

MIS 5208 – L5 ACL: Working with Expressions

Audit Command Language Fundamentals

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Working with Expressions

- Expressions are statements used primarily to create filters and computed fields.
- They perform:
 - Calculations,
 - Specify logical conditions,
 - Create values that do not exist in the data file.
- Expressions can be:
 - Named and saved as part of a project or else created just for immediate use.
- The output of an expression can be returned in any of the four data types: logical, character, numeric, and datetime.

ACL for Windows

The screenshot shows the ACL Launchpad interface. At the top, there is a dark blue header with the 'acl' logo and user profile icons. Below the header, a dropdown menu shows 'Vandelay Industries - Training (US)'. The main content area is divided into several sections:

- Recent Analytics Files:** A list of files with their names, types, and opening dates:
 - script_syntax_working.acl** (Analytic Project) - Opened 6 days ago
 - ACL_Cypress_PCards.acl** (Analytic Project) - Opened 7 days ago
 - TNE.ACL** (Analytic Project) - Opened 2 months ago
 - P2P Audit Answer Scripts.acl** (Analytic Project) - Opened 15 days ago
 - MatchStandardize.ACL** (Analytic Project) - Opened 16 days ago
 - gc_dragon_disk.acl** (Analytic Project) - Opened 16 days ago
- Sample Files:** A list of sample files:
 - ACL_Cypress_PCards.acl** (Analytic Project)
- Open:** Buttons for 'Analytic Project', 'Analysis App', and 'GRC Project'.
- Create:** Buttons for 'Analytic Project' and 'Workflow'.
- ACL Community:** Text stating 'Connect, share, and learn with 80,000+ passionate ACL users.' and a 'Join the community' button.

- **Profile and Help** - View or update your user profile, sign out of ACL Launchpad, or view online Help.
- **Organization selector** - Switch between accounts (organizations) you have access to using this drop-down list.
- **Recent Analytics Files** - Open recently accessed ACL projects or analysis apps.
- **Sample Files** - Open pre-built ACL projects that include a variety of sample data.
- **Open** - Open an existing ACL project, analysis app, or GRC project.
- **Create** - Create a new Analytic Project or Workflow in Results Manager for organizing, tracking, and remediation of exceptions.
- **Community** - Ask questions, share product ideas, contact support and access templates, content, training and other resources as part of your ACL subscription.

