Data Analysis Tools

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Objective:

To show how data analysis assists in compliance auditing for travel and entertainment expenses.

Data Analysis Tools

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Disclaimers:

- Names and non-compliances shared have been modified to protect the employee.

- ACL 10 tool used for examples but the concept can apply across different software tools using different types of data.

Travel and Entertainment Risks

Excessive meals

Falsifying Receipts

Submitting Fake Expenses

Airfare not in accordance with Company policy

Excessive tipping on meals

Using incorrect categories

Approving Personal Expenses

Reimbursement of unauthorized expenses

Submitting Personal Expenses

Approving Duplicate Reports

Submitting Duplicate Reports

Submitting a fraudulent report

Submitting and approving your own expenses

Purchase of gift cards

Not providing required receipts for expenses

Project Lopez

Audit Test: **Gift Cards Review**

ACL Function: **Workspace**
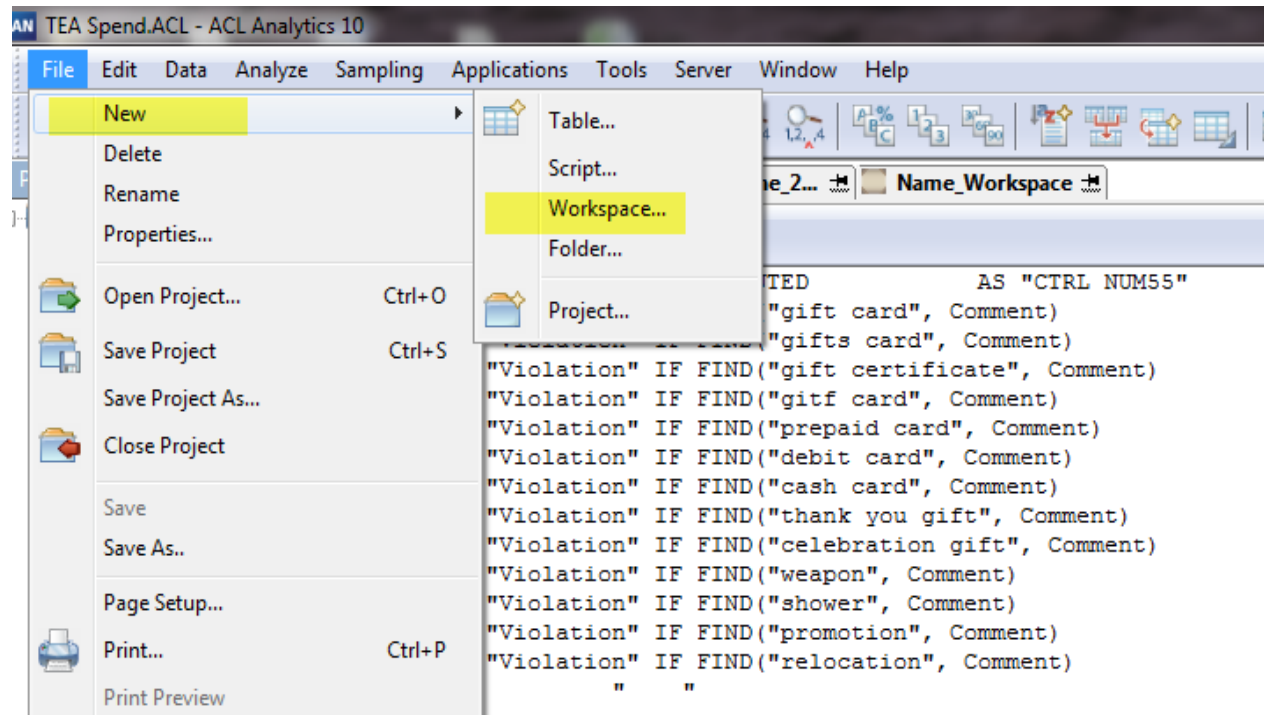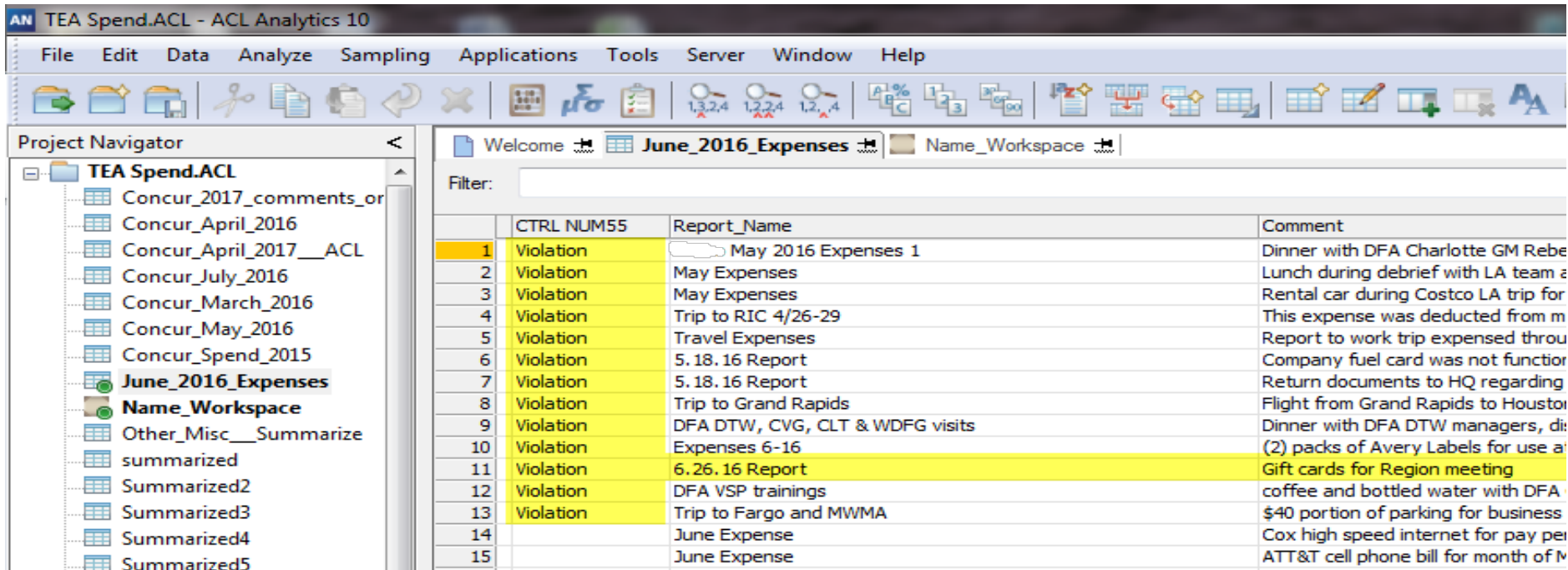
Project Lopez

