

# Google Sheets & Google Forms for Libraries

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University of Missouri-St. Louis

Reference / Institutional Repository Librarian

Session 3A

March 1st, 2017

# University of Missouri-St. Louis

Established 1963

Commuter school

~15K students

Two libraries in one:

Thomas Jefferson Library &  
Mercantile Library

The logo for the University of Missouri-St. Louis, featuring the letters "UMSL" in a bold, dark red, sans-serif font.

# Journal Review Project

A one time review of 270 resources by  
11 librarians.

# Public Service Desk Statistics

The ongoing collection of information  
regarding patron interactions at the  
desk.

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# Journal Review Project

Going from google sheets, to google forms and back to google sheets.

Using Url manipulation to pre-fill a form.

Summarizing information gathered into a pivot table.

# Public Service Desk Statistics

Using array formulas to make a little information into a lot more data.

Real time pivot tables summarizing the information gathered.

Using conditional formatting to make things pretty.

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# Journal Review Project



# The Challenge

Coordinating the notes of almost a dozen librarians responding to hundreds of resource.

Starting and ending with a spreadsheet.

	C	D	E	H	I
1	SUGGESTED CUT	Title	ISSN	Library Holdings	Link
37	XXX	A C C R A COST OF LIVING (NOTE: TJ REF LEVEL 3)	1070-9169	UMSL Libraries Print Journals: - v.25:no.3(1992) - present This is the cut option	<a href="#">LINK</a>
38	XXX	A R L ANNUAL SALARY SURVEY (ASSOCIATION OF RESEARCH LIBRARIES) (NOTE: current issue in TJ OFFICE)	0361-5669	UMSL Libraries Print Journals: - 1979/80 - present (2014/15 last published) This is the cut option	<a href="#">LINK</a>
39	XXX	A R L STATISTICS (CREATSPACE ON INVOICE) (NOTE: current issue in TJ REF LEVEL 3)	0147-2135	UMSL Libraries Print Journals: - 1980/81 - present This is the cut option	<a href="#">LINK</a>
40		ABSTRACTS IN SOCIAL GERONTOLOGY - LSO BILLED	1047-4862	Electronic Collections Online: 1990- present This is the cut option UMSL Libraries Print Journals: - v.33:no.1(1990) - v.50:no.4(2007)	<a href="#">LINK</a>
41		ACADEMIC SEARCH COMPLETE/BSP		UMSL DATABASES: -	<a href="#">LINK</a>
42		AGAINST THE GRAIN	1043-2094	Freely Accessible Arts & Humanities Journals: 1989-3 years ago UMSL Libraries Print Journals: - v.14:no.1(2002) - present This is the cut option	<a href="#">LINK</a>
43	XXX	ALMANAC OF AMERICAN POLITICS (NOTE: monographic standing order (every other year) current ed. at the REF DESK)	0362-076X	LexisNexis Academic (selected full-text only): 07/05/1992-2008 UMSL Libraries TJ NON-CIRCULATING 1972 - (inc.) latest ed. at the REF DESK This is the cut option	<a href="#">LINK</a>

## Library titles

File Edit View Insert Format Data Tools Form Add-ons Help All changes saved in Drive

