LAUNCH ALTAIR MONARCH COMPLETE

Monarch Complete provides two entry points for working with data:

- **Monarch Data Prep Studio** provides a fast and easy way to clean and prepare your data. It includes more than 80 pre-built functions designed specifically for data preparation. It even allows easy report discovery via automatic parsing and data extraction.

- **Monarch Classic** includes the full range of functionalities found in previous versions of Monarch, such as the capability to define advanced data extraction templates, table summaries, and advanced redaction.

To run Altair Monarch Data Prep Studio, go to **Start > All Programs > Altair Monarch 2023 > Monarch Data Prep Studio 2023**. The application displays the *Start Page*, with the Getting Started video automatically running.

To run Altair Monarch Classic, go to **Start > All Programs > Altair Monarch 2023 > Monarch Classic 2023**.

NOTE: Starting Monarch Complete usually brings you to Data Prep Studio. However, you can switch from one or the other at any time.

WORKING WITH DATA PREP STUDIO

1 ACQUIRE DATA

Click the **Open Data** button to select a file or connect to a data source. You can also load your data directly by dragging and dropping files into the *Start, Preview, Prepare, or Combine* windows.
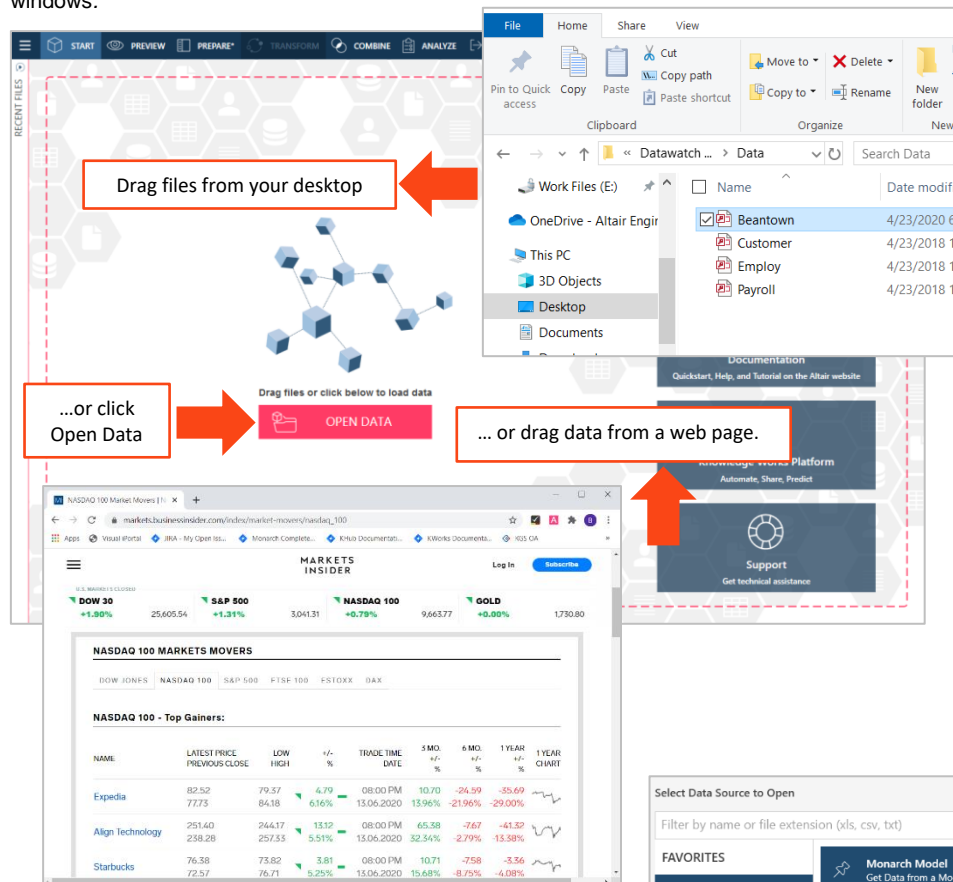
Altair Monarch Data Prep Studio was designed for ordinary people to do extraordinary things with data. After simply dropping a file onto the prep canvas, your data become instantly available in the form of rows and columns.

READ MORE
- Adding Data
- Working with Data Sources
- Working with Recent Data Sources

SPECIAL DATA SOURCE? NO PROBLEM.