Interface and Basic Navigation

1. Main menu

2. Navigator

3. Status bar

4. Command line

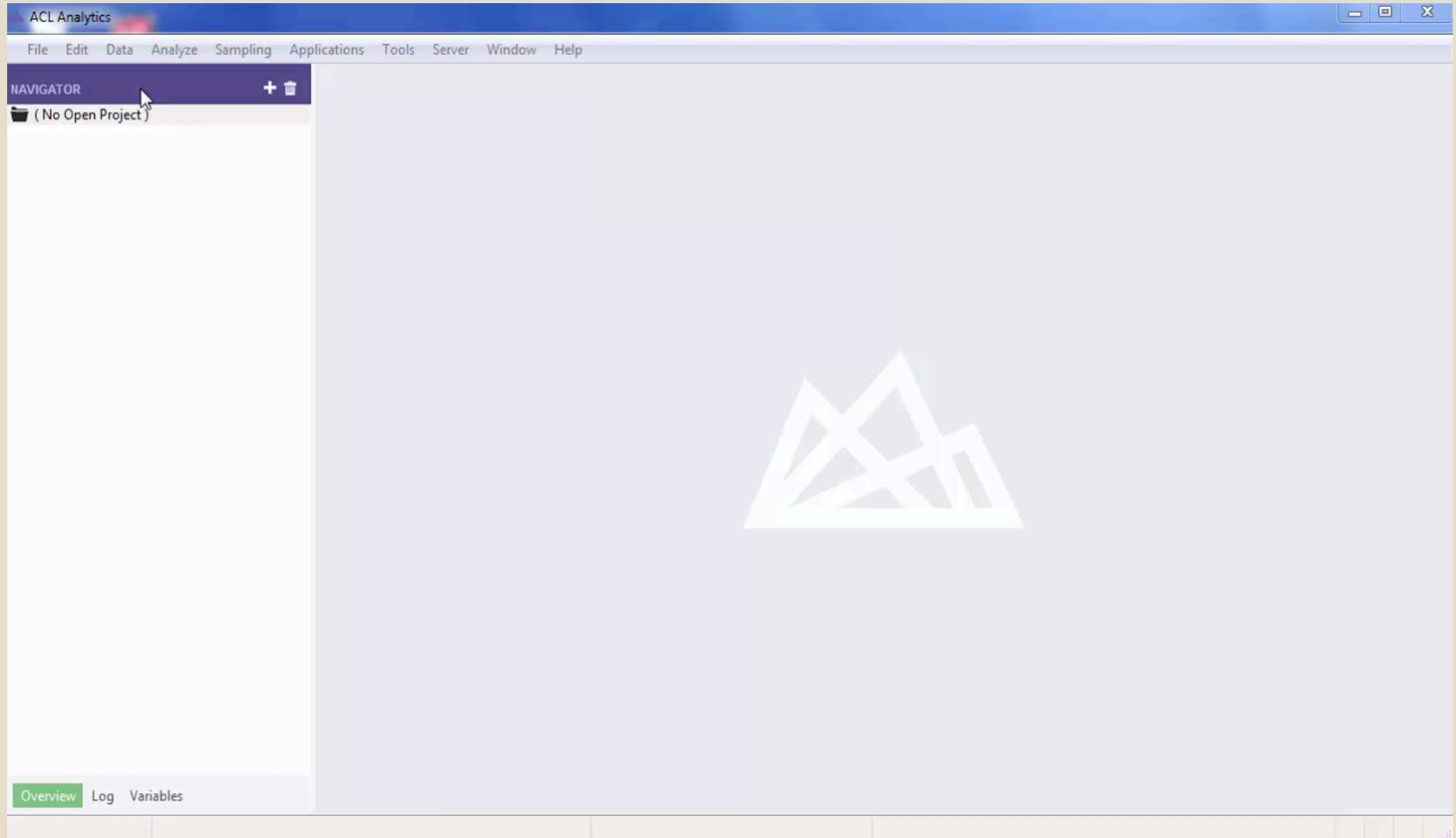
5. Filter text box

6. View area

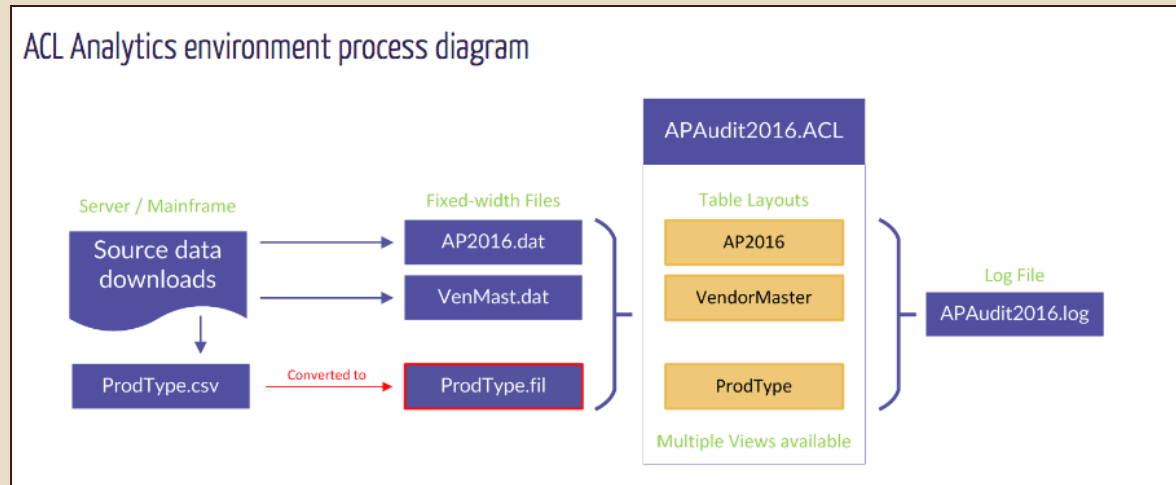
7. View tabs

	Re-Order Point	Market Value	Price Date	Product Class	Product Number	Product Status
1	990	8,691.30	10/18/2000	07	070104347	A
2	985	4,595.40	10/18/2000	07	070104397	A
3	750	14,785.20	10/18/2000	07	070104177	A
4	780	12,887.10	10/18/2000	07	070104677	A
5	420	14,985.00	10/18/2000	07	070104657	A
6	430	24,175.80	10/18/2000	07	070104327	A
7	670	18,681.30	10/18/2000	07	070104377	A
8	140	7,797.40	12/31/2000	03	030414313	A
9	450	15,899.76	12/31/2000	03	030414283	A
10	650	11,186.00	12/31/2000	03	030412553	A
11	250	4,585.52	12/31/2000	03	030412753	A
12	300	865.52	12/31/2000	03	030412903	A
13	75	0.00	05/01/2000	03	034255003	U
14	650	(839.76)	05/01/2000	03	030364163	A
15	1,500	2,497.82	05/01/2000	03	030321663	A
16	1,300	3,232.32	05/01/2000	03	030321683	A
17	600	1,344.23	05/01/2000	03	030322303	A
18	150	2,931.25	05/01/2000	03	030324803	A
19	140	13,107.50	05/01/2000	03	030324883	A
20	300	2,875.76	05/30/2000	03	030030523	A
21	500	4,860.96	05/30/2000	03	030934423	A
22	510	5,853.12	08/30/2000	03	030303413	A
23	550	2,835.44	08/30/2000	03	030303403	A
24	550	9,540.30	08/30/2000	03	030303343	A
25	800	18,475.92	10/11/2000	13	130104601	A

ACL Interface and Basic Navigation



ACL Analytics Environment



- **Project**

- The project is similar to a file folder within a filing cabinet; supporting documentation items for each audit are filed in separate, clearly named folders.
- For each new analysis or audit, a new project should be created to contain the relevant documentation.
- Projects are files with .acl extensions and are named by the user when they are first created.
- There are several item types within the project: table layouts, Views, the log, folders, and scripts.
- To create a new project select File > New > Project.