marvinh@umsl.edu

Comments

Share

fx FY15-16 Cost

	C	D	E	H	I	J
1	SUGGESTED CUT	Title	ISSN	Library Holdings	Link	Notes
69		BUDGET / UNIVERSITY OF MISSOURI		No ISSN match, check LINK	<a href="#">LINK</a>	
70		C C H OMNI TAX UNLIMITED SEE NOTE		UMSL Databases: - SEE NOTE	<a href="#">LINK</a>	QUARTERLY BILL BACKS NOTE: Switched to RIA .
71		C Q RESEARCHER	1056-2036	CQ Press: 05/10/1991- UMSL Libraries Print Journals: -@char10@	<a href="#">LINK</a>	<b>UMSL Database</b>
72		C R : THE NEW CENTENNIAL REVIEW	1532-687X	Humanities International Complete: 09/01/2004- PRESENT Project MUSE - Standard Collection: 2001- PRESENT UMSL Libraries Print Journals: - v.1: no.1(2001) - PRESENT This is the cut option.	<a href="#">LINK</a>	
73	XXX	C R B COMMODITY YEARBOOK SEE NOTE	1076-2906	UMSL Libraries Print Journals: - 1994 - present This is the cut option.	<a href="#">LINK</a>	<b>Print standing order is the cut option. NOTE: 4 pickups since 2000; LAST PICKED UP 03-08-2012</b>
74		C R C HANDBOOK OF CHEMISTRY AND PHYSICS SEE NOTE	0147-6262	UMSL Libraries Print Journals: - 1977(58th ed) - PRESENT This is the cut option.	<a href="#">LINK</a>	Shelved at the REF DESK Print standing order is the cut option.
75	XXX	CANADIAN ALMANAC AND DIRECTORY SEE NOTE	0068-8193	UMSL Libraries Print Journals: - 1979 - PRESENT This is the cut option.	<a href="#">LINK</a>	<b>Print standing order is the cut option. NOTE: 4 pickups since 2000; LAST PICKED UP 03-11-2011</b>
76		CATALOGING SERVICES BULLETIN CUMULATIVE INDEX		No ISSN match, check LINK	<a href="#">LINK</a>	
77		CHILD ABUSE AND NEGLECT IN MISSOURI SEE NOTE		UMSL Library Catalog: - 1988 - 2003 See NOTE	<a href="#">LINK</a>	MO State Document Freely available ONLINE ONLY 2003 -
78		CHILDREN'S SERVICES MANAGEMENT REPORT SEE NOTE		No ISSN match, check LINK	<a href="#">LINK</a>	<b>MO State Document Freely available ONLINE ONLY 2004 -</b>
79		CHINA TODAY SEE NOTE	1005-958x	No ISSN match, check LINK	<a href="#">LINK</a>	<b>No longer published???</b>
80		CHOICE	0009-4978	UMSL Libraries Print Journals: - v.1: no.1(1964) - PRESENT This is the cut option.	<a href="#">LINK</a>	PRINT subscription is the cut option.
81		CITY JOURNAL (ST. LOUIS) SEE NOTE		UMSL Libraries Print Journals: - v.28: no.1(1945) - PRESENT This is the cut option.	<a href="#">LINK</a>	PRINT subscription is the cut option. NOTE: shelved in REF until bound then shelved with TJ PER LEVEL 5
82		CLASSIFIED INDEX OF NATIONAL LABOR RELATIONS BOARD DECISIONS AND RELATED COURT DECISIONS	0092-4962	No ISSN match, check LINK	<a href="#">LINK</a>	
83		COLLEGE AND RESEARCH LIBRARIES NEWS	0099-0086	Art Full Text (H.W. Wilson): 06/01/1998-10/31/2009 Education Full Text (H.W. Wilson): 06/01/1998- Freely Accessible Social Science Journals: 2004- HighWire Press (Free Journals): 05/01/2004-	<a href="#">LINK</a>	PRINT subscription is the cut option.

# Added a link for voting.

Library titles



File Edit View Insert Format Data Tools Form Add-ons Help Last edit was 5 days ago

fx =HYPERLINK("https://docs.google.com/forms/d/e/1FAIpQLSe4motq2ETvLCB1F5F080060wxrBJPVo2egIiuXu299xChAqw/viewform?entry.347228610="&D80&"&en

	B	C	D	E	H
1	Vote	SUGGESTED CUT	Title	ISSN	Library Holdings
73	<a href="#">Vote</a>	XXX	C R B COMMODITY YEARBOOK SEE NOTE	1076-2906	UMSL Libraries Print Journals: - 1994 - present This is the c
74	<a href="#">Vote</a>		C R C HANDBOOK OF CHEMISTRY AND PHYSICS SEE NOTE	0147-6262	UMSL Libraries Print Journals: - 1977(58th ed) - PRESENT T option.
75	<a href="#">Vote</a>	XXX	CANADIAN ALMANAC AND DIRECTORY SEE NOTE	0068-8193	UMSL Libraries Print Journals: - 1979 - PRESENT This is the
76	<a href="#">Vote</a>		CATALOGING SERVICES BULLETIN CUMULATIVE INDEX		No ISSN match, check LINK
77	<a href="#">Vote</a>		CHILD ABUSE AND NEGLECT IN MISSOURI SEE NOTE		UMSL Library Catalog: - 1988 - 2003 See NOTE
78	<a href="#">Vote</a>		CHILDREN'S SERVICES MANAGEMENT REPORT SEE NOTE		No ISSN match, check LINK
79	<a href="#">Vote</a>		CHINA TODAY SEE NOTE	1005-958x	No ISSN match, check LINK
80	<a href="#">Vote</a>		CHOICE	0009-4978	UMSL Libraries Print Journals: - v.1:no.1(1964) - PRESENT T option. UMSL Libraries Print Journals: - v.28:no.1(1945) - PRESENT