Altair Data Prep Studio allows you to access almost all types of data, including databases, spreadsheets, and even multi-structured data trapped in existing report files, PDFs, web pages, log files, and much more.
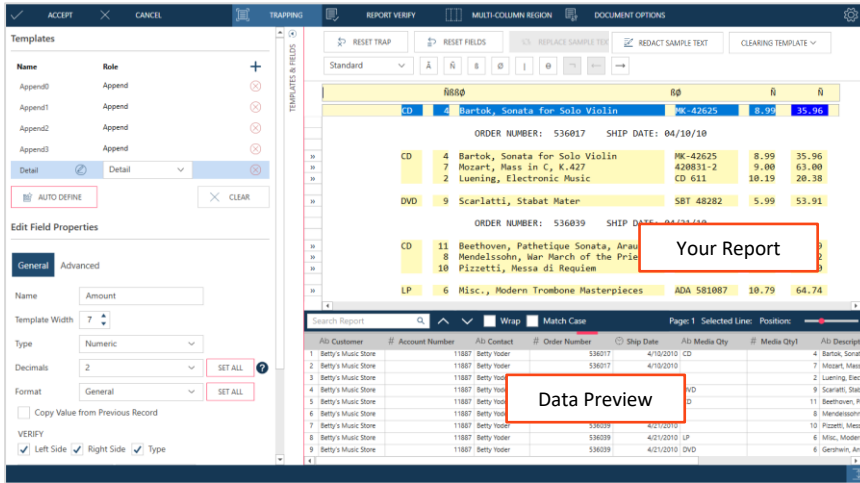
Use any out-of-the-box connectivity tools to connect to all major relational databases, Hadoop, NOSQL, Salesforce, and more.
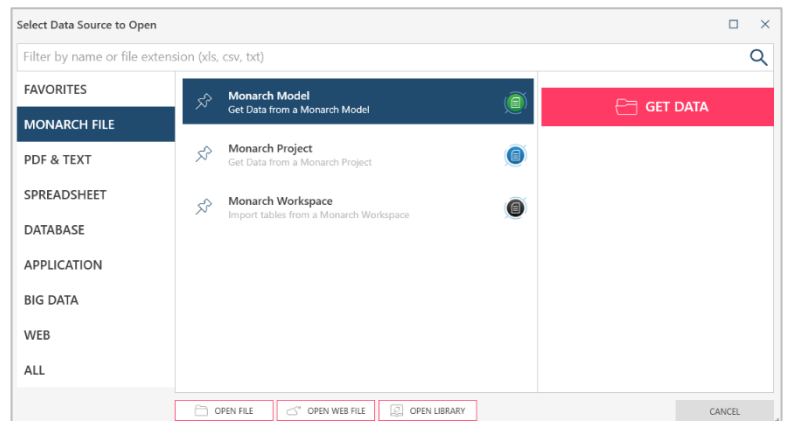
IS YOUR SOURCE IS A PDF OR PRN DOCUMENT? CREATE A MODEL FOR IT.

If your source is a document or report (e.g., PDF or PRN), you are brought to the Report Design window. Click the **Auto Define** button to automatically identify the columns and rows of your data source and build a table.

You can also directly trap the fields you want to include on the screen. Preview your table as it gets defined.
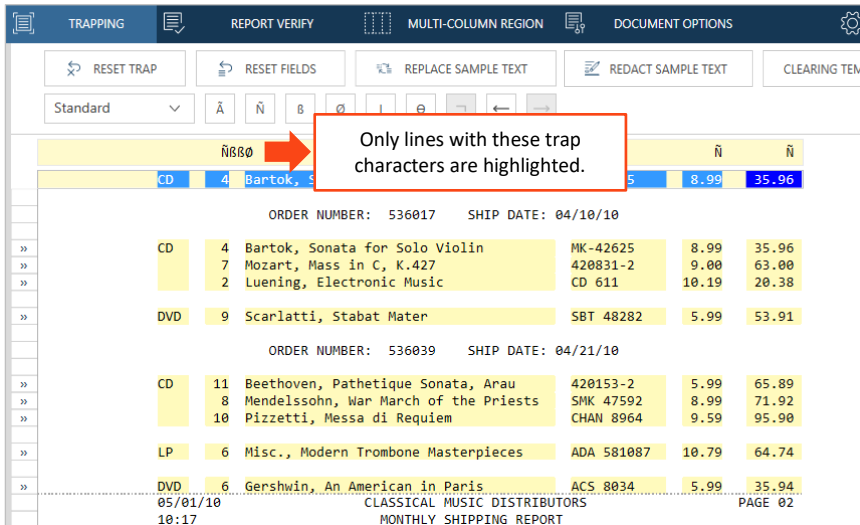
This extremely useful functionality is unique to Data Prep Studio. Now you can access the information trapped in reports in various formats, including PDF, JSON, TXT, and more!

The drag-and-drop feature and powerful Auto Define button of Data Prep Studio make this product different from others. These unique features allow you to automatically identify appropriate rows and columns of data or select only the data you need on screen. With the distinct features of Data Prep Studio, you no longer need scripting skills to prepare your data and access information trapped in PDF reports, log files, JSON, TXT, and more!

READ MORE
- Working with Report Design
- Creating Data Extraction Templates
- Working with PDF Files

WATCH
Altair Monarch Use Case | JSON

2 PREVIEW DATA

After a data source has been selected or a document has been prepared, you are brought to the *Preview* window.
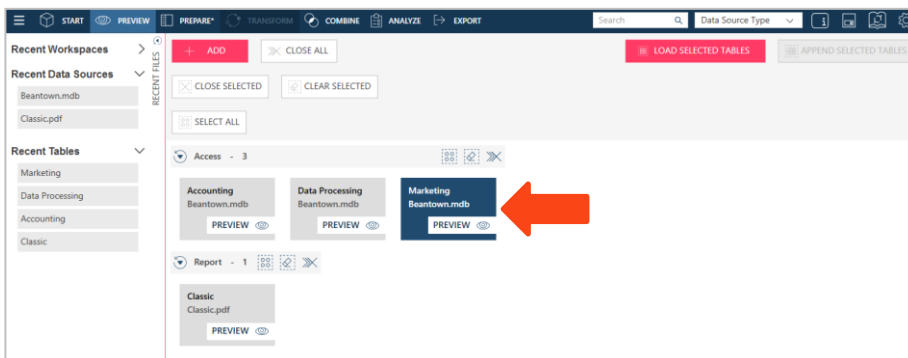
The Preview function allows you to review the information and check the quality of the data before loading these into the Altair Data Prep Studio workspace.

