-------|--------------|----------------------|-----------|-------------|--------------|----------------------------|------------|-----------|-------------|-----------------------|
| 1 | \checkmark | ID | Number | Integer | \checkmark | 0001 | id | | | tbllmageData |
| 2 | | Туре | Text | 50 | \checkmark | donut | type | | | tbllmageData |
| 3 | | ImageDataName | Text | 50 | \checkmark | Cake | name | | | tbllmageData |
| 4 | | IFile | Hyperlink | | \checkmark | images/0001.jpg | IFile | image | 1 | tbllmageDatalmage |
| 5 | | lwidth | Number | Integer | \checkmark | 200 | lwidth | image | 1 | tbllmageDatalmage |
| 6 | | lheight | Number | Integer | \checkmark | 200 | lheight | image | 1 | tbllmageDatalmage |
| 7 | | TFile | Hyperlink | | \checkmark | images/thumbnails/0001.jpg | TFile | thumbnail | 1 | tbllmageDataThumbnail |
| 8 | | Twidth | Number | Integer | \checkmark | 32 | Twidth | thumbnail | 1 | tbllmageDataThumbnail |
| 9 | | Theight | Number | Integer | \checkmark | 32 | Theight | thumbnail | 1 | tbllmageDataThumbnail |
| | | | | | | | | | | |

When analysing your own files, try editing the file if necessary to help ensure the correct output:

- Add (or remove) square brackets at the start and end of the file
- Always enclose all subarrays with square brackets

JSON files normally use the Unicode character set (tristate = true) though some use ASCII (tristate = false). Both can be detected and read correctly by the parser.

| Tristate level | Т | T=true (unicode), F=false (ascii), M=mixed, D= system default |
|----------------|---|--|
|----------------|---|--|

IMPORTANT:

JSON files can be easily edited using applications such as **Notepad**. However, by default the file will be saved using the ANSI character set. This can cause problems in some cases. Using incorrect settings may add some unreadable characters at the start of the file and make it invalid.



To fix this, change the default to Unicode before saving the file

The character set encoding can be identified if you click File ... Save As

| / Save As | | | | | | | × |
|----------------|----------|---------------------------|----------------|--|-------------|----------|---|
| | « Pro | grams > MendipDataSystems | → JSONParser > | MoreFiles v | ි Search Mo | reFiles | Q |
| Organise 🔻 Ne | w folde | r | | | | | ? |
| 🔮 Documents | ^ | Name | | Date modified | Туре | Size | ^ |
| 👆 Downloads | | BookList.json | | 29/10/2017 23:49 | JSON File | 1 KB | |
| 👌 Music | | CityBikes.json | | 06/11/2017 23:28 | JSON File | 198 KB | |
| Pictures | | Clothing.json | | 07/11/2017 01:03 | JSON File | 7 KB | |
| Videos | - 64 | FamilyTree.json | | 10/11/2017 18:48 | JSON File | 2 KB | |
| 🐛 System (C:) | | 🧾 FootballResult.json | | 24/10/2017 02:05 | JSON File | 2 KB | |
| - Files (D:) | ~ | FootballScores.json | | 15/10/2017 16:29 | JSON File | 65 KB | ~ |
| File name: | Word | Menu.json | | | | | ~ |
| Save as type: | All File | s (*.*) | | | | | ~ |
| ∧ Hide Folders | | | Encoding: | ANSI | ~ Save | e Cancel | |
| | | | | ANSI Unicode Unicode big endian UTF-8 | | | |

Change the setting to **Unicode**.

Once this has been done once for a file, the **Unicode** character set will be retained when the file is saved again after any further editing.

Appendix C – JSON File Info

A summary of the JSON files supplied with this application is provided over the next few pages. The same information is available as a report from the **JSON File Info** button on the **Help** ribbon