## Library Resources

\* Required

Your Initials \*

Your answer

This is the title

CHOICE

Cut Keep

Cut

Keep

Comments

Your answer

SUBMIT

Never submit passwords through Google Forms.

# The Vote Link

Selectors filled out a lot of forms.

## Library Resources

\* Required

Your Initials \*

Your answer

This is the title

CHOICE

Cut Keep

Cut

Keep

Comments



Your answer

SUBMIT

Never submit passwords through Google Forms.

### Send a form with pre-filled answers

You can send respondents a form with some fields already filled in.

1. Open a form in [Google Forms](#) .
2. In the top right, click More .
3. Choose **Get pre-filled link**.
4. Fill in any answer fields you want to pre-populate.
5. Click **Submit**.
6. To send the pre-populated form to respondents, copy and send the link at the top.

Documentation  
is wonderful!

<https://support.google.com/docs/answer/2839588>

QUESTIONS    RESPONSES

## Example Form

Form description


### Multiple Choice

Option 1





Option 2

### Short Answer:


Short answer text

-  Undo



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-  Make a copy
-  Move to trash
-  Get pre-filled link
-  Print

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-  Add collaborators...

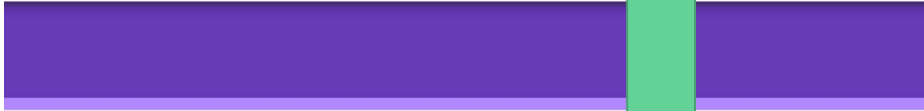
---

-  Script editor...
-  Add-ons...



Share the link to this form with your pre-filled responses.

<https://docs.google.com/forms/d/e/1FAIpQLSc2W2N4-f5s2NMNWwpBhqSftUuYn9>



Answer questions you want to pre-fill, then click submit.

## Example Form

Multiple Choice

- Option 1
- Option 2

Short Answer:

PreFilled!

**SUBMIT**

[https://docs.google.com/forms/d/e/1FAIpQLSc2W2N4-f5s2NMNWwpBhqSftUuYn9ZxfeQ8B3GrC\\_g8OTYmtw/viewform?entry.693600165=PreFilled!](https://docs.google.com/forms/d/e/1FAIpQLSc2W2N4-f5s2NMNWwpBhqSftUuYn9ZxfeQ8B3GrC_g8OTYmtw/viewform?entry.693600165=PreFilled!)

[https://docs.google.com/forms/d/e/1FAIpQLSc2W2N4-f5s2NMNWwpBhqSftUuYn9ZxfeQ8B3GrC\\_g8OTYmtw/viewform?entry.693600165=Change%20the%20URL](https://docs.google.com/forms/d/e/1FAIpQLSc2W2N4-f5s2NMNWwpBhqSftUuYn9ZxfeQ8B3GrC_g8OTYmtw/viewform?entry.693600165=Change%20the%20URL)

## Example Form

Multiple Choice

- Option 1
  - Option 2
- Short Answer:

PreFilled!



SUBMIT

Never submit passwords through Google Forms.