Quickly determine if:
- *your table has enough rows for you to work with,*
- *the column values are meaningful, or*
- *there are nulls or blanks.*

To preview the data found in a table you want to open, click the **PREVIEW** button below the table name.

3 LOAD SELECTED TABLES

From the *Preview* window, you can

- **Continue adding data to your workspace**. Click on the Add button found in the Preview and Prepare windows.

- **Load your data and perform actual preparation work**. Select the tables you want to work with and then click **Load Selected Tables.**

4 PREP YOUR DATA

START PREPARING DATA

All tables that are loaded, appended, or defined via the Report Design window are made available in the *Prepare* window. This window is where all prep and transformation operations are done.

From the *Prepare* window, select a table and then work with the columns to prepare them for visualization or analytics.

If your data source is in TXT or PDF format, you can include report metadata when you load your data.

Report metadata refer to information about a report, which includes the following:
- *Report File Number*
- *Report File Name*
- *Report Page Number*
- *Report Line Number*
- *Report Column Number*
- *PDF Producer*
- *Report Page Count*

Report metadata can help you analyze your data and preserve data lineage.
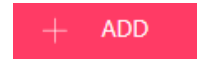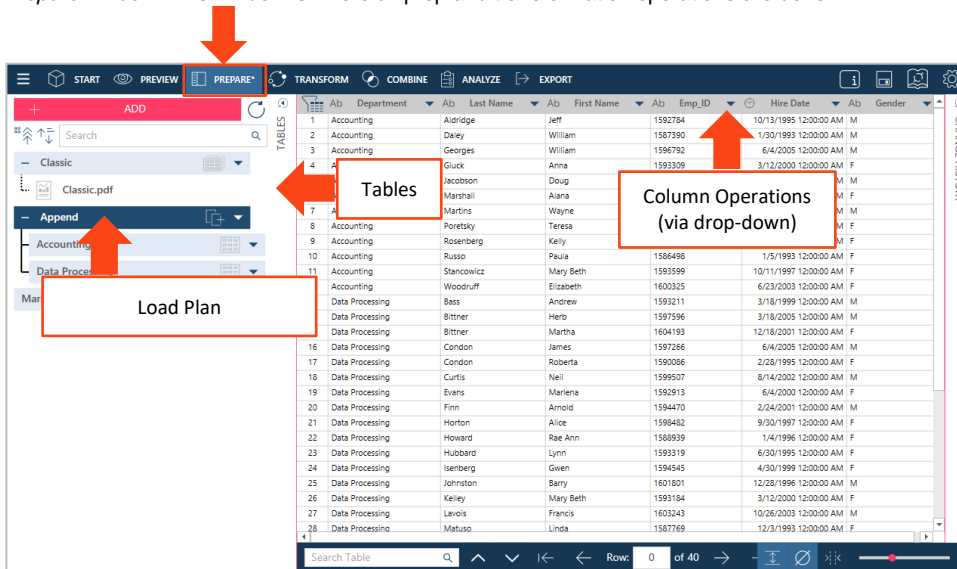
READ MORE
- [Previewing Data](#)

In the Preview window, you can:
- *show and review statistics*
- *edit columns (e.g., change name, format, and data type)*
- *move, rename, delete, hide, or copy columns*
- *sort and filter column values*
- *clean up the data (remove spaces, remove blanks or nulls)*
- *extract strings*
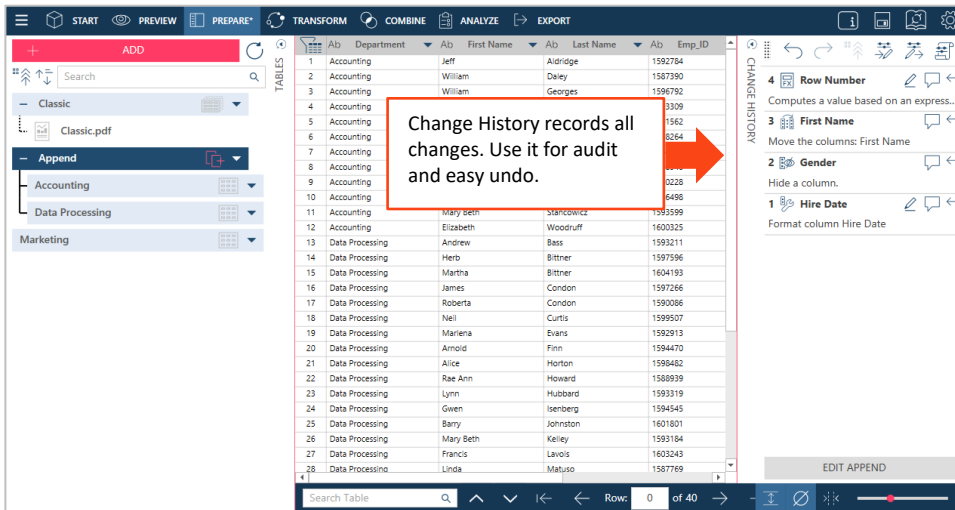- *replace values*
- *split or combine values*

Over 80 pre-built operations and functions are available to transform and manipulate data with mouse clicks. No scripting is needed!