| File | File | Special | File Hint | Table | Field | Record |
|------|--|---------|--|-------|-------|--------|
| 1 | GeoIP | No | Simple array - straightforward to parse | 1 | 13 | 1 |
| 2 | Guardian | No | Simple array - straightforward to parse | 1 | 11 | 10 |
| 3 | Animals | No | Simple array - straightforward to parse | 1 | 3 | 100 |
| 4 | Countries | No | Simple array - straightforward to parse | 1 | 8 | 200 |
| 5 | Films | No | Simple array - straightforward to parse | 1 | 7 | 200 |
| 6 | Plants | No | Simple array - straightforward to parse | 1 | 4 | 100 |
| 7 | AddressSample | No | Simple array - straightforward to parse | 1 | 5 | 3 |
| 8 | Contacts | No | Simple array - straightforward to parse | 1 | 7 | 91 |
| 9 | IdealPostcodes | Yes | This file is well structured and easy to parse as a single table. It has far more fields than are likely to be needed for address purposes Two derived fields have been added: address line & address block. For that reason, the file needs to be treated as a 'special case' Also lots of unnecessary fields have been excluded | 1 | 37 | 27 |
| 10 | GetAddress | Yes | This address file from an online provider is poorly structured with no field names The postcode used for the search isn't included in the file output! It is extracted from the web url and added along with a derived address block field. The file structure actually contains a subarray - addresses. However, it makes more sense to treat it as a single table containing all required fields. For all the above reasons, the file is treated as a special case for the transform function code | 1 | 6 | 27 |
| 11 | Postcoder | No | Well-structured address file | 1 | 14 | 28 |
| 12 | Products | No | Simple array - straightforward to parse | 1 | 5 | 3 |
| 13 | Employees | No | Simple array - straightforward to parse | 1 | 9 | 100 |
| 14 | Drugs | No | Simple array - straightforward to parse | 1 | 5 | 100 |
| 15 | Statement | No | Simple array - straightforward to parse | 1 | 5 | 60 |
| 16 | Colours | Yes | Although the structure of this file is easy to visualise, by default it would be parsed into a 'spreadsheet-type' format of many fields each with one record. The transform function has been designed to modify the output into a normalised database structure with 2 fields: colour & colour value. For that reason, it is treated as a special case | 1 | 3 | 148 |
| 17 | AwkwardString | No | This is a simple file deliberately designed to contain a wide variety of 'awkward' characters that could cause issues with parsing code. Although slightly slower than some other files, the file is transformed without difficulty. | 1 | 2 | 100 |
| 18 | Currencies | Yes | Although the structure of this file is easy to visualise, by default it would be parsed into a 'spreadsheet-type' format of many fields each with one record. The transform function has been designed to modify the output into a normalised database structure with 2 fields: currency code & currency. For that reason, it is treated as a special case | 1 | 3 | 168 |
| 19 | CurrencyExchange | Yes | Although the structure of this file is easy to visualise, by default it would be parsed into a 'spreadsheet-type' format of many fields each with one record. The transform function has been designed to modify the output into a normalised database structure with 2 fields: currency & (exchange) rate. The base rate & data download date have been added to each record for clarity. For that reason, it is treated as a special case | 1 | 5 | 31 |
| 20 | Geonames Yes Treated as special case so selected fields are automatically excluded - modify if all fields required. Also, the first field in the file is Lng (Longitude) which could be used as the primary key field. However, it is more logical to use the GeonameID field as the PK field. For that reason, the order has been changed as part of special case code with GeonameID set as 1 & Lng as 2 | | 1 | 12 | 10 | |
| 21 | Books | No | Simple array - straightforward structure | 1 | 9 | 100 |