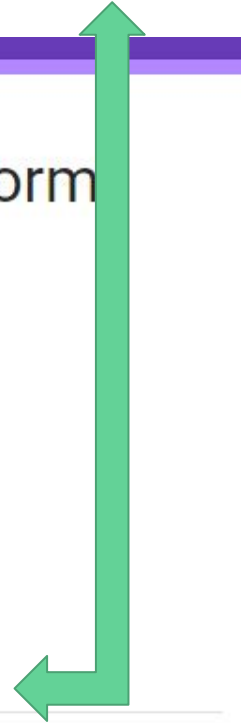
## Example Form

Multiple Choice

- Option 1
- Option 2

Short Answer:

Change the URL



	A	B	C
1	The	Presentation	
2			
3		ThePresentation	=concatenate(A1,B1)
4		ThePresentation	=A1&B1
5		The Presentation	=A1&" "&B1

# The power of &

Appending strings to one another.

A1 is =The

B1 is =Presentation

=concatenate(a1,b1)

Results: ThePresentation

Or =a1&b1

Results: ThePresentation

Or =a1&" "&b1

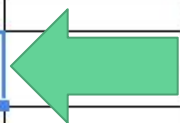
Results: The Presentation

# Library titles

File Edit View Insert Format Data Tools Form Add-ons Help Last edit was 5 days ago

fx =HYPERLINK("https://docs.google.com/forms/d/e/1FAIpQLSe4motq2ETvLCB1F5F080060wxrBJPVo2egIiuXu299xChAqw/viewform?entry.347228610="&D80&"&en

	B	C	D	E	H
1	Vote	SUGGESTED CUT	Title	ISSN	Library Holdings
73	<a href="#">Vote</a>	XXX	C R B COMMODITY YEARBOOK SEE NOTE	1076-2906	UMSL Libraries Print Journals: - 1994 - present This is the d
74	<a href="#">Vote</a>		C R C HANDBOOK OF CHEMISTRY AND PHYSICS SEE NOTE	0147-6262	UMSL Libraries Print Journals: - 1977(58th ed) - PRESENT T option.
75	<a href="#">Vote</a>	XXX	CANADIAN ALMANAC AND DIRECTORY SEE NOTE	0068-8193	UMSL Libraries Print Journals: - 1979 - PRESENT This is the
76	<a href="#">Vote</a>		CATALOGING SERVICES BULLETIN CUMULATIVE INDEX		No ISSN match, check LINK
77	<a href="#">Vote</a>		CHILD ABUSE AND NEGLECT IN MISSOURI SEE NOTE		UMSL Library Catalog: - 1988 - 2003 See NOTE
78	<a href="#">Vote</a>		CHILDREN'S SERVICES MANAGEMENT REPORT SEE NOTE		No ISSN match, check LINK
79	<a href="#">Vote</a>		CHINA TODAY SEE NOTE	1005-958x	No ISSN match, check LINK
80	<a href="#">Vote</a>		CHOICE	0009-4978	UMSL Libraries Print Journals: - v.1:no.1(1964) - PRESENT T option.  IIMSI Libraries Print Journals: - v.28:no.1(1945) - PRESENT





# Prefilled Vote Link

Hyperlinks in sheets:

<https://support.google.com/docs/answer/3093313?hl=en>

Docs editors Help

## HYPERLINK

Creates a hyperlink inside a cell.

### Sample Usage

```
HYPERLINK("http://www.google.com/","Google")
```

```
=HYPERLINK("https://docs.google.com/forms/d/e/1FAIpQLSe4motq2ETvLCB1F5F08006OwxrBJPVo2egIiuXu299xChAqw/viewform?entry.347228610="&D80&"&entry.1223291224=Cut&entry.1191583565", "Vote")
```