ACL Analytics Environment

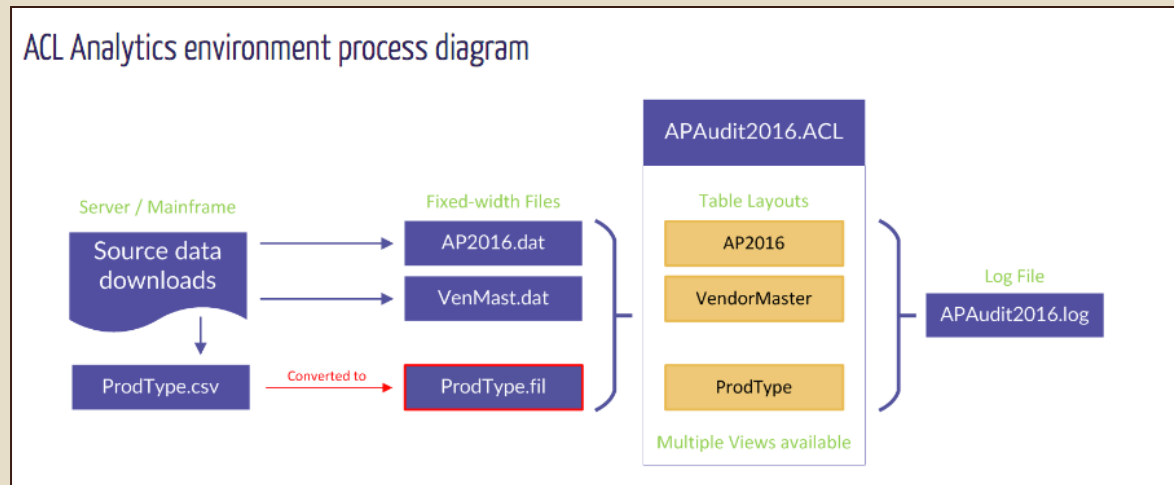
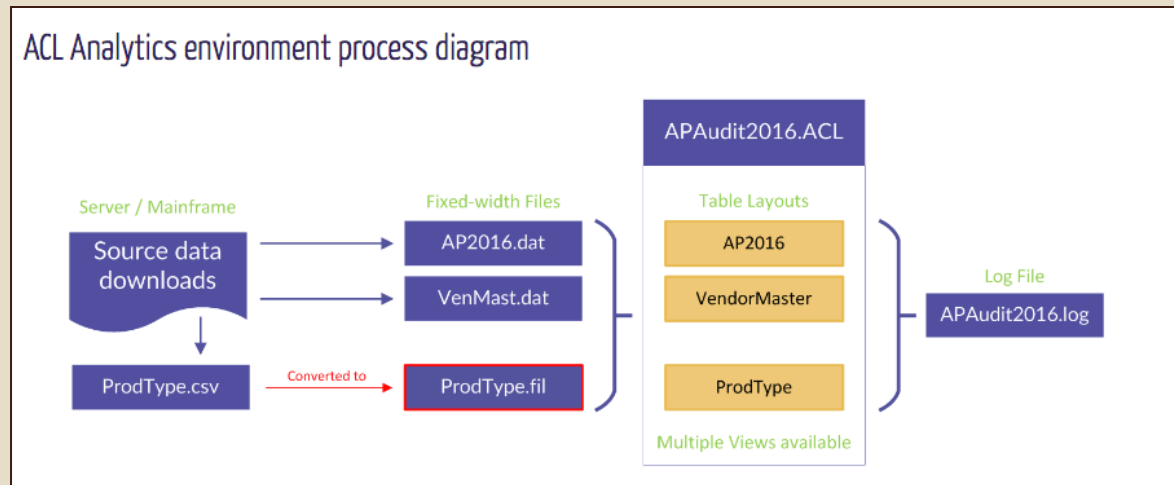


Table layout

- When an ACL Analytics project is first created, it is empty; this is because the source file(s) are stored outside of the project. Creating a table layout links the source file to the project.
- In the ACL Analytics Environment Process Diagram, the source data file (AP2016.dat) is linked to the project via the table layout AP2016. Table layouts contain various information.
 - Data path to the location of the source data file
 - Field names, start positions, lengths, types, number of decimal places and datetime formats
 - Named expressions (calculated fields and named filters)
 - View definitions