READ MORE
- [Preparing Data](#)
- [Column Operations](#)

TRACK CHANGES SO YOU CAN REVERSE THEM OR APPLY TO OTHER TABLES

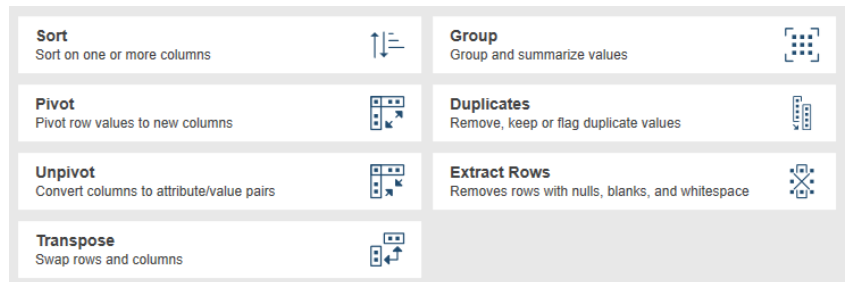Change History records all changes. Use it for audit and easy undo.

Monarch Data Prep Studio tracks all prep operations you carry out on a table and records these in a Change History. Use Change History to review and audit all operations. You can also use it to undo any operation(s) you have carried out.

TRANSFORM TO GET A DIFFERENT AND BETTER VIEW.

1. While in the Prepare window, click the **TRANSFORM** button and select a transform.

2. Do one of the following:

   - sort one or more columns
   - create summaries by grouping columns
   - determine and remove duplicate records
   - remove all empty rows
   - pivot/unpivot your table to get different summaries
   - transpose rows and columns
   - flag/remove duplicates

Sort Sort on one or more columns	**Group** Group and summarize values
Pivot Pivot row values to new columns	**Duplicates** Remove, keep or flag duplicate values
Unpivot Convert columns to attribute/value pairs	**Extract Rows** Removes rows with nulls, blanks, and whitespace
Transpose Swap rows and columns	

The Transform Data feature allows you to create new tables.

COMBINE AND CONSOLIDATE TO ENRICH YOUR DATA.

1. While in the Prepare window, click on the **COMBINE** button to display the Combine data stage.
2. Do one of the following:
   - Drag a table from the *Table List* panel to the *Drag a Table* box
   - Drop a table from a location on your machine (e.g., from your desktop or local/network drive) to the *Drag a Table* box.
3. Select a second table following the same procedure in Step 2.
4. Select **CLICK TO JOIN** to display the *Join Configuration* dialog.

Join disparate data in multiple ways, including left outer, right outer, full outer, and inner joins.

*The **Join Analysis** feature suggests the best way to join data by inspecting the data sets and applying powerful algorithms. You don't need to be a data scientist to do this.*

Monarch Data Prep Studio also supports fuzzy matching, with which you can match key values that are not 100% identical but are similar. For example, you can set fuzzy matching tolerance levels to match Connecticut *and* Conecticut *or* Smith *and* Smyth.

*If tables have an identical structure, you can easily append them to consolidate your data. The **Append Helper** is also available to append records even if they are not 100% identical.*

Select a join type here

Click on key icons to set columns as join keys.
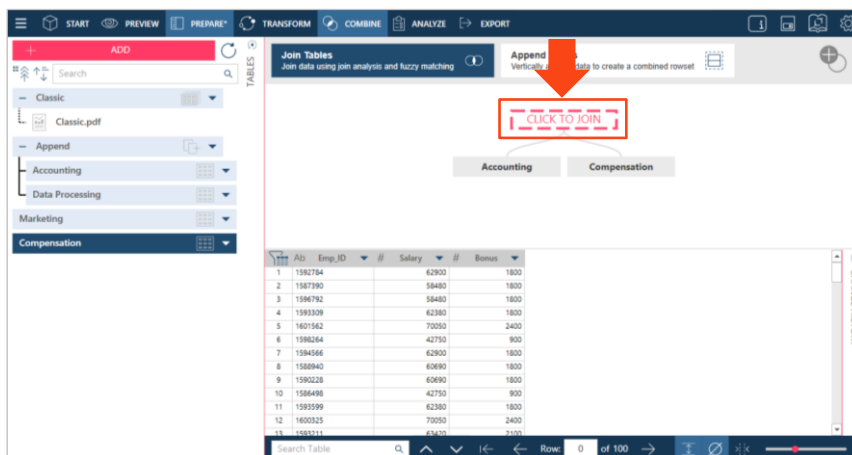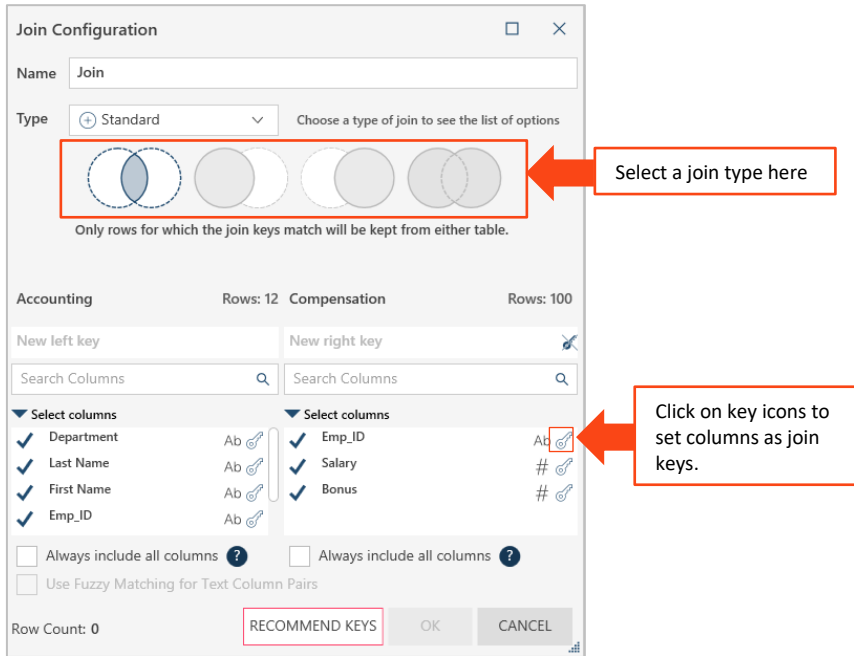
5. Select a join type and set join fields to complete the definition.
6. Continue to join tables as necessary. You can create multiple join sequences.
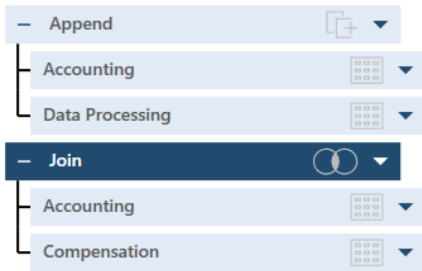
Load Plan Visualization provides you with a hierarchical view of all of the operations performed on a table. You can easily view, for instance, the tables that have been used to produce a join result.