## Library Resources

\* Required

Your Initials \*

Your answer

This is the title

CHOICE

Cut Keep

Cut

Keep

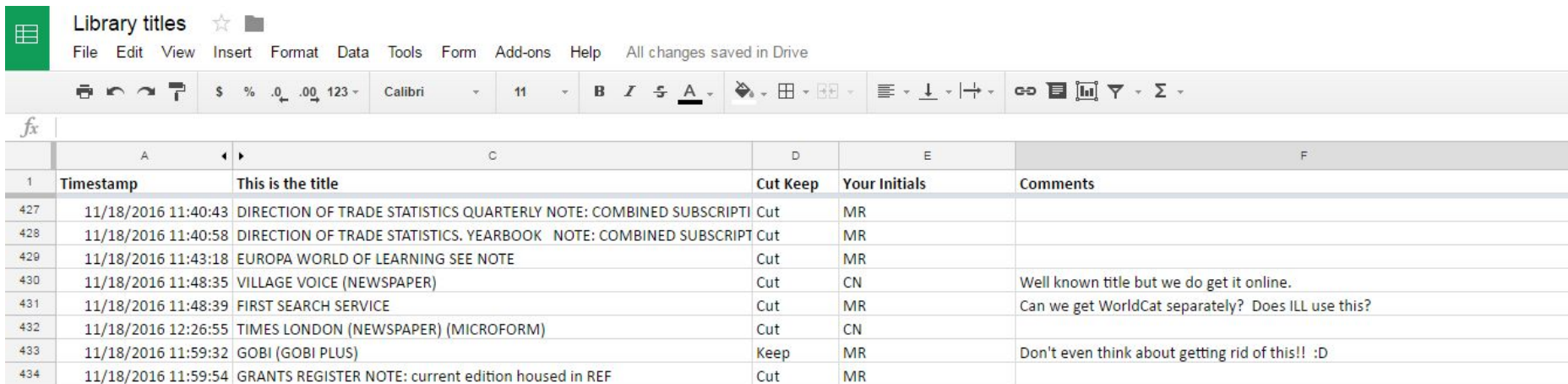
Comments

Your answer

SUBMIT

Never submit passwords through Google Forms.

Results from the form look like this:



The screenshot shows a Google Sheets spreadsheet with the following data:

	A	C	D	E	F
1	Timestamp	This is the title	Cut Keep	Your Initials	Comments
427	11/18/2016 11:40:43	DIRECTION OF TRADE STATISTICS QUARTERLY NOTE: COMBINED SUBSCRIPTI	Cut	MR	
428	11/18/2016 11:40:58	DIRECTION OF TRADE STATISTICS. YEARBOOK NOTE: COMBINED SUBSCRIPT	Cut	MR	
429	11/18/2016 11:43:18	EUROPA WORLD OF LEARNING SEE NOTE	Cut	MR	
430	11/18/2016 11:48:35	VILLAGE VOICE (NEWSPAPER)	Cut	CN	Well known title but we do get it online.
431	11/18/2016 11:48:39	FIRST SEARCH SERVICE	Cut	MR	Can we get WorldCat separately? Does ILL use this?
432	11/18/2016 12:26:55	TIMES LONDON (NEWSPAPER) (MICROFORM)	Cut	CN	
433	11/18/2016 11:59:32	GOBI (GOBI PLUS)	Keep	MR	Don't even think about getting rid of this!! :D
434	11/18/2016 11:59:54	GRANTS REGISTER NOTE: current edition housed in REF	Cut	MR	

- Timestamp of when the form submitted
- Title : what resource is being commented on
- Vote to keep or cut the resource
- Who is voting (librarian initials)
- Any additional comments (optional)

# Pivot Table

A tool to summarize and explore data interactively.

The data collected consists of who voted (librarian initials), the vote to keep or cut, and any comments that were made about the resources.

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Print Undo Redo Paste \$ % .0 .00 123 Arial 10 B I A More ^

	A	B	C	D	E	F	G	H
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

**Report Editor** X

Sheet1!A1:F4 - Edit range...

Rows - Add field

Columns - Add field

Values - Add field

Filter - Add field

Resource Title	Comments	Initials	Votes
B	C	D	E
CANADIAN ALMANAC AND DIRECTORY SEE NOTE		CB	Cut
		Hmm	Cut
		KR	Cut
		LS	Cut
		MD	Cut
		MR	Cut
		RM	Cut
CATALOGING SERVICES BULLETIN CUMULATIVE INDEX		TN	Cut
		KR	Cut
CHILD ABUSE AND NEGLECT IN MISSOURI SEE NOTE	If this is ongoing and if cataloging doesn't need.	MD	Cut
		KR	Cut
CHILDREN'S SERVICES MANAGEMENT REPORT SEE NOTE	Keep if no cost to us	KR	Keep
	Keep if no cost to us	KR	Keep
CHINA TODAY SEE NOTE		KR	Cut
CHOICE		CB	Keep
	does anyone use this? I sure don't.	MR	Cut
	I still look at the issues, as do some faculty (maybe "did"?)	CJD	Keep
	Sure wish we could get the online version!	KR	Keep
CITY JOURNAL (ST. LOUIS) SEE NOTE		KR	Keep
	Cut the print, as it looks like we have access to the online	CB	Keep
COLLEGE AND RESEARCH LIBRARIES NEWS		KR	Cut
		CB	Keep
		MD	Cut
	As long as we keep access to the online. cut		