| 22 | FootballClubs | No | Simple array - straightforward to parse | 1 | 4 | 20 |
|----|--------------------|-----|--|---|----|-----|
| 23 | Monarchs | Yes | Automated transform function completed 1//10/2017 Simple array - straightforward to parse Years MUST be text field as most values in form: 1132-1147 | 1 | 5 | 57 |
| | | | OPTIONAL: Treat as special case to automate renaming fields | | | |
| 24 | States | Yes | Simple array - straightforward to parse OPTIONAL: Treat as special case to automate renaming fields | 1 | 5 | 56 |
| 25 | Presidents | Yes | Simple array - straightforward to parse OPTIONAL: Treat as special case to automate renaming fields | 1 | 4 | 44 |
| 26 | Images | No | File with 1 subarray - tags so is transformed into 2 tables | 2 | 4 | 30 |
| 27 | Restaurants | No | Relatively simple array Small part of a MUCH larger dataset to speed up loading time Issues with field names fixed using code: - Special character \$ removed from field name \$oid | 1 | 9 | 26 |
| 28 | Students | No | File with 1 subarray - scores Straightforward to parse | 2 | 4 | 200 |
| 29 | TestJLeach | Yes | File supplied by Jack Leach @UtterAccess forum as a challenge Deceptively simple structure but deliberately complex to transform. Various unwanted characters need to be removed to do this successfully. For that reason, it is treated as a special case | 1 | 3 | 3 |
| 30 | People | No | File contains 2 subarrays so is transformed into 3 tables | 3 | 13 | 300 |
| 31 | MultiSquad | No | File contains 2 subarrays (members, powers) so is transformed into 3 tables Powers table is sub-sub array of members table Age has to be Long integer due to a value = 1,000,000 Detected correctly in analysis | 3 | 9 | 2 |
| 32 | ImportedCalls | Yes | File with many fields including some fields that could cause issues All listed fields in calls subarray so treated as 1 table Analysis correctly identifies 5 phone number fields starting with '+' as text (20) fields. Null 'sid' fields excluded to prevent error 3058 Treated as special case to automate this process Automated transform function then works correctly | 1 | 26 | 7 |
| 33 | Programs | No | Straightforward file with 1 subarray so data saved into 2 tables Different version values including 9.75; 3.5.6 could individually be read as numbers or dates but overall need to be text Analysis correctly detects this datatype | 2 | 5 | 200 |
| 34 | Cars | No | File contains 3 separate subarrays - model, colour, price so data needs to be saved into 4 tables | 4 | 6 | 100 |
| 35 | Vehicles | No | File contains 2 nested subarrays - model, colour so data needs to be saved into 3 normalised tables | 3 | 5 | 100 |
| 36 | ActivePeople | No | Complex data types deliberately used as test of analysis procedure e.g. colons (hyperlink, ipaddress6), time values plus memo fields & boolean values. Simple array - straightforward to parse | 1 | 20 | 30 |
| 37 | Spaceship | No | Relatively simple file with 1 subarray - cargo Cargo table is an array of values so split function used to parse | 2 | 4 | 10 |
| 38 | Retailers | No | This is a large file with many fields. File contains 1 subarray so is transformed into 2 tables | 2 | 15 | 239 |
| 39 | PhoneRecords | Yes | Shortened version of very large file originally from https://oresapp.asicanada.net/ores.imis.services/api/member The original file is huge - around 470K characters so took almost a minute to load fully. Shortened version used here so it loads faster Added missing [] brackets in Geocode subarrays File contains 2 subarrays so is transformed into 3 tables Duplicate ID field in members subarray is ignored. Special case to automate exclusion of 2 unwanted fields in members subarray | 3 | 24 | 13 |
| 40 | Generated | No | Complex array with 2 separate subarrays - tags, friends | 3 | 22 | 3 |
| 41 | Weather | No | Simplified JSON file with unnecessary subarrays removed. Straightforward to parse | 1 | 24 | 1 |
| 42 | Weather2 | No | Simplified version of file from www.wunderground.com Original file had lots of unnecessary subarrays which have been removed. File has huge number of fields that could probably be edited significantly | 1 | 60 | 1 |
| 43 | UKElection2015 | No | Converted from a CSV file. Very large file for all 650 constituencies so slow to load & analyse Simple array so straightforward to parse | 1 | 28 | 650 |
| 44 | UKElection2015Full | Yes | Converted from a CSV file. Subset of 30 constituencies from much larger file of all 650 constituencies. Treated as special case so file can be split into 2 tables: a) constituency info b) votes for each party | 2 | 17 | 30 |