READ MORE
- Joining Tables
- Using Fuzzy Joins
- Appending Tables

WATCH
Load Plan Visualization

5 CREATE SUMMARIES FOR DEEPER ANALYSIS

Summaries provide a broader view of your data.

A summary tabulates information for selected fields and presents the results in a one- or two-dimensional matrix, thereby allowing deeper analysis of your data.
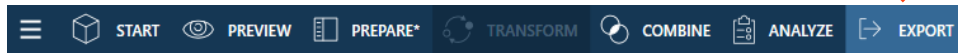
READ MORE
- Creating Summaries
- Exporting Summaries

Select the table for which you wish to create a summary and then click **Analyze**.
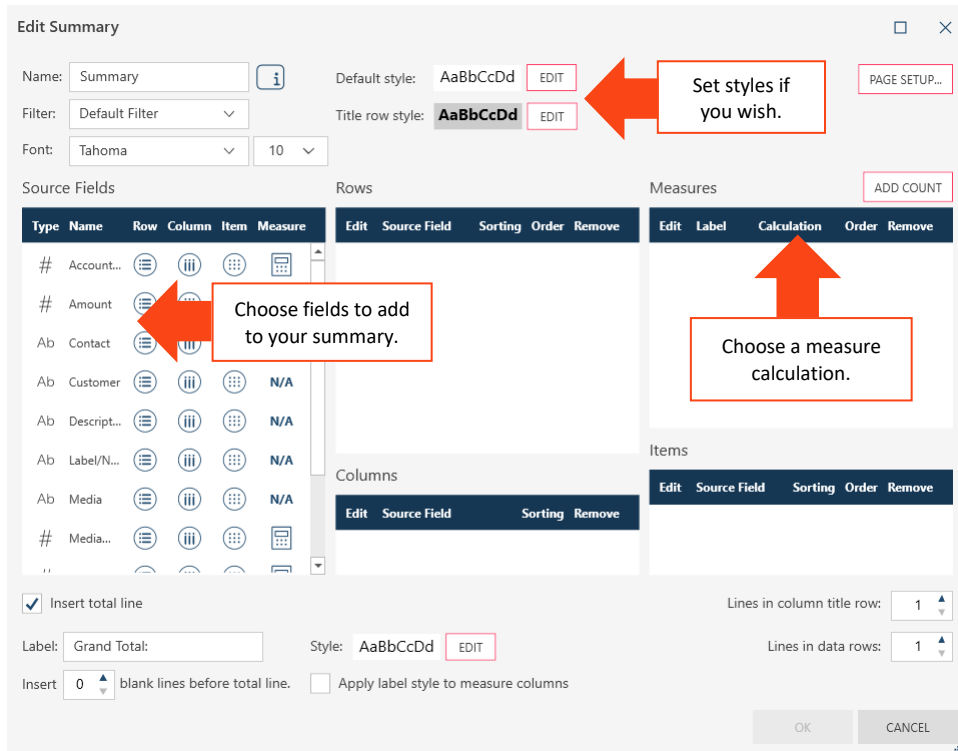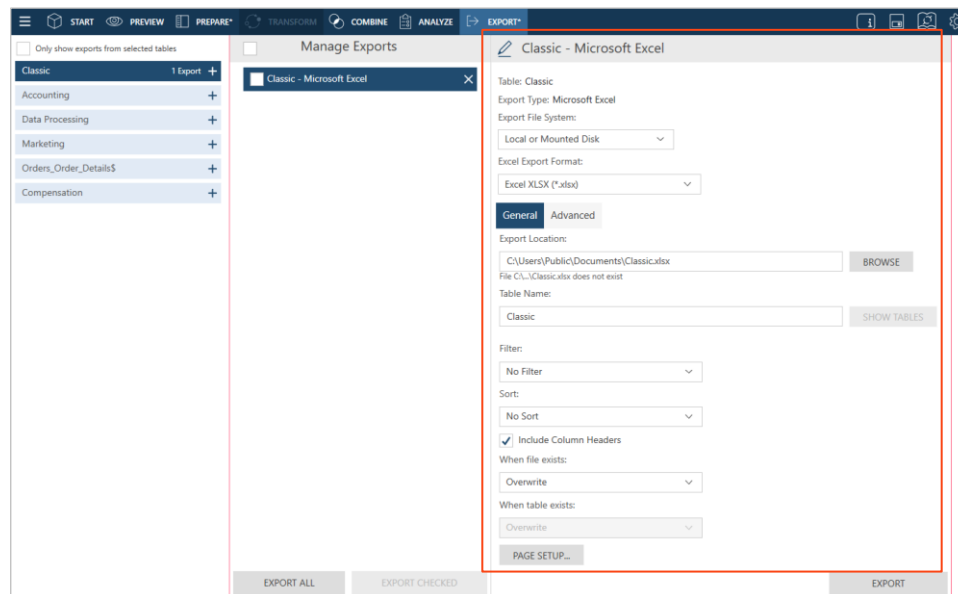