ACL Function - Workspace

Ability to search multiple words within a mass amount of data, identifying matches.
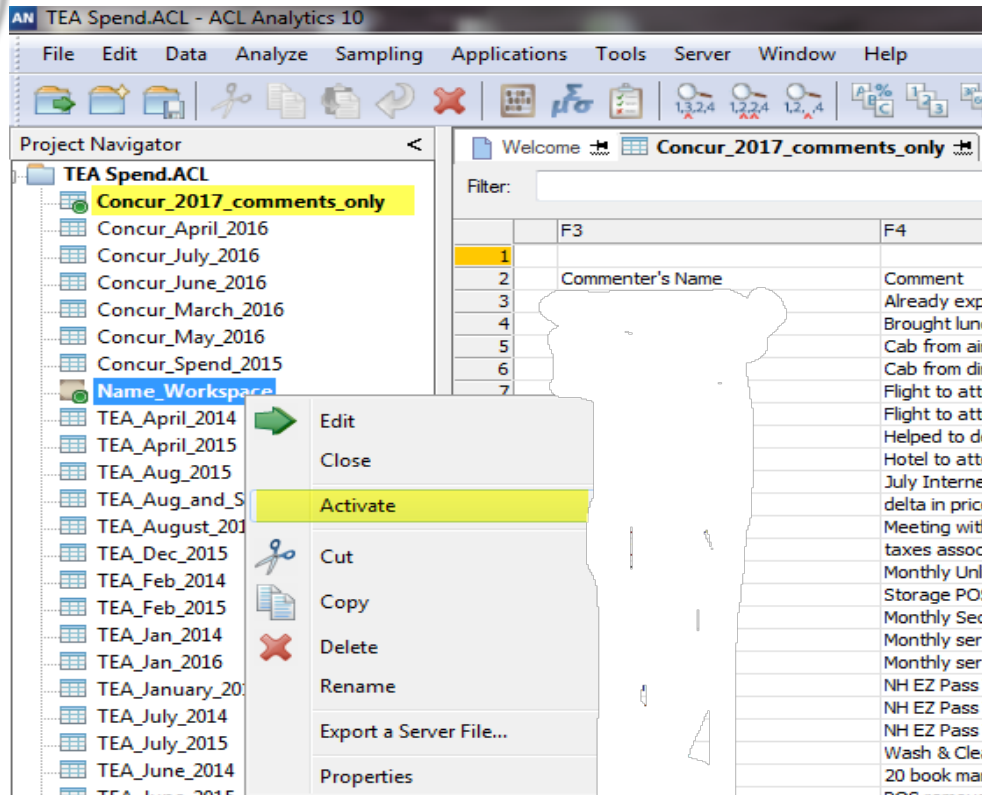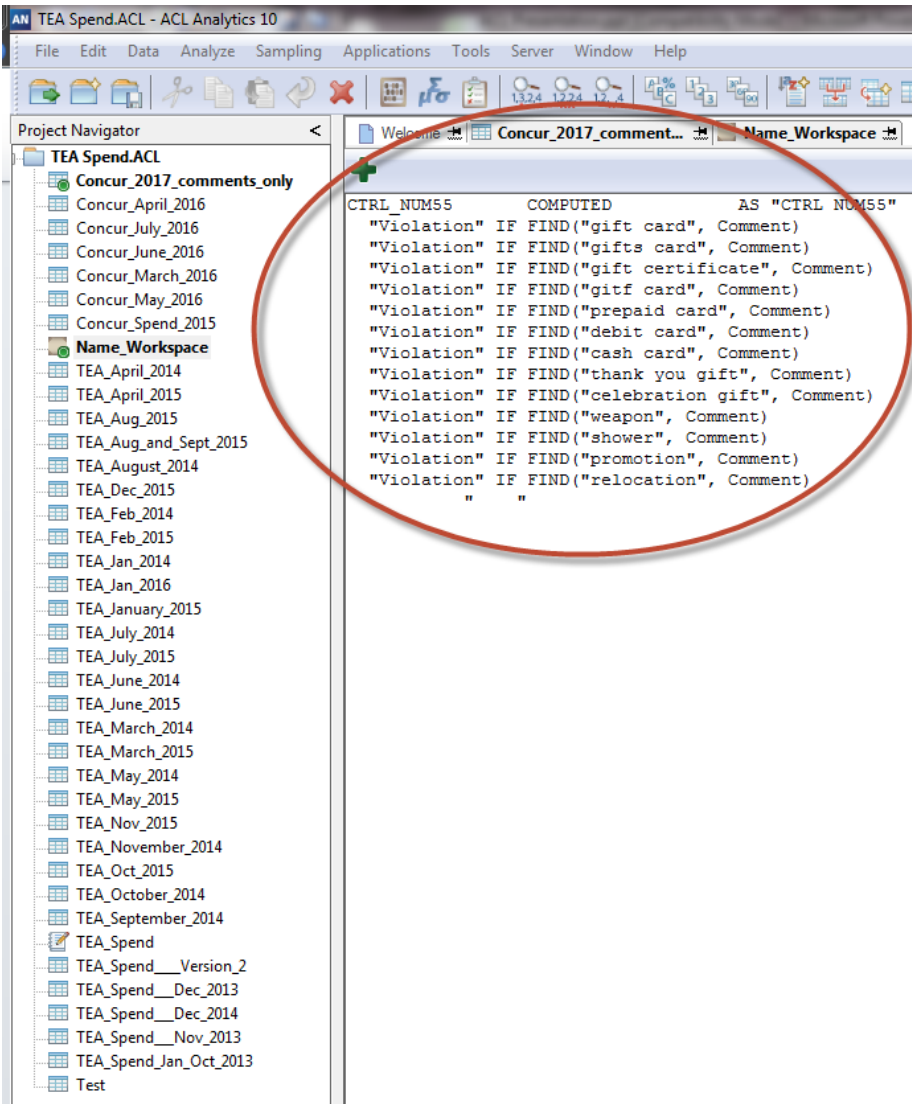
Project Lopez - Results