| Image more than once. Edited JSON file to create unique field names & fix the issue Image and the straightforward to parse Image and the stra | 45 | Cake | No | File with 2 subarrays - batter, topping which was taken from: https://adobe.github.io/Spry/samples/data_region/JSONDataSetSample.html The original file used fields id & type in both subarrays. This meant the 2nd subarray was ignored as the parser cannot use the same field | 3 | 8 | 1 |
|--|----------------------------|--|-------------------------|--|-----------------|-----------------------------------|-------------------------------|
| 46 CricketStats Mo Simple array - straightforward to parse 1 1 3 9 47 Impections No File contains 3 top level arrays - batter, topping, filing 4 41 11 6 48 MoreCakes No File contains 3 top level arrays - batter, topping, filing 4 41 14 29 49 ForumPosts No Original file from stackoverflow forum 1 14 29 50 RGBColours No Original downloaded file could not be analysed as field names were not enclosed in 1 3 7 • c, cloour:"red", value: #ft00" Corrected file is simple array + straightforward to parse 2 6 4 51 Albums No File has 1 subarray now detected correctly by analyser 2 6 4 52 ProductOffer No Some fields missing ReferenceItems, sizes, options, fixed issue with fields in colors subarray 8 35 1 53 Shoes No Highy complex file with 7 nested subarrays: correctly handle identification of fields in level 2 subarrays 1 10 20 54 Postinfo | | | | name more than once. Edited JSON file to create unique field names & fix the issue | | | |
| 47 Inspections No Simple array - straightforward to parse 1 1 10 28 48 MoreCales No Original file from stackoverflow forum 1 11 14 29 49 ForumPosts No Original file from stackoverflow forum 1 14 29 50 RGBColours No Original downloaded file could not be analysed as field order automatically updates 1 3 7 51 Alburns No Original downloaded file could not be analysed as field names were not enclosed in in simple array & straightforward to parse 2 6 4 52 ProductOffer No Some fields missing & hyperink fields incorrect 8 4 17 1 53 Shoes No Highly complex fit with 7 nested subarrays: torel 1 - product, 1 8 3 6 1 54 Postinfo No File with 7 nested subarrays: corel 1 - product, 1 8 6 1 10 2 55 Houtinfo No File with 2 - subarrays: coret 3 - subarrays 3 6 1 10 2 56 B | 46 | CricketStats | No | Simple array - straightforward to parse | 1 | 3 | 9 |
| 48 More Eakes No File contains 3 top level arrays - batter, topping, filling 4 11 6 49 ForumPosts No Original file from stackwerflow forum 1 14 29 50 RGBColours No Original die forum stackwerflow forum 1 1 3 7 51 Albums No Original die downloaded file could not be anaryed as field names were not enclosed in 1 3 7 52 RGBColours No Original file from stages rate difficult on ow detected correctly by analyser 2 6 4 53 Albums No File has 1 subarray - now detected correctly by analyser 2 6 4 53 Shoes No Highly complex file with 7 nested subarrays: Level 1 - product, tevel 2 - colors, mages, related times, referenced times, sizes, politons. Fixed lissue with fields in colores subarray. Level 1 - colors, mages, related times, referenced times, sizes, options. Fixed lissue with fields in colores subarray: top softs & comments 3 6 1 10 200 54 Postinfo No Figure tradigit forward to parse 1 10 2 8 5 55 TitleipDesk </td <td>47</td> <td>Inspections</td> <td>No</td> <td>Simple array - straightforward to parse</td> <td>1</td> <td>10</td> <td>28</td> | 47 | Inspections | No | Simple array - straightforward to parse | 1 | 10 | 28 |
| 49 ForumPosts No Original life from stackoverflow forum 1 14 29 50 RGBColours No Original downloaded file could not be analyzed as field names were not enclosed in 1" e.g. (colour:"red",value:"#000") 1 33 7 51 Albums No Original downloaded file could not be analyzed as field names were not enclosed in 1" e.g. (colour:"red",value:"#000") 2 6 4 52 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shees No File has 1 subarray kraightforward to parse 4 17 1 54 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 55 Brosin No File with 7 nested subarrays: base stackownents 3 6 1 56 Brosin No Simple array - straightforward to parse 1 10 20 57 Carlist No Simple array - straightforward to parse 1 10 2 56 Brosin No Simple array - straightforward to parse 1 10 | 48 | MoreCakes | No | File contains 3 top level arrays - batter, topping, filling | 4 | 11 | 6 |