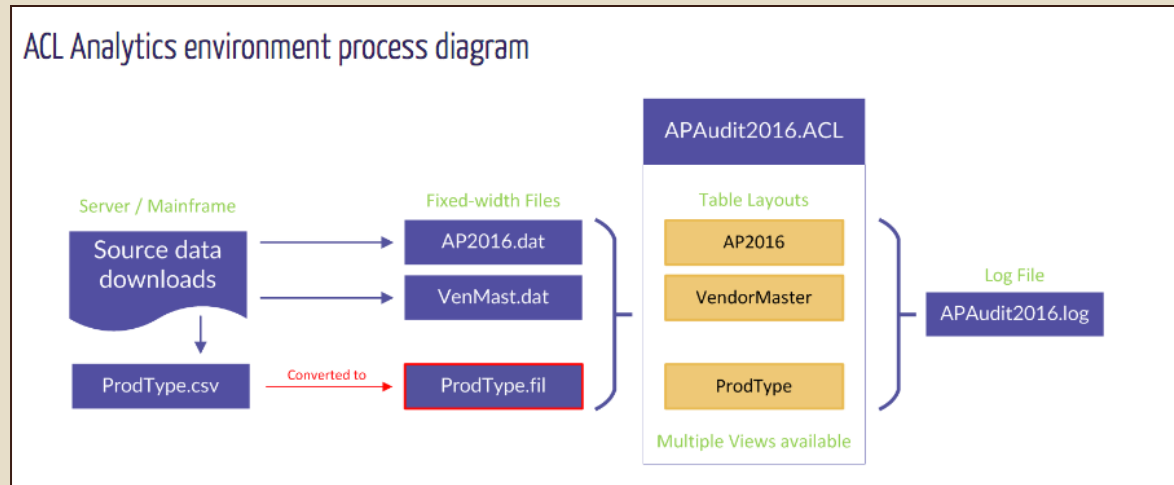
ACL Analytics Environment



View

- A View determines how data is displayed on the screen within ACL Analytics.
- Whenever a table layout is created, a View (named Default_View) is automatically generated that contains all of the fields in the table at the time of creation.
- If you only want to work with certain fields, you can create a new View that has the desired fields. A table layout can have multiple Views.
- Changing a View does not affect the underlying table layout or other Views.
- If a table layout was created with 20 fields, the Default View for that table would also contain 20 fields. Additional Views could contain any of those 20 fields.
- Views can be accessed from the tabs across the bottom of the ACL Analytics screen. In The ACL Analytics Environment process diagram, the table layout, ProductType, has a Default View and two additional Views.

ACL Analytics Environment



Log file

- A log file records most analysis steps and results. When a project is first created, a log file is automatically created and linked to it.
- The log file has the same name as the project that it is linked to, but with a .log extension. In the ACL Analytics Environment process diagram (previous page), the log is named APAudit2016.log.
- Consider the process of totaling a numeric field (running the TOTAL command on it).
- The result of the Total command can't be written to the source file because ACL Analytics is a read only application.
- Instead, the result of the Total is written to the log file. All log results include a date and time stamp along with the name of the table on which the result was produced.
- Results can be seen at the time that the result was created and they can be retrieved later.

ACL Commands

ACL Analytics commands are pre-defined routines and are organized into three menu bar choices: Data, Analyze, and Sampling.

Menu Bar Choice	Intended Purpose	Example	
Data	Manipulate (combine or reorder) data.	Join	Combine two tables.
		Sort	Reorder the sequence of data.
Analyze	Understand (test) data.	Duplicates	Identify any duplicates.
		Classify	Calculate subtotals by category.
Sampling	Create and evaluate sample pools.	Sample	Select a sample of records from a specific population.

ACL Commands

The screenshot displays the TNE.ACL - ACL Analytics application window. The 'Analyze' menu is open, showing various data analysis options. The main window displays a table of transactions with columns for report ID, line ID, category, department, amount, employee number, and employee name.

Analyze Menu Options:

- Count (Ctrl+3)
- Total (Ctrl+4)
- Profile
- Statistics
- Sequence (Ctrl+6)
- Gaps
- Duplicates
- Fuzzy Duplicates
- Classify
- Summarize (Ctrl+0)
- Histogram (Ctrl+8)
- Cross-tab
- Stratify (Ctrl+5)
- Age
- Benford

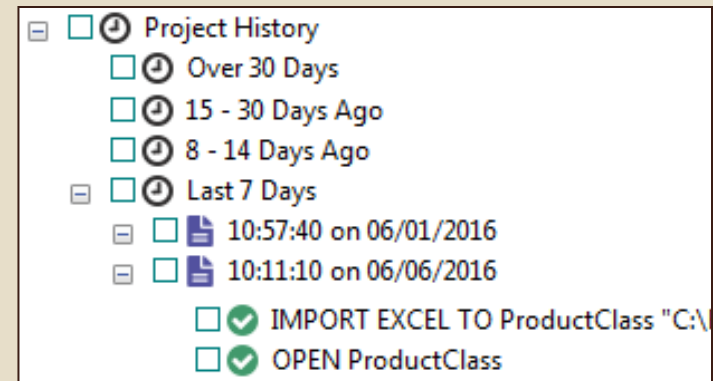
Table Data:

TNE_TRANS_REPORT_ID	TNE_TRANS_LINE_ID	TNE_TRANS_CATEGORY	TNE_TRANS_EMP_DEPARTMENT	TNE_TRANS_AMOUNT_FC	TNE_TRANS_EMP_NUMBE	TNE_TRANS_EMP_NAME
02084614	0050192506	MATERIAL	Accounting	1194.82	00900049	Jillian P. Mcfadden
02084614	0050409830	OFFICE	Accounting	30.88	00900049	Jillian P. Mcfadden
02086739	0050809787	MEAL	Accounting	22.90	00900049	Jillian P. Mcfadden
02086739	0050809788	ACCOMOD	Accounting	11.04	00900049	Jillian P. Mcfadden
02086739	0050927645	ACCOMOD	Accounting	97.75	00900049	Jillian P. Mcfadden
02086739	0051116419	MATERIAL	Accounting	125.83	00900049	Jillian P. Mcfadden
02082262	0050122267	MEAL	Sales and Marketing	29.61	09910754	Stephanie N. Giles
000000724	0050594631	MISC	Sales and Marketing	50.94	09910754	Stephanie N. Giles
000000724	0050594632	MISC	Sales and Marketing	10.00	09910754	Stephanie N. Giles
000000724	0050594633	MISC	Sales and Marketing	91.59	09910754	Stephanie N. Giles
5000000724	0050661407	MISC	Sales and Marketing	56.04	09910754	Stephanie N. Giles
5000000724	0050661408	MISC	Sales and Marketing	122.74	09910754	Stephanie N. Giles
5000000724	0050731454	MISC	Sales and Marketing	48.82	09910754	Stephanie N. Giles
5000000724	0050731455	MISC	Sales and Marketing	52.54	09910754	Stephanie N. Giles
5000000724	0050809554	MISC	Sales and Marketing	369.21	09910754	Stephanie N. Giles
5000000724	0050809555	MISC	Sales and Marketing	94.21	09910754	Stephanie N. Giles
5000000724	0050927279	MISC	Sales and Marketing	10.00	09910754	Stephanie N. Giles
5000000724	0050927280	MISC	Sales and Marketing	68.93	09910754	Stephanie N. Giles
5000000724	0050927281	MISC	Sales and Marketing	744.80	09910754	Stephanie N. Giles
5000000724	0050927282	MISC	Sales and Marketing	100.39	09910754	Stephanie N. Giles
5000000724	0051052436	MISC	Sales and Marketing	225.28	09910754	Stephanie N. Giles
5000000724	0051052437	MISC	Sales and Marketing	309.81	09910754	Stephanie N. Giles
5000000724	0051206000	MISC	Sales and Marketing	22.15	09910754	Stephanie N. Giles
5000000724	0051206001	MISC	Sales and Marketing	31.65	09910754	Stephanie N. Giles
5000000724	0051314311	MISC	Sales and Marketing	5.83	09910754	Stephanie N. Giles

Logs

- About the log

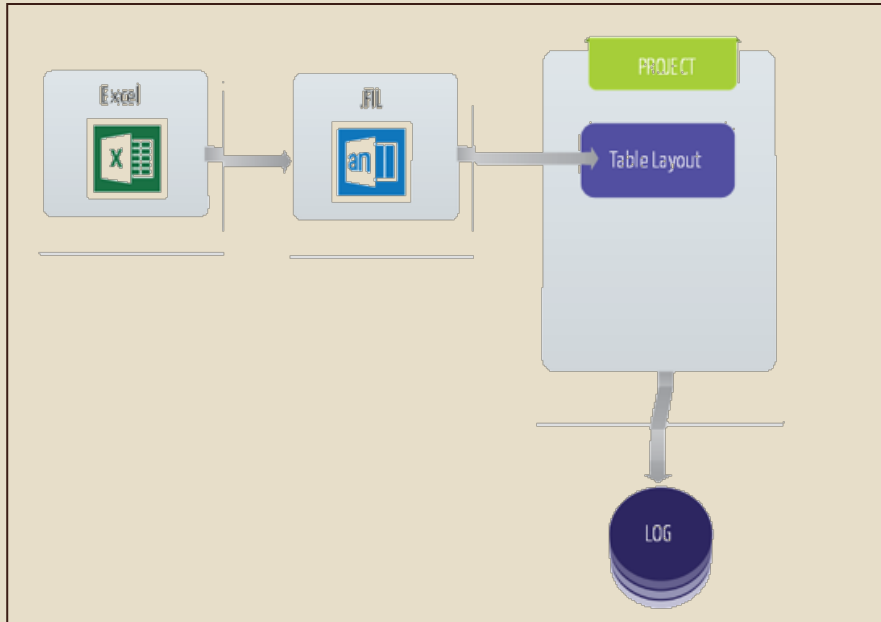
- The log provides a chronological record of work performed on a project. The log automatically records every step taken in a project.
- This provides an audit trail of the analysis, and allows users to retrace and/or re-create the steps taken to produce their results, print a report, or create a script to repeat the analysis process.
- Each analysis step is written to the log as an entry, with log entries organized into log sessions.