- **Workspace identifies the items based on the query**

- **Data review still important to eliminate false positives**

- **Data identification is just a starting point**

Project Lopez - Results

Project Washington

Audit Test: **Duplicate Expense Review**

ACL Function: **Analyze (Look for Duplicates)**

Project Washington

Project Washington - Results

- Easy to sort duplicates based on amount, other criteria

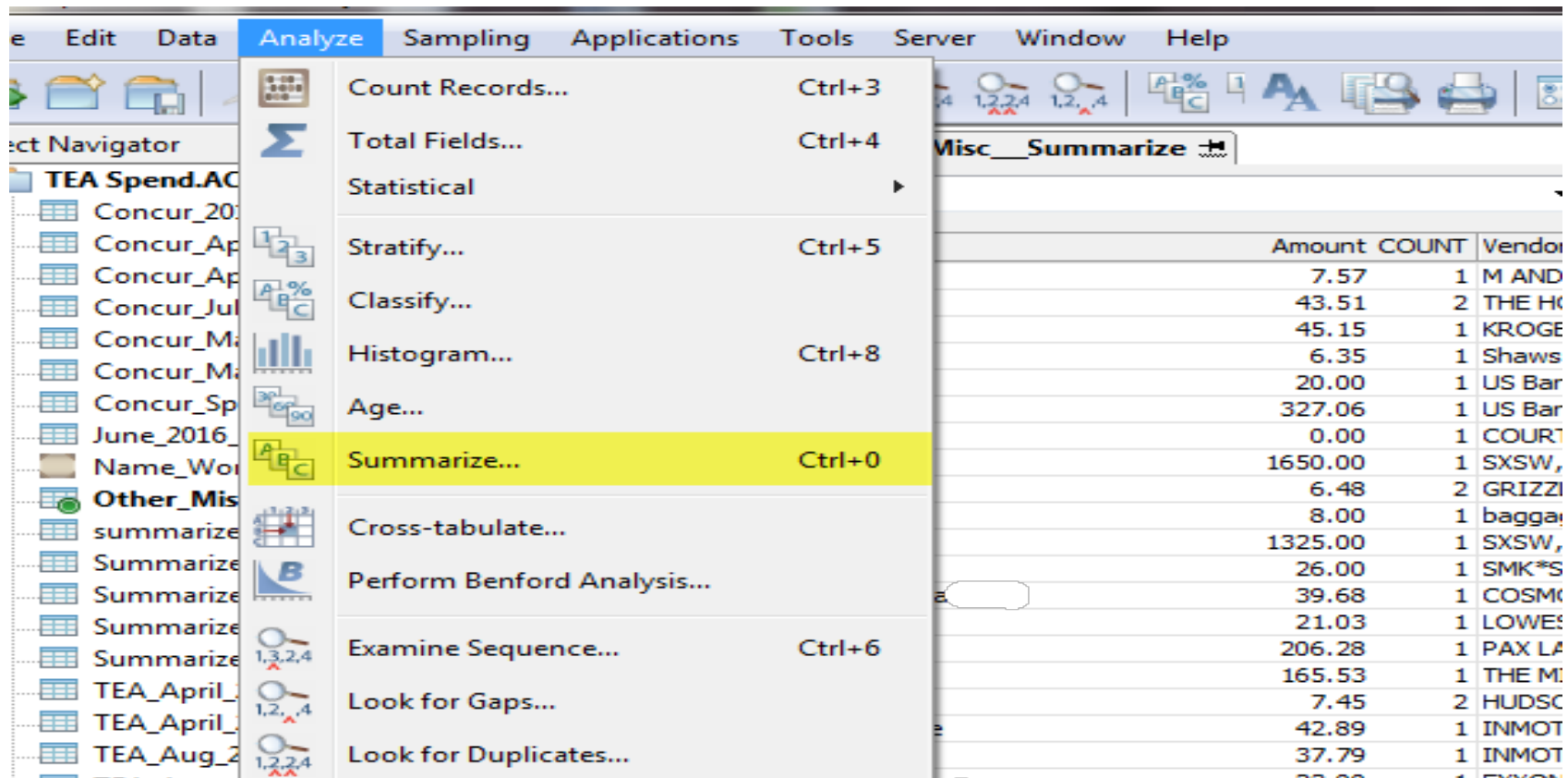- May need additional analysis to eliminate false positives