6 EXPORT

1. Go to the *Prepare* window.
2. Select the table you want to export.
3. Select **Export Data** from the Data Prep Studio toolbar.

4. Select an export format.
5. Specify the path and file names, define export options, and then click Export.

Once you're done preparing your data, you can easily export to many different formats, including Microsoft Power BI and IBM Cognos Analytics, and other Altair products, such as Altair Knowledge Hub, Altair Knowledge Studio, and Altair Panopticon.

READ MORE
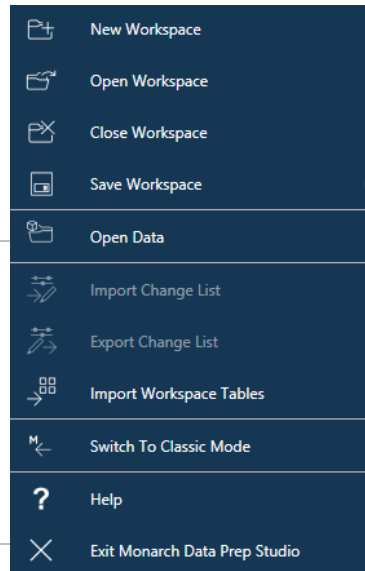- Exporting Data

Your prepped data are exported, ready to be fed into other applications.

*Summaries can only be exported to the CSV and Microsoft Excel formats.

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WORKING WITH MONARCH CLASSIC

From Data Prep Studio, you can switch to **Monarch Classic** at any time by selecting **Switch to Classic Mode** from the *Data Prep Studio* application menu.

## 1 OPEN A FILE

Go to **File > Open** to open a file.

Monarch Complete works with both relational and multi-structured data and provides support for a wide range of formats, such as PDF, XML, HTML, text, spool, and ASCII files. Access data from invoices, sales reports, balance sheets, customer lists, inventory, logs, and more.

The system is easy to use, allowing you to quickly select any data source and automatically convert it into structured data for analysis.

2 DEFINE DATA EXTRACTION TEMPLATES

After opening a report, Monarch Complete brings you to *Report View*. Switch to *Report Design* view to define *data extraction templates*.

Define traps like you do in *Data Prep Studio Advanced Mode*. When defining traps in *Classic Mode*, you have better control over trapping specific lines because the *Template Editor* allows you to define template levels to match your report hierarchy.
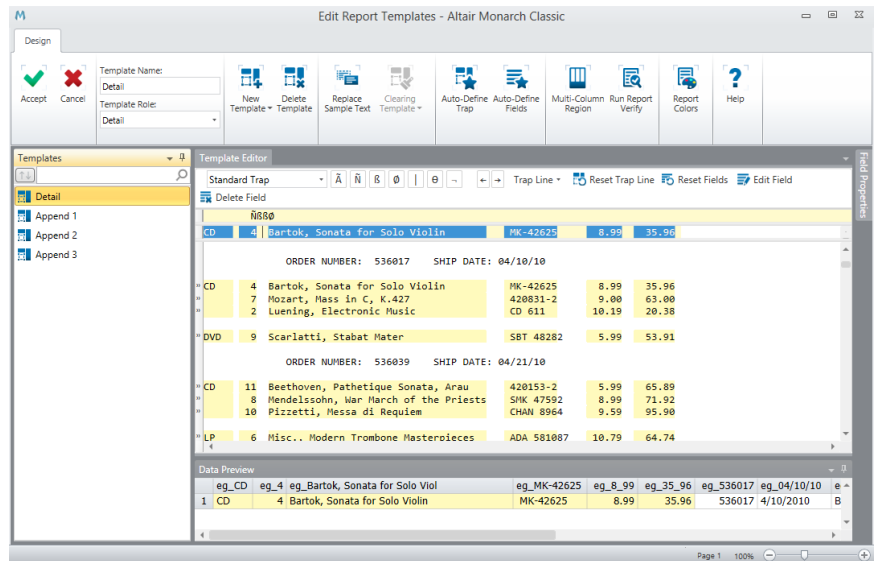
You can also use specialized trapping techniques, including the following:

- Floating traps

To trap data that do not have a constant position on the page. For instance, the date and time field in the report below do not have a fixed position.

```
ezvl-30ppp187.epix.net·-·-·[23/Aug/2010:01:13:43·-0400]·"GET·/images/find.gif·H
ezvl-30ppp187.epix.net·-·-·[23/Aug/2010:01:13:44·-0400]·"GET·/images/newdiscuss.
202.112.36.196·-·-·[23/Aug/2010:01:18:22·-0400]·"GET·/img/anim_thumbtack.gif·HT
ezvl-30ppp187.epix.net·-·-·[23/Aug/2010:01:13:45·-0400]·"GET·/images/spot.gif·H
ezvl-30ppp187.epix.net·-·-·[23/Aug/2010:01:14:14·-0400]·"GET·/search/index.html
AC855931.ipt.aol.com·-·-·[23/Aug/2010:01:14:45·-0400]·"GET·/express/search_1.htr
AC855931.ipt.aol.com·-·-·[23/Aug/2010:01:14:51·-0400]·"GET·/express/125x30_snpco
AC855931.ipt.aol.com·-·-·[23/Aug/2010:01:14:49·-0400]·"GET·/img/anim_thumbtack.g
202.112.36.196·-·-·[23/Aug/2010:01:18:22·-0400]·"GET·/img/anim_thumbtack.gif·HT
202.112.36.196·-·-·[23/Aug/2010:01:18:22·-0400]·"GET·/img/anim_thumbtack.gif·HT
```

- Multi-column regions

To trap and extract data from reports with multiple, adjacent columns of data on each page.

```
PACHELBEL, J.          1 MOZART, W.A         31 WEELKES, T.
GRIEG, E.              2 GERSHWIN, G.         32 GINASTERA, A.
HOLST, G.             3 CHOPIN, F.           33 BRIDGE, F.
ORFF, C.              4 MUSSORGSKY, M.       34 BYRD, W.
SCHUMANN, R.          5 RACHMANINOV, S.      35 SWEELINCK, J.P
LISZT, F.             6 BRIAN, H.            36 MACHAUT, G.d
BACH, J.S             7 SOR, F.              37 LUZZASCHI, L.
PAGANINI, N.          8 RHEINBERGER, J.G     38 DES PREZ, J.
HANDEL, G.F           9 ANGELO, G.           39 BIBER, H.I
BERLIOZ, H.          10 ENESCO, G.           40 BRITTEN, B.
SAINT-SAENS, C.      11 MOMPOU, F.           41 DAVIES, P.M
SHOSTAKOVICH, D.     12 ISAAC, H.            42 RAVEL, M.
RIMSKY-KORSAKOV, N.  13 HINDEMITH, P.        43 ADAMS, J.
BEETHOVEN, L.v       14 SOLER, P.A           44 JANEQUIN, C.
BERNSTEIN, L.        15 CARULLI, F.          45 RAMEAU, J.P
TCHAIKOVSKY, P.I     16 SCELSI, G.           46 VERDI, G.
WAGNER, R.           17 SESSIONS, R.         47 BOCCHERINI, L.
BRAHMS, J.           18 PENDERECKI, K.       48 JOPLIN, S.
```

- Regular expression traps

To trap data using regular expressions.
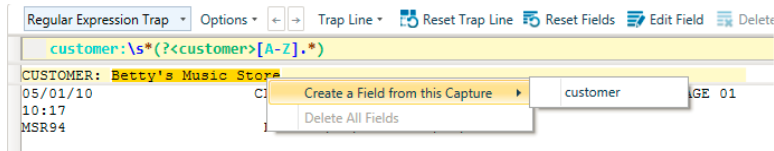
You can even use the **Redaction Feature** to replace, or mask out, field values so that only a representation of the field value is displayed and not the actual value.
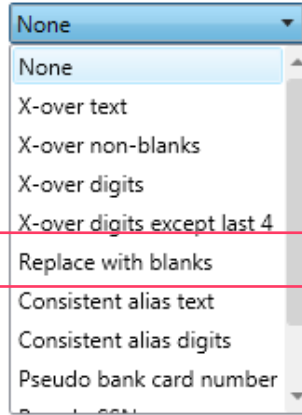
For example, a credit card number like **1345-8716-4432-7892**

in the original report

can be displayed as

XXXX-XXXX-XXXX-77892.