| Second | 49 | ForumPosts | No | Original file from stackoverflow forum | 1 | 14 | 29 |
| Removed unnecessary owner subarray & it now works Removed unnecessary owner subarray & it now works 50 R6BColours No Original downloaded file could not be analysed as field names were not enclosed in 1" # e, (colour: 'red', wile': W00') 1 3 7 51 Albums No File has 1 subarray 2 6 4 52 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shoes No File has 1 subarray ket with 7 nested subarrays: bet with 7 nested subarrays: bet subarray with fields in correct 1 product, Level 2 - colors, inages, relateditems, referenceditems, size, options. Fixed issue with fields in colors subarray 3 6 1 54 Postinfo No File with 7 nested subarrays: post & comments 3 6 1 55 THelpDesk No Simple array - straightforward to parse 1 10 200 56 Bitcoin No Simple array - straightforward to parse 1 10 2 57 Carlist No Simple array - straightforward to parse 1 14 2 | | | | Transform failed - primary key cannot contain a null value | | | |
| 50 RGBColours No Original downloaded file could not be analysed as field names were not enclosed in if e.g. (colour: red', value: "Hor0") 1 3 7 51 Albums No File has 1 subarray 2 6 4 52 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shoes No File has 1 subarray 2 66 4 54 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shoes No Highty complex file with 7 setted subarray: Level 1 – product, tevel 2 - colors, images, relateditems, referenceditems, sizes, options. Fixed issue with fields in close subarray wanalysis procedure modified to correctly handle identification of fields in level 2 subarray: Subarray: 3 6 1 10 200 54 Postinfo No File with 1 subarray: spats & comments 3 6 1 10 200 55 Bitcoin No Simple array - straightforward to parse 1 10 2 8 5 56 Bitcoin No Simple array - straightforward to parse 1 | | | | Removed unnecessary owner subarray & it now works Reset PK field as UserID in place of reputation - field order automatically updates | | | |
| set "" e.g. (colour."red", value."#007) Corrected file is simple array & straightforward to parse 2 6 51 Abums No File has 1 subarray Track length is time field - now deteted correctly by analyser 2 6 4 52 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shoes No Highy complex file with 7 nested subarray; Level 1 – product, Level 2 - colors, images, relateditems, referencedtems, sizes, options. Fixed issue with fields in colors subarray Analysis procedure modified to correctly handle identification of fields in level 2 subarray. 3 6 1 54 Postinfo No File with 2 nested subarray; posts & comments 3 6 1 55 THelpDesk No Simple array - straightforward to parse 1 10 200 56 Bitcoin No Simple array - straightforward to parse 1 10 2 57 Carlist No Original file audi is single array with no issues 1 14 2 58 Bitcoin No Simple array - no issues 1 9 | 50 | RGBColours | No | Original downloaded file could not be analysed as field names were not enclosed in | 1 | 3 | 7 |
| Corrected file is simple array. & straightforward to parse Corrected file is simple array. & straightforward to parse Corrected file is simple array. 51 Albums No File has 1 subme field - now detected correctly by analyser 2 6 4 52 ProductOffer No Some fields missing & hyperink fields incorrect 4 17 1 53 Shoes No Highly complex file with 7 nested subarrays: Level 1 – product, Level 2 - colors, images, relateditems, referenceditems, sizes, options. Fixed issue with fields in colors subarray analysis procedure modified to correctly handle identification of fields in level 2 subarrays: Subarray: Straightforward to parse 3 6 1 54 PostInfo No File with 2 nested subarrays: posts & comments 3 6 1 55 THelpDesk No Simple array - straightforward to parse 1 10 20 56 Bitcoin No Simple array - straightforward to parse 1 10 2 8 57 Carlist No File with 1 subarray - quality 2 8 5 56 Bitcoin No Simple array - straightforward to parse 1 10 | | | | "" e.g. {colour:"red",value:"#f00"} | | | |
| 51 Albums No File has 1 subarray 2 6 4 52 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shoes No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shoes No Highly complex file with 7 nested subarrays: Level 1 – product, Level 2 - colors, images, relateditems, referenceditems, stees, options. Fixed issue with fields in colors subarray analysis procedure modified to correctly handle identification of fields in level 2 - subarrays. Subarrays 3 6 1 54 Postinfo No File with 2 nested subarrays: posts & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse 1 10 200 65 Bitcoin No Simple array - straightforward to parse 1 10 2 8 5 55 Bitcoin No File with 1 subarray - quality 2 8 5 5 56 Bitcoin No Simple array - straightforward to analyse 1 14 2 57 Carlist No | | | | Corrected file is simple array & straightforward to parse | | | |