Project Kent

Audit Test: Unauthorized Expenses

ACL Function: Analyze (Summarize)

Project Kent

ACL Function - Summarize

Allows you to summarize by a particular field or field(s).

Project Kent - Results

- **Summarizing the data identifies the items of higher risk**

- **Allows for the use of other information (vendor, for example) to further our research**

	Employee	Report_Name	Amount	COUNT	Vendor
1		Recruiting Shirts	5586.91	1	VCU
2		Recruiting Shirts	3222.47	1	UNIVERSITY OF RICHMOND
3		Strayer 3-27-2017	3024.78	1	STRAYER UNIVERSITY
4		Market Walk	2220.75	1	DAILY PLANET CLOTHING STORE
5		ANA Conference and SXSW	1699.49	1	SXSW, LLC
6		ANA Conference and SXSW	1650.00	1	SXSW, LLC
7		ANA Conference and SXSW	1325.00	1	SXSW, LLC
8		ANA Conference and SXSW	1325.00	1	SXSW, LLC
9		AP Conference	1068.43	1	UNIV. OF KENTUCKY
10		4/4/17	950.00	1	DUKE UNIVERSITY
11		Hoops & Hops--Las Vegas	730.29	2	UNIVERSITY OF RICHMOND
12		April Apartment Expense Report	616.21	3	AED FURNITURE RENTAL

Welcome | Statistics | Other_Misc__Summarize

Filter: ▼ Index: (None)

Project Johansson

Audit Test: Fraudulent expenses ($50 receipt threshold)

ACL Function: Analyze (Stratify)

