

Sigma Worksheet Expansion

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Summary

- Simplifying the process of analyzing data in cloud data warehouses
- Sigma Worksheet: interactive spreadsheet visualizer that supports ad-hoc analysis, generation of complex visualizations, and creation of reusable views
- Features:
 - Supports large data integrations from data warehouses
 - Query Processing
 - Creates visualizations
 - Speed Optimizations
- Study: feedback from 100 user survey and 70 person interview

Follow up Ideas

- Finding Data through search and recommendation algorithms
- Change user interface to behave more similar to an actual spreadsheet
- Making it easier to share and edit worksheets
- Adding functionality for more complex operations
- Improve performance
 - (add functionalities for anti-joins, complex joins)

Interface Expansion

Gale and Seiden, et al.

Share & edit

The screenshot shows a software interface for data analysis. At the top, a formula bar (A) displays 'CountIf([CANCELLED]) / Count()'. Below it is a central data table (B) with columns: DATE, FLIGHTS, CODE, Airline Name, DEPART, NUMBER, DEST, CANCELLED, and REASON. The table is filtered by DATE (2015-12-01) and FLIGHTS (14). To the left of the table is a control panel (D) with filters for DATE, ORIGIN, and PARAMETERS. To the right is a sidebar (C) with a search bar and a list of columns. At the bottom left, a status bar (E) shows '407 Rows - 12 Columns'.

DATE	FLIGHTS	CODE	Airline Name	DEPART	NUMBER	DEST	CANCELLED	REASON
2015-12-01	14	DL	Delta Air Lines Inc.	600	894	ATL	false	null
				1205	1767	ATL	false	null
				1745	2053	ATL	false	null
		EV	Atlantic Southeast Airlines	635	4149	ORD	false	null
				1004	5969	ORD	false	null
				1632	4165	ORD	false	null
		MQ	American Eagle Airlines Inc.	559	3247	ORD	false	null
				1101	3182	ORD	false	null
				1917	3164	ORD	false	null
		WN	Southwest Airlines Co.	530	2119	BWI	false	null
				605	2742	TPA	false	null
				1290	2753	MCO	false	null
				1450	877	LAS	false	null
				1735	1640	BWI	false	null
				600	894	ATL	false	null
				1205	1767	ATL	false	null
				1745	2053	ATL	false	null
		EV	Atlantic Southeast Airlines	635	4149	ORD	false	null
				1004	5969	ORD	false	null
				1632	4165	ORD	false	null
		MQ	American Eagle Airlines Inc.	559	3247	ORD	false	null
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		WN	Southwest Airlines Co.	530	2119	BWI	false	null
				605	2742	TPA	false	null
				1290	2753	MCO	false	null
				1450	877	LAS	false	null
				1735	1640	BWI	false	null
				600	894	ATL	false	null
2015-12-02	14	DL	Delta Air Lines Inc.	600	894	ATL	false	null
				1205	1767	ATL	false	null
				1745	2053	ATL	false	null
		EV	Atlantic Southeast Airlines	635	4149	ORD	false	null
				1004	5969	ORD	false	null
				1632	4165	ORD	false	null
		MQ	American Eagle Airlines Inc.	559	3247	ORD	false	null
				1101	3182	ORD	false	null
				1917	3164	ORD	false	null
		WN	Southwest Airlines Co.	530	2119	BWI	false	null
				605	2742	TPA	false	null
				1290	2753	MCO	false	null
				1450	877	LAS	false	null
				1735	1640	BWI	false	null
				600	894	ATL	false	null
2015-12-03	14	DL	Delta Air Lines Inc.	600	894	ATL	false	null

Search & recommendation

2 views,

- Original
- spreadsheet with popups

More operations

Figure 4: The Worksheet interface. The central feature of Worksheet is the data table (B) which displays the results of the query described by the worksheet. The level inspector (C) summarizes the multi-dimensional hierarchy of aggregation in Worksheet. The formula bar (A) enables the inspection of calculated value definitions. The control panel (D) displays the filter and parameter state of Worksheet as well as “totals” values. The result summary (E) gives the scale of the data table. Each of these elements supports editing through direct manipulation.

Other Expansions

- Spreadsheet-like interface → visualization-like interface tool