| Image: constraint of the set of | 51 | Albums | No | File has 1 subarray | 2 | 6 | 4 |
| 52 ProductOffer No Some fields missing & hyperlink fields incorrect 4 17 1 53 Shoes No Highly complex file with 7 nested subarrays: Level 1 – product, Level 2 - colors, images, relateditems, referenceditems, sizes, options. Fixed issue with fields in colors subarray 8 35 1 54 PostInfo No File with 2 nested subarrays: posts & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse not this file with the same data but different structures exist in the More Files folder: - ITHelpDesk3, ITHelpDesk4 10 200 56 Bitcoin No Simple array - straightforward to parse not file with 1 subarray - quality original file caused issue due to incorrect bracketing - now fixed 1 10 2 57 Carlist No Original file and incorrect bracketing and could not be analysed to might and the simple array - straightforward to analyse 1 14 2 58 FootballStats No Original file had incorrect bracketing and could not be analysed to might and the subarray - quality original file on hybra 1 field 's the might and table. Added 10 field to make this work properly. 1 19 31 61 Athletics No Simple array - straightforward to analyse t | | | | Track length is a time field - now detected correctly by analyser | | | |
| 53 Shoes No Highly complex file with 7 nested subarrays: Level 1 – product, Level 2 - colors, images, relateditems, referenceditems, sizes, options. Fixed issue with fields in colors subarray 8 35 1 54 PostInfo No File with 2 nested subarrays: posts & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse 1 10 200 56 Bitcoin No Simple array - straightforward to parse 1 10 200 56 Bitcoin No Simple array - straightforward to parse 1 10 2 57 CarList No Simple array - straightforward to parse 1 10 2 58 Bitcoin No Simple array - straightforward to parse 1 14 2 59 Bikes No Original file bad incorrect bracketing and could not be analysed 1 14 2 59 Bikes No Simple array - no issues 1 1 7 1587 61 Athietes No Simple array - to issues 1 7 1587 | 52 | ProductOffer | No | Some fields missing & hyperlink fields incorrect | 4 | 17 | 1 |
| Level 2 - colors, images, relateditems, sizes, options. Fixed issue with fields in colors subarray: Analysis procedure modified to correctly handle identification of fields in level 2 subarrays 4 54 Postinfo No File with 7 nested subarrays: posts & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse exist in the More Files folder: - THelpDesk2, ITHelpDesk3, ITHelpDesk4, ITHelpDesk4, Not all are so easy to parse lit is instructive to try these and compare the analysis results in each case. 1 10 2 55 Bitcoin No Simple array - straightforward to parse not all in a so easy to parse lit is instructive to try these and compare the analysis results in each case. 1 10 2 57 CarList No File with 1 subarray - quality Original file had in correct bracketing and could not be analysed Modified file is simple array with no issues 1 14 2 59 Bikes No Simple array - straightforward to analyse No 1 9 31 61 Athletes No Very large file so solve to load / analyse No 1 9 31 62 PostInfoLevel3 No Simple array - straightforward to analyse No 1 9 </td <td>53</td> <td>Shoes</td> <td>No</td> <td>Highly complex file with 7 nested subarrays: Level 1 – product,</td> <td>8</td> <td>35</td> <td>1</td> | 53 | Shoes | No | Highly complex file with 7 nested subarrays: Level 1 – product, | 8 | 35 | 1 |
| set with fields in colors subarray Analysis procedure modified to correctly handle identification of fields in level 2 subarrays: subarrays 54 Postinfo No File with 2 nested subarrays: posts & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse exist in the More Files folder: - ITHelpDesk3, ITHelpDesk4 1 10 200 56 Bitcoin No Simple array - straightforward to parse 1 10 2 57 Carlist No Simple array - straightforward to parse 1 10 2 58 FootballStats No Original file caused issues due to incorrect bracketing - now fixed 1 14 2 59 Bikes No Simple array - no issues 1 9 31 60 Athletes No Simple array - no issues 1 7 1587 61 Athletes No Simple array - no issues 1 7 1587 62 PostinfoLevel3 Yes File created with 3 nested levels of subarrays - posts (L1), comments (L2), feedback (L3) 4 9 2 63 <td></td> <td></td> <td></td> <td>Level 2 - colors, images, relatedItems, referencedItems, sizes, options. Fixed issue</td> <td></td> <td></td> <td></td> | | | | Level 2 - colors, images, relatedItems, referencedItems, sizes, options. Fixed issue | | | |