Project Johansson

ACL Function – Stratify

Categorizes amounts based on selected fields
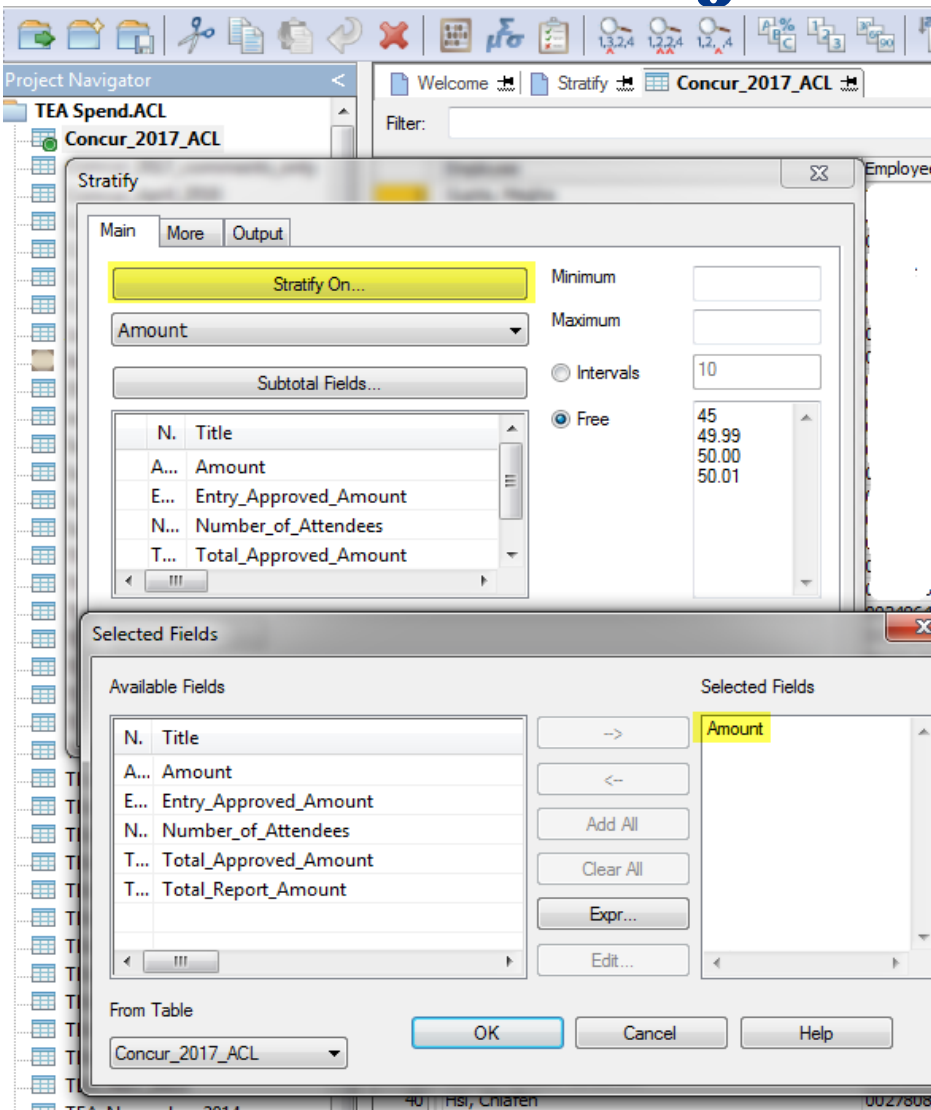
Amount	Count	Percent of Count	Percent of Field	Amount
<45.00	21,298	60.54%	8.29%	269,583.81
45.00 - 49.98	810	2.3%	1.18%	38,464.23
49.99 - 49.99	17	0.05%	0.03%	849.83
50.00 - 50.01	1,485	4.22%	2.28%	74,250.00
>50.01	11,568	32.88%	88.21%	2,867,835.73
Totals	35,178	100%	100%	3,250,983.60

Project Johansson - Results

- Identifies outliers, items that differ from the general population

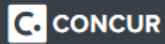| Filter:		(Amount >= 49.99 AND Amount <= 49.99)			
		Employee_ID	Transaction_Da	Report_Name	Expense_Type
50		:1989	06/01/2017	360 Feedback Survey	Other / Miscellaneous
103		77724	06/18/2017	June 2017 Report	Other / Miscellaneous
107		;7903	05/08/2017	5.26.17 Report	Other / Miscellaneous
205		.4695	06/12/2017	June 2017 Expenses	Meals - Individual Di
206		.4695	06/13/2017	June 2017 Expenses	Meals - Individual Di
207		.4695	06/14/2017	June 2017 Expenses	Meals - Individual Di
208		4695	06/15/2017	June 2017 Expenses	Meals - Individual Di
209		4695	06/16/2017	June 2017 Expenses	Meals - Individual Di
210		.4695	06/17/2017	June 2017 Expenses	Meals - Individual Di
211		.4695	06/18/2017	June 2017 Expenses	Meals - Individual Di
212		.4695	06/19/2017	June 2017 Expenses	Meals - Individual Di
213		.4695	06/20/2017	June 2017 Expenses	Meals - Individual Di
214		.4695	06/21/2017	June 2017 Expenses	Meals - Individual Di
215		.4695	06/22/2017	June 2017 Expenses	Meals - Individual Di
4543		'6171	12/01/2016	December Expense Rep	Wireless Devices (Sma
4628		;8403	12/18/2016	Megan Blaschke 1.3.17	Internet/Wireless
26049		'4097	01/05/2017	January 2017	Internet/Wireless

