

4.11 Assessment Data Exploration Using Excel Data Mining

December 9, 2011



Pat Cummings
Tacoma School District
Director of Research & Evaluation
pcummin@tacoma.k12.wa.us

Andrew Schwebke
Tacoma School District
Director of Curriculum & Instruction
aschweb@tacoma.k12.wa.us

Dawn Wakeley
Tahoma School District
Associate Director Teaching & Learning
dwakeley@tahomasd.us

Purpose of this section:

- Demonstrate the data mining add-in to analyze math data.

WERA-Alg_Ver1.xlsx - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Add-Ins Data Mining

Analyze Design

Analyze Key Influencers Detect Categories Fill From Example Forecast Highlight Exceptions Scenario Analysis Prediction Calculator Shopping Basket Analysis DMAddinsDB (localhost) Connection Help Help

Table Analysis Tools

AU7 fx FAIL

	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV
1	08_WCAP_MT	2009-10_Sem2_A_Core_Subt	2009-10_Sem2_B_Core_Subt	2009-10_Sem2_C_Core_Subt	2009-10_Sem2_D_Core_Subt	2009-10_Sem2_E_Core_Subt	2010_11_SEP_DIST_MT	2010_11_DEC_DIST_MT	2010_11_MAR_DIST_MT	SEM1-MT	SEM-1_GRADE	GRADE	ALGEBRA_PASS-FAIL	
2		0	0	3	0	0	Q1	Q3	Q3	ALGEBRA 1	B	B	PASS	
3							Q1	Q3	Q2	ALGEBRA 1	B	B	PASS	
4		1	0	0	1	2	Q1	Q2	Q1	ALGEBRA 1	E	E	FAIL	
5		0	1	1	1	1	Q1	Q2	Q1	ALGEBRA 1	E	E	FAIL	
6		0	0	0	1	0	Q1	Q2	Q2	ALGEBRA 1	E	E	FAIL	
7							Q1	Q1	Q1	ALGEBRA 1	E	E	FAIL	
8		1	0	0	0	0	Q1	Q1	Q1	ALGEBRA 1	E	E	FAIL	
9		0	1	0	0	0	Q1	Q1	Q1	ALGEBRA 1	E	E	FAIL	
10		0	0	0	1	1	Q1	Q1	Q1	ALGEBRA 1	E	E	FAIL	
11		0	0	2	1	1	Q1	Q1	Q1	ALGEBRA 1	E	E	FAIL	
12							Q1	Q1	Q1	ALGEBRA 1	E	E	FAIL	
13		0	1	0	1	1	Q1	Q1	Q2	ALGEBRA 1	E	E	FAIL	

Ready | Data | Sheet2 | Sheet3 | 100%

Data Mining Add-ins

WERA-Alg_Ver1.xlsx - Microsoft Excel

Table Tools: Analyze, Design

File Home Insert Page Layout Formulas Data Review View Developer Add-Ins Data Mining

Analyze Key Influencers Detect Fill From Forecast Highlight Scenario Prediction Shopping DMAddinsDB Help

SQL Server Data Mining - Analyze Key Influencers

Analyze Key Influencers

Microsoft SQL Server 2008

When applied to a table column, the Analyze Key Influencers tool detects the influence of the other columns on the values of the target column. An influencers report is generated in a separate sheet, and ranks the key influencers based on their importance. You can continue the analysis and generate reports that compare the key influencers for each pair of distinct values of the target column.

Column Selection:
Select the column to analyze for key factors:
ALGEBRA_PASS_FAIL
[Choose columns to be used for analysis](#)

Run Close

AR	AS	AT	AU	AV
SEM1-INT	SEM-1_GRADE	GRADE	ALGEBRA_PASS-FAIL	
3RA 1	B	B	PASS	
3RA 1	B	B	PASS	
3RA 1	B	B	FAIL	
3RA 1	B	B	FAIL	
3RA 1	E	E	FAIL	
3RA 1	E	E	FAIL	
3RA 1	NC	NC	FAIL	
3RA 1	NC	NC	FAIL	

Select Key Factor

WERA-Alg_Ver1.xlsx - Microsoft Excel

TableTools Analyze Design

File Home Insert Page Layout Formulas Data Review View Developer Add-Ins Data Mining Analyze Design

Analyze Key Influencers Detect Categories Fill From Example Forecast Highlight Exceptions Analysis Scenario Prediction Calculator Shopping Basket Analysis DMAddinsDB (localhost) Connection Help Help

Table Analysis Tools

A5 Column

Column	Value
6	GRADE C
7	GRADE B
8	GPA_2010 >= 3.198915754
9	GRADE D
10	GRADE A
11	SEM_1_GRADE D
12	2009_10_Sem2_E_Core_Sub 0
13	GRADE_TO_GRAD_YEAR N/A
14	ON_TARGET_FROM_GRAD_YR Missing
15	05_WCAP_MT MET
16	06_WCAP_MT MET
17	GR_LEVEL 8
18	GPA_2010 2.5412177016 - 3.198915754
19	07_WCAP_MT MET

Key Influencers R

Key Influencers and their in

Filter by 'Column' or 'Favors' to see how variou

SQL Server Data Mining - Discrimination based on key influencers

Discrimination based on key influencers Microsoft SQL Server 2008

Discrimination Reporting

Select values to create reports to compare how key factors differentiate them. You can continue to create reports for different pairs of values, or close this dialog box at any time to complete your analysis.

Column being analyzed: ALGEBRA_PASS_FAIL

Compare Value 1: PASS

to Value 2: FAIL

Add Report Close

Data Influencers for ALGEBRA_PASS Sheet2 Sheet3

Ready 26 of 131 records found Average: 19 Count: 108 Sum: 494 100%

Discrimination between pass and fail

The screenshot shows an Excel spreadsheet with a table titled "Discrimination between factors leading to 'PASS' and 'FAIL'". The table has four columns: "Column", "Value", "Favors PASS", and "Favors FAIL". The "Favors PASS" and "Favors FAIL" columns contain horizontal bar charts representing the proportion of each outcome for each factor. A red box highlights the table area, and a yellow arrow points to the right from the bottom right corner of the table.

Column	Value	Favors PASS	Favors FAIL
GRADE	E		
SEM_1_GRADE	E		
GPA_2010	< 1.0022038006		
SEM_1_GRADE	NC		
GRADE	NC		
GRADE	C		
GRADE	B		
GPA_2010	>= 3.198915754		
GRADE	D		
GRADE	A		
SEM_1_GRADE	D		
2009_10_Sem2_E_Core_Sub	0		
GRADE_TO_GRAD_YEAR	N/A		
ON_TARGET_FROM_GRAD_YR	Missing		
05_WCAP_MT	MET		
06_WCAP_MT	MET		