| SA PostInfo No File with 2 nested subarrays: posts & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse 1 10 200 56 Bitcoin No Simple array - straightforward to parse 1 10 200 56 Bitcoin No Simple array - straightforward to parse 1 10 2 56 Bitcoin No Simple array - straightforward to parse 1 10 2 57 CarList No File with 1 subarray - quality 2 8 5 57 CarList No Simple array - straightforward to parse 1 14 2 58 FootballStats No Original file had incorrect bracketing and could not be analysed 1 14 2 59 Bikes No Simple array - straightforward to analyse 1 7 1587 61 Athletes No Shortened version of large downloaded file with 1 subarray. 2 9 7 62 PostinfoLevel3 Yes File creasted with 3 nested levels of subarrays | | | | with fields in colors subarray | | | |
| Subarrays 3 6 SP Postinfo No File with 2 nested subarrays: posts & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse 1 10 200 NDTE: Three other versions of this file with the same data but different structures exist in the More Files folder: - ITHelpDesk3, ITHelpDesk3, ITHelpDesk4 1 10 2 56 Bitcoin No Simple array - straightforward to parse 1 10 2 57 CarList No File with 1 subarray - quality Original file caused issues due to incorrect bracketing - now fixed 1 14 2 58 FootballStats No Original file had incorrect bracketing and could not be analysed 1 14 2 59 Bikes No Simple array - straightforward to analyse 1 7 1587 61 Athletes No Simple array - straightforward to analyse 1 7 1587 61 Athletics No Simple array - no issues 1 9 31 62 PostinfoLevel3 Yes File created with 3 nested levels of subarrays - posts (11), commem | | | | Analysis procedure modified to correctly handle identification of fields in level 2 | | | |
| 3 Positinic No File with 2 hested subarrays; posits & comments 3 6 1 55 ITHelpDesk No Simple array - straightforward to parse exist in the More Files folder: - ITHelpDesk2, ITHelpDesk3, ITHelpDesk4, ITHelpDesk4, Not all are so easy to parsel it is instructive to try these and compare the analysis results in each case. 1 10 20 56 Bitcoin No Simple array - straightforward to parse original file caused issues due to incorrect bracketing - now fixed 1 10 2 8 5 58 FootballStats No File with 1 subarray - quality Original file caused issues due to incorrect bracketing - now fixed 1 14 2 59 Bikes No Simple array - no issues 1 9 31 60 Athletics No Simple array - no issues 1 9 31 61 Athletics No Simple array - no issues 1 9 7 62 PostinfoLevel3 Yes File created with 3 nested levels of subarrays - posts (L1), comments (L2), feedback (L3) This level of complexity can't yet be managed by the analyser: 1. Analysis doesn't detect all fields or level 3 array (response) correctly. 2 spurious fields detected (Iteres 10/1.1). Treated as special case to fina and bysis errors. | | De ethefe | N. | Subarrays | | | |
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| 1 | 62 63 64 65 | PostInfoLevel3 Chess Badeye Roads | Yes No Yes Yes | Reduced in size to speed up loading time. Original file only had 1 field 'Date' in main table. Added ID field to make this work properly. File created with 3 nested levels of subarrays - posts (L1), comments (L2), feedback (L3) This level of complexity can't yet be managed by the analyser: 1. Analysis doesn't detect all fields or level 3 array (responses) correctly. 2 spurious fields detected (items 10/11). Treated as special case to fix analysis errors. 2. However, after correcting analysis, also needed to: a) create final table (responses) manually b) modify code for populating final table Simple array - no issues File supplied by AWF user Badeye but with errors (now fixed) Contains 5 separate level 1 subarrays Treated as a special case to remove 1 spurious field and add another not detected File contains 1 unnecessary subarray: 'location'. Treated as capecial case so it can be 'flattened' into 1 table | 2 4 1 6 1 | 9 9 9 4 16 5 | 7 2 30 4 94 |
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Appendix D – More Files