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Project Johansson - Results

Project Brady

Audit Test: Termination Testing

ACL Function: Data (Join Tables) – "Matching"
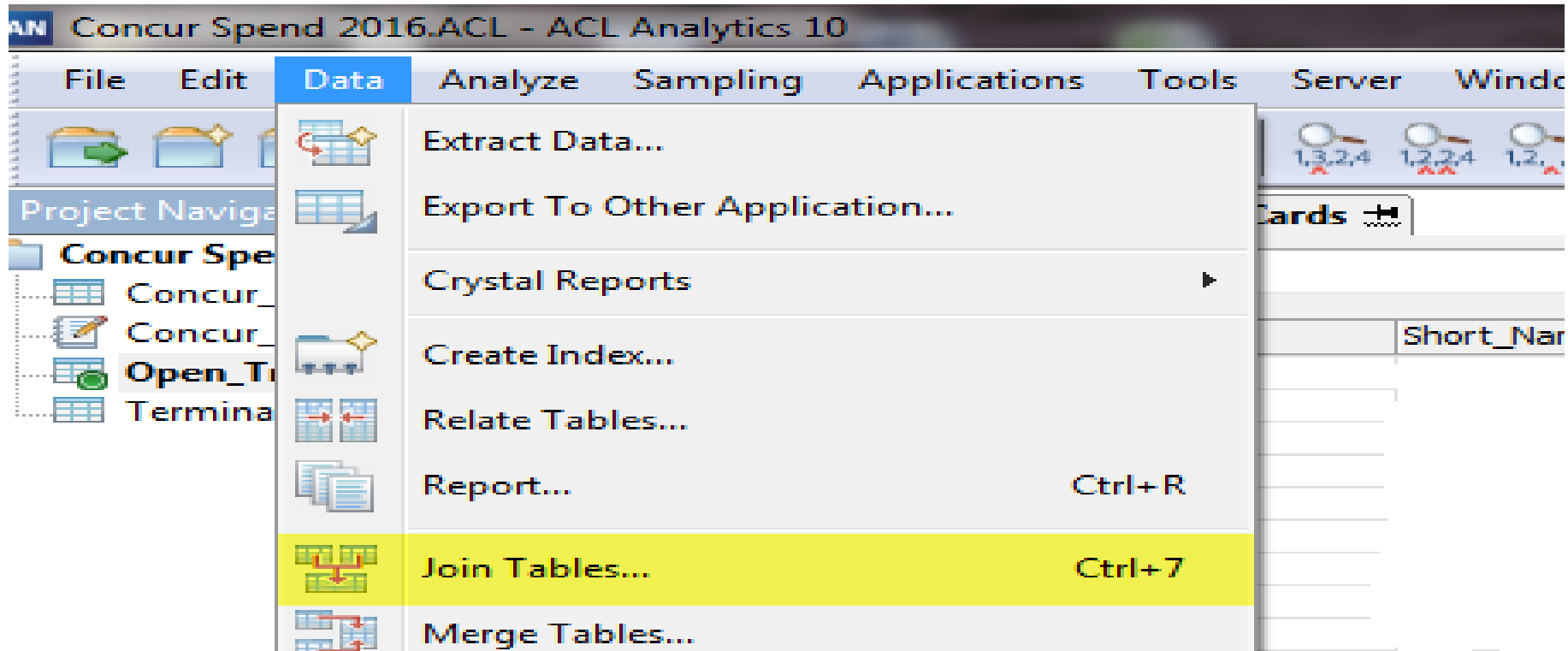
Project Brady

ACL Function – Join Table

Matches items from two lists using a common identifier

Project Brady - Results

- List of 'matches' with all of your selected fields

Project Brady - Results

US bank. Access® Online

Account Profile

Switch Accounts

T. Brady

Product
Corporate Card

Account Overview

Summary ⓘ

Account Status	Open
Credit Limit	$20000
Available Credit	$19148
Expiration Date	07/2021

Payment Information ⓘ

Statement Balance	$1,578.20 due on 07/17/2017
Current Balance	$851.80
Statement Close Date	06/26/2017

Takeaways

- **Data analytics is a means to an end**

  - **Without the use of a competent tool, large amounts of time spent data mining**

  - **Narrows down the data to items that are <u>truly</u> risky**

Takeaways

- **ACL Functions**

  - **Project Lopez – Workspace**

  - **Project Washington – Duplicates**

  - **Project Kent – Summarize**

  - **Project Johansson – Stratify**

  - **Project Brady – Matching**

Questions