**Report Editor** ✕

'Vote Entries'!A1:G786 -  
[Edit range...](#)

Rows - Add field

**Group by:** Title ✕

Order: Ascending ▾

Sort by: Title ▾

Show totals

**Group by:** Comments ✕

Order: Ascending ▾

Sort by: Comments ▾

Show totals

**Group by:** Initials ✕

Order: Ascending ▾

Sort by: Initials ▾

Show totals

**Group by:** Cut or Keep ✕

Order: Ascending ▾

Sort by: Cut or Keep ▾

Show totals

The data collected helped  
decide what resources to keep  
and what to cut.

*Our final results could  
also be sorted by cost.*



Public  
Service  
Desk  
Statistics

# The Challenge

Going from paper to electronic statistics collection.

It started with paper.

**PSD Statistics**  
 Week of July 5-10, 2016 Summer

Time	Monday			Tuesday			Wednesday			Thursday			Friday			Saturday					
	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref			
8:00am to 10:00am	HOLIDAY											X				1pm to 4:30pm					
10:00am to 1:00pm										X			X					4:30pm to 8pm			
1:00pm to 4:00pm													X		X				Phone		
4:00pm to 7:00pm															4:00pm to 5:00pm						
7:00pm to 9:00pm	HOLIDAY																				
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Mon.	Tues.	Weds.	Thurs.	Fri	Sun.									
LRC ?'s	HOLIDAY																				
	Ref.	Circ.	Gen.	HOLIDAY				X													

X = Extended reference: transactions of 5 minutes or longer

The sheets were collected and counted up (by hand). Later that data was compiled into a variety of tables answering different questions.

Comparison of REF stats FY 2014-14 and FY 2015-16				
	FY 2014-15		FY 2015-16	
	REF	EXT REF	REF	EXT REF
July	151	56	144	114
August	217	62	180	44
September	343	188	319	114
October	493	208	460	158
November	439	155	283	128
December	235	88	186	82
January	320	77	172	104
February	309	150	200	139
March	359	118	195	156
April	450	157	245	170
May	236	137	102	59
June	163	63	91	44
<b>TOTAL</b>	<b>3008</b>	<b>1008</b>	<b>2577</b>	<b>1312</b>

# PSD Statistics

Week of JULY 5 - 10, 2016

Summer

Time	Monday			Tuesday			Wednesday			Thursday			Friday			Sunday										
	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref								
8:00am to 10:00am	<b>HOLIDAY</b>												X				1pm	to	4:30pm							
10:00am to 1:00pm									X			X				4:30pm	to	8pm								
1:00pm to 4:00pm						X					X															
4:00pm to 7:00pm																4:00pm	to	5:00pm								
7:00pm to 9:00pm																<b>Phone</b>										
	Monday	Tuesday	Wednesday	Thursday	Friday	Sunday											Mon.	Tues.	Weds.	Thurs.	Fri	Sun.				
LRC ?'s	<b>HOLIDAY</b>												Gen.	<b>HOLIDAY</b>												
																		Circ.		X						
																			Ref.							

X = Extended reference: transactions of 5 minutes or longer

We needed to collect equivalent information as we had with paper.

This collection form had to be easy to use.