The Log



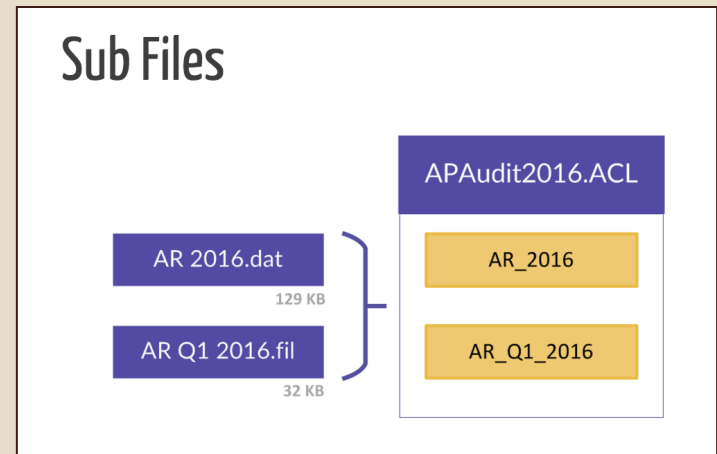
Basic ACL Analytics Environment



- Source files, such as an Excel file reside outside of the ACL project.
- Corresponding .FIL files are created for each source file. .FIL files also reside outside of the ACL project and are referenced by the table layout. In a way, the table layout acts as a window to the .FIL file.
- You can view the log in the Navigator of your project.

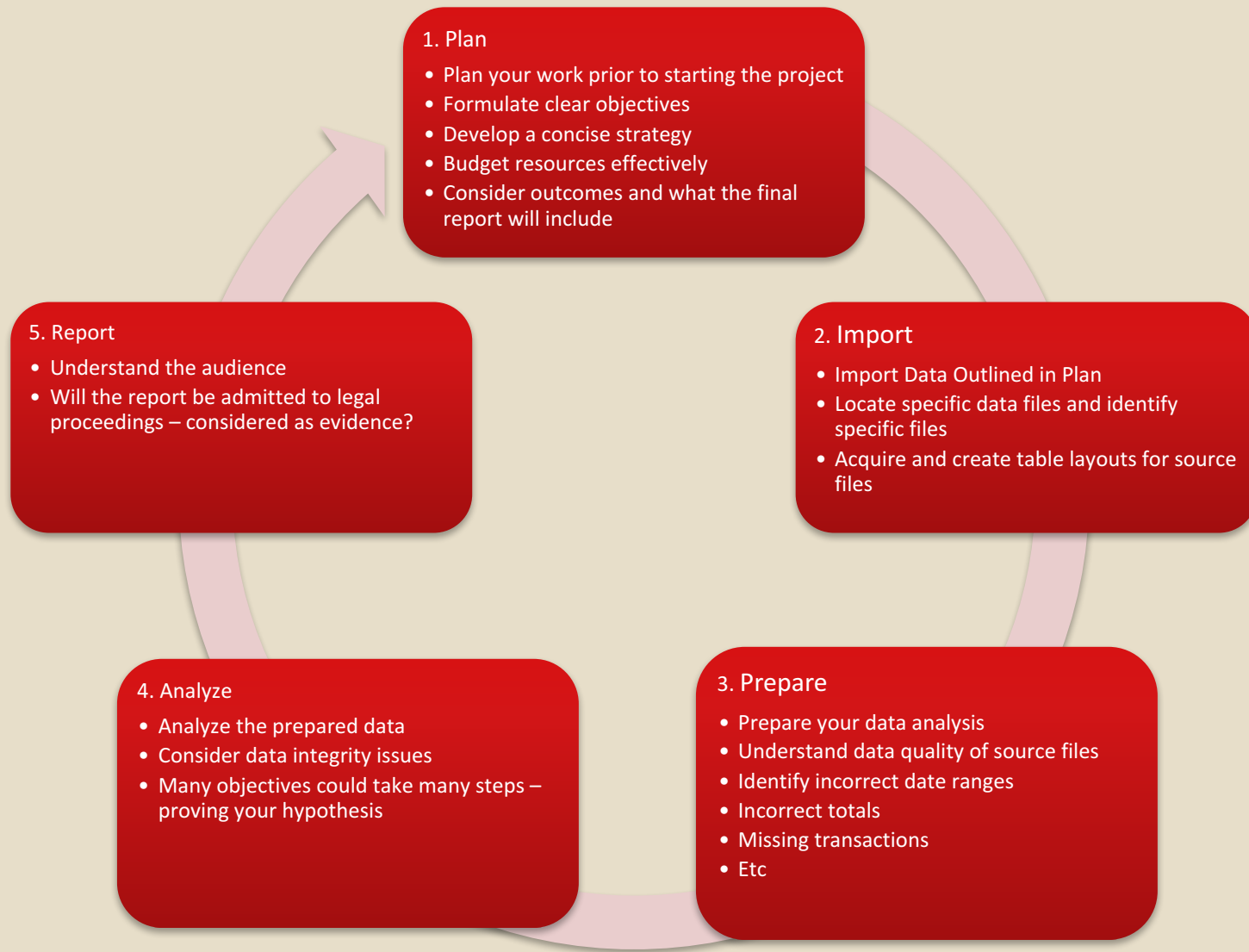
Sub Files

- When a new table is created as the result of running a command a .fil sub file is created.
- In the image to the right, the source file AR 2016.dat is 129 KB and contains Accounts Receivable data for all of 2016.
- If we use the Extract command to create a new table, AR_Q1_2016, that contains only the AR data from the first quarter, a sub file, AR_Q1_2016.fil is created. Since AR_Q1_2016 is a subset of the AR_2016 file, it makes sense that it is only 32 KB.
- AR_2016 contains data for the full year, but analysis is to be performed on Q1 data.