Monarch Complete's advanced redaction capabilities allow you to easily and reliably remove or obscure confidential data, such as customer information, medical records, and employee IDs.
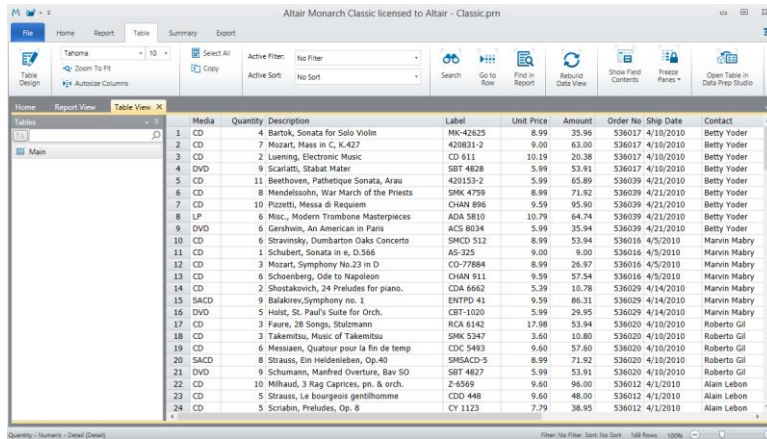

Easily and reliably remove or obscure confidential data, such as customer information, medical records, and employee IDs, with Monarch Complete's intuitive redaction capabilities. This feature allows you to safely distribute reports to partners and customers, even in heavily regulated industries, such as healthcare and financial services, without compromising customer and employee privacy.

READ MORE
- Creating Data Extraction Templates
- Redacting Field Values

This feature allows you to safely distribute reports to partners and customers, even in heavily regulated industries, such as healthcare and financial services, without compromising customer and employee privacy.

3 TRANSFORM YOUR DATA IN TABLE VIEW

Table View displays fields extracted from a report or imported from a database.


Just select your new data source, set linking columns, and you're all set.

Define as many lookups as you need to consolidate information and enrich your view.

You can go to *Table Design* and select **External Lookups** to combine your data with information from other sources.

Within *Table Design*, you can also select
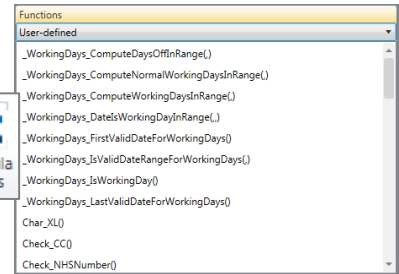
Formula Fields to derive values from existing fields.

Monarch Complete has more than 80 pre-built functions that speed up the transformation of your data into consistent, clean analysis-ready information.

Monarch Classic's *Field List* view allows you to easily keep track of fields. You can set the field alignment, hide fields, or even change the data type.

All changes carried out here are automatically cascaded to all summaries that use the table.
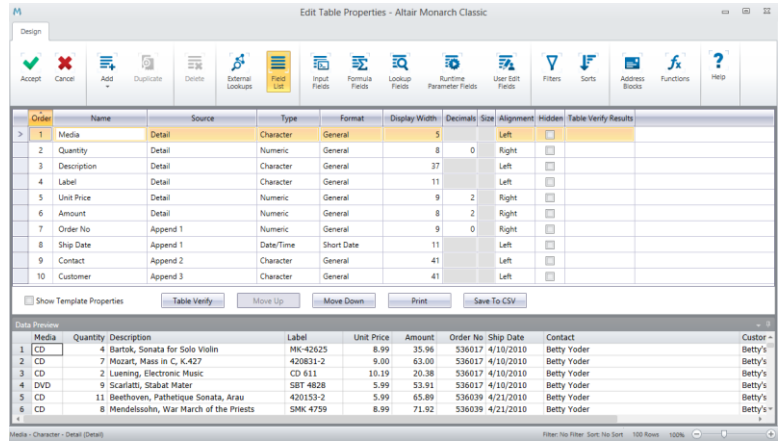
4 CREATE SUMMARIES

A *summary* tabulates information on selected fields and presents the results in a one- or two-dimensional matrix. Monarch Complete provides options that let you sort the summary, add subtotals, and format your summary report for easier viewing.

In *Summary View*, you can even drill-up or drill-down to focus on specific totals.

You can create different summaries using the same data to get different views of the information.

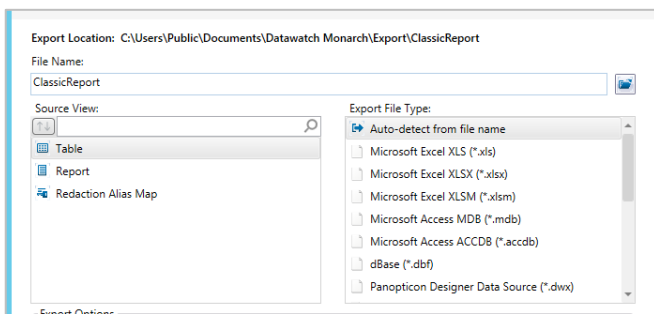**READ MORE**
- Summary View
- Summary Design

5 EXPORT YOUR DATA

Go to *Export Design* to create and run exports. You can export your report, table, or your summaries (you can export one or all summary levels).

You can export to Excel, Access, DBF, or delimited text.

If you have *Altair Panopticon Designer*, you can export your data to a Panopticon Designer data source for easy visualization.

6 SAVE AND REUSE

Once saved, models and projects can be re-used each time a new version of your report or data become available. Just load the new files and then run your exports again to produce fresh versions of your output.

■ NEXT STEPS

- Use Monarch Complete's comprehensive documentation to help you prep your data. The Help and Learning Guide files are installed with the product and are available online at https://help.altair.com/monarch/current.

- Explore how self-service data prep and visual discovery can bridge the IT and business gap. Visit the Altair website or call Altair for more details.