Another 25+ files are also supplied in the **More Files** folder for anyone who wishes to try them.

Most of these have been looked at in depth, but not all

Some files have simple structures e.g. BookList / USZipCodes Others are very complex and / or will need to be treated as special cases e.g. FamilyTree / Clothing In certain cases, the file may be too complex for the parser to handle e.g. GoogleMapFIXED / Shares

Four of these files were invalid as supplied e.g. GoogleMap (original version), TumblrPhotos These are included as validation errors can often be fixed using online tools such as **JSON Lint** or **JSON Editor**

| File | Comments | Sub | Valid? |
|-----------------|---|---------|--------|
| | | Arrays? | |
| BookList | Straightforward file | Yes | Yes |
| CityBikes | Large file with 2 subarrays | Yes | Yes |
| Clothing | Multiple levels of nested subarrays and many repeated field names | Yes | Yes |
| ContactInfo | Simple file but with errors | Yes | No |
| FamilyTree | Badly structured with repeated use of same field names | Yes | Yes |
| FootballResult | 2 subarrays and repeated use of field names | Yes | Yes |
| FootballScores | Easy to read but very difficult to parse | Yes | Yes |
| GeoCoords | 2 nested levels of subarrays | Yes | Yes |
| | Contains 3 fields called type in main array & 2 different subarrays. | | |
| Glossary | Deceptively complex file with multiple nested subarrays | Yes | Yes |
| GoogleMap | Original file as supplied by Google is invalid !!! | Yes | No |
| GoogleMapFIXED | File fixed using JSONLint but still complex to handle. Multiple subarrays | Yes | Yes |
| ImageData | 2 separate subarrays & repeated field names | Yes | Yes |
| ITHelpDesk2/3/4 | Same data as ITHelpDesk file but in different formats of varying complexity | No | Yes |
| Playlist | Multiple subarrays | Yes | Yes |
| ProductGrid | Relatively straightforward file with subarrays | Yes | Yes |
| ProductList | Relatively straightforward file with subarrays | Yes | Yes |
| RoutePlan | Another Google file with multiple subarrays and complex to handle | Yes | Yes |
| Shares | Badly designed file. Difficult to parse | Yes | Yes |
| TrackInfo | Relatively straightforward file with subarrays | Yes | Yes |
| TumblrPhotos | Lengthy file with validation errors | Yes | No |
| USZipCodes | Huge file so will take ages to load but should be straightforward | Yes | Yes |
| Widget | Relatively simple file but with validation errors | Yes | No |
| WordMenu | File with 2 nested subarrays | Yes | Yes |
| YouTube | File with 2 nested subarrays | Yes | Yes |

Additional files may be provided from the website at a later date

There are numerous JSON files for a wide variety of topic areas available on the internet. Typing e.g. 'Shares JSON' into Google will give a long list of possible data sources These may be real live data or sample files

Unfortunately, many of the JSON files available online are either poorly structured or invalid. In many cases, validation errors can be fixed by this application or using the **JSON Lint** online utility.

However, if the file structure is poor, the file will be unusable

Many sites will require you to register to obtain an **API key** required to download real data. **API keys** are usually free but in certain cases you will have to purchase credits to download data.

You can also create your own JSON files using random data generator sites such as Mockaroo

Appendix E - Possible Issues

Like any complex application, issues may occur from time to time. The following explains some issues you may experience and possible solutions / work rounds:

| Issue | Solution / Work round |
|---|--|
| Subarrays enclosed in curly braces {} are not detected correctly | None at present. The JSON parser engine by Tim Hall can only handle subarrays enclosed in square brackets [] |
| Level 3 arrays are not correctly detected by analyser | The analyser currently handles 3 levels of subarray. A future update may allow deeper array levels At present, level 3 subarrays must be managed manually by |
| | treating as a special case |
| Subarray table code fails if an autonumber PK field from the main table is used as the foreign key in subsidiary tables | Use a different datatype for the main table PK field |
| The application doesn't automatically create subdatasheets or | Planned for a future version |
| relationships between main & subsidiary tables | For now, this must be done manually if required |
| I can't delete a table as its marked as in use | Select a different record using the navigation controls then return to the original record before deleting the table. |
| | In rare cases, you may need to close & reopen the app to release the table 'lock' |
| I get an error 'the database has crashed' after creating several new tables, closing then reopening the database | Repeatedly creating & deleting tables can cause database bloat and instability (especially if the JSON files contain errors) |
| | Decompiling the database followed by recompiling and compacting should fix this issue |
| | Also, regular backups should be made |
| I would like to view the JSON file in a tree view format | Planned for a future version |
| I need more guidance to make the best use of this application | A series of You Tube videos are in preparation. Links will be provided from the application website |
| | |
| | |

Please email <u>support@mendipdatasystems.co.uk</u> to alert us if you experience any other issues.