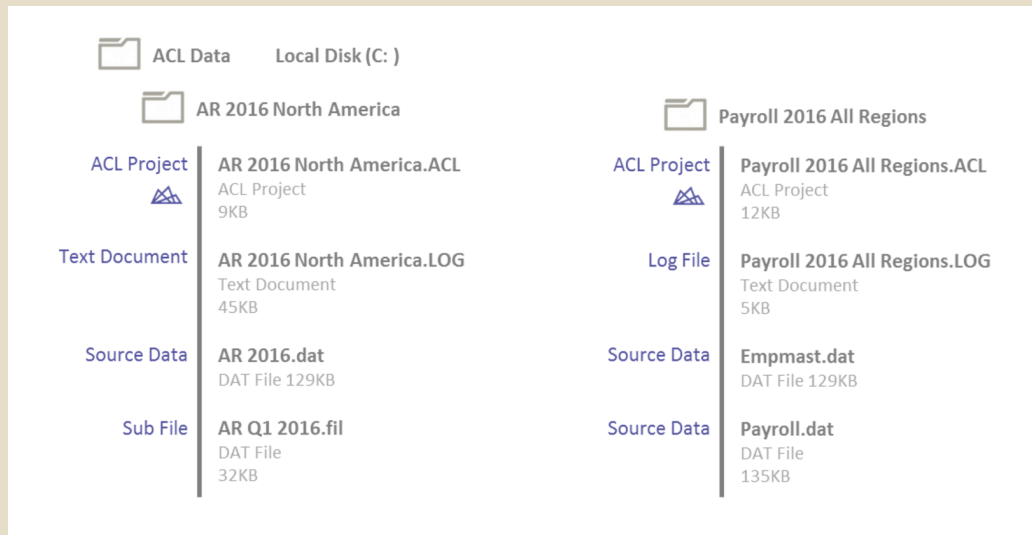
- Use the Extract command to create a sub-file containing Q1 data.
- Subsequent analysis will be faster on the smaller, sub-file.
- ACL Analytics commands that create new tables always create new sub-files with .FIL extensions.

Data Analysis Cycle



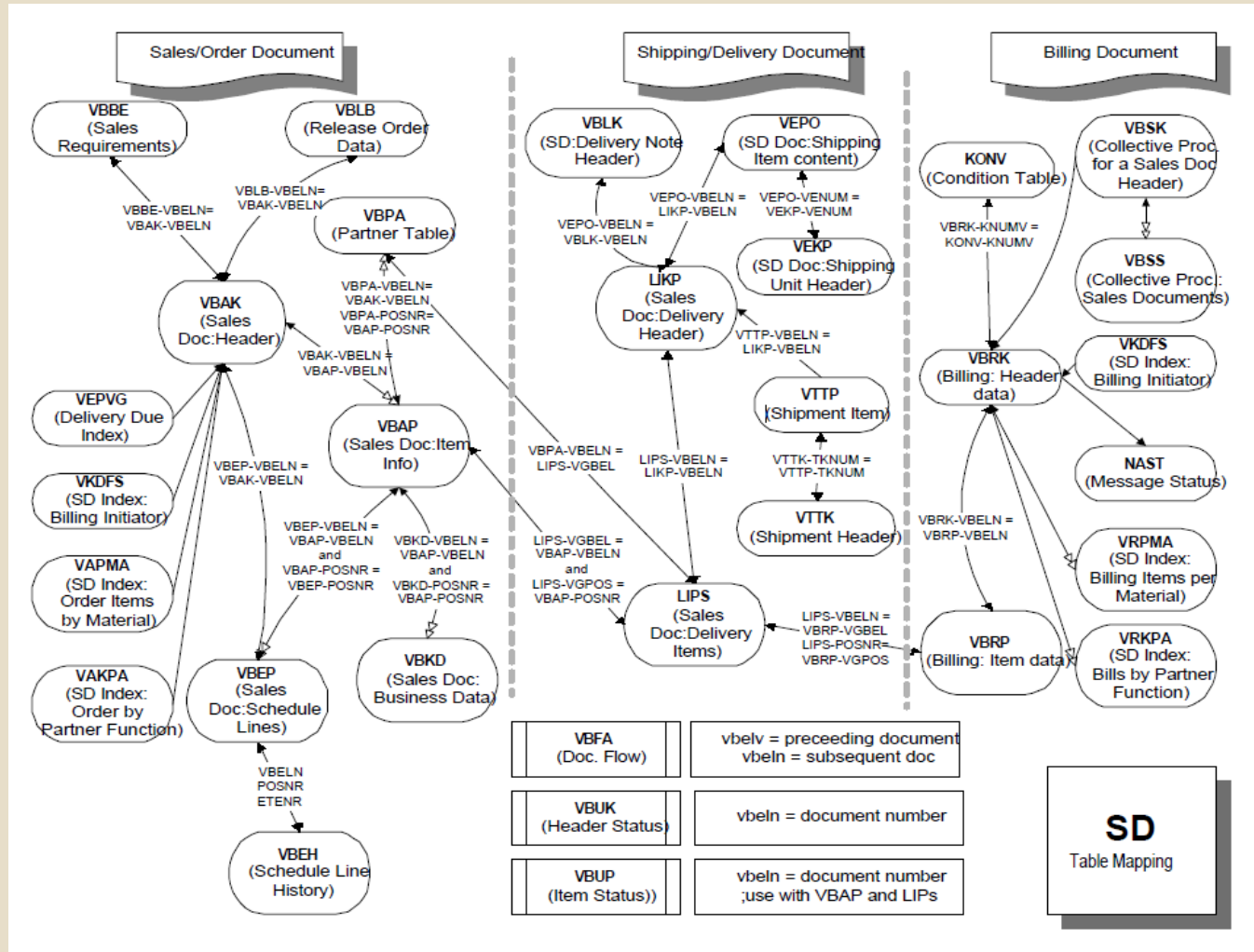
Best Practices

- Organized, Organize, Organize
 - Use folders and subfolders to organize your work



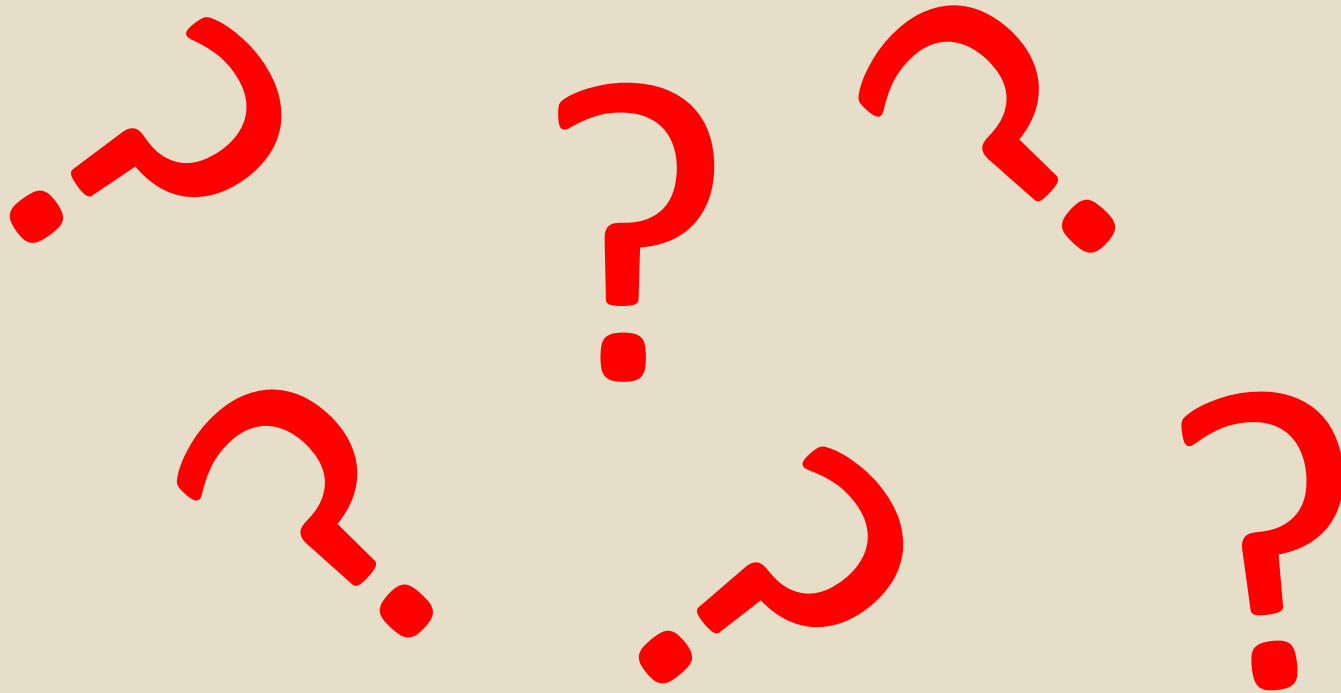
- Use well-defined naming conventions
 - Useful when searching for items
 - Helps in the interpretation of your work
 - Use Descriptive names (e.g. file B is not a good name unless there is a data map)

Data Map with Data File Sources Noted



Source: Ernst & Young

Questions



Thank you.