## Public Service Desk Statistics

View collected stats  
[https://docs.google.com/spreadsheets/d/1eJ5fGF\\_6Eclm7iPHYkC6kLpV6BiiwRST51oJsoEMQU/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1eJ5fGF_6Eclm7iPHYkC6kLpV6BiiwRST51oJsoEMQU/edit?usp=sharing)

\* Required

**Make a mistake? Click F5 to refresh the page and start over.**

Where \*

	Desk	Phone
	<input type="radio"/>	<input type="radio"/>

What \*

	Circulation	Reference	General	LRC
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5 minutes or beyond

Choose ▾

**SUBMIT**

5 minutes or beyond

Choose

5

10

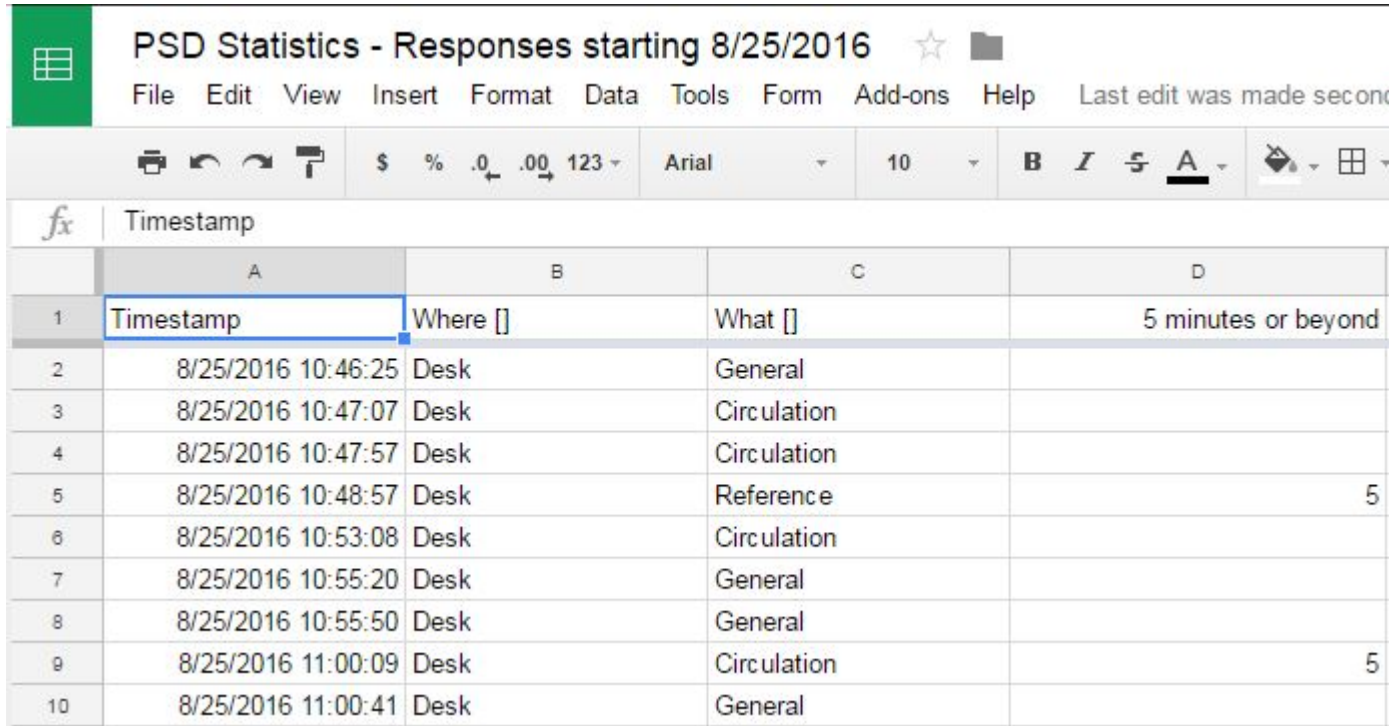
15

20

25

er created nor end

A form with three questions gives us four data points.



PSD Statistics - Responses starting 8/25/2016

File Edit View Insert Format Data Tools Form Add-ons Help Last edit was made second

fx | Timestamp

	A	B	C	D
1	Timestamp	Where []	What []	5 minutes or beyond
2	8/25/2016 10:46:25	Desk	General	
3	8/25/2016 10:47:07	Desk	Circulation	
4	8/25/2016 10:47:57	Desk	Circulation	
5	8/25/2016 10:48:57	Desk	Reference	5
6	8/25/2016 10:53:08	Desk	Circulation	
7	8/25/2016 10:55:20	Desk	General	
8	8/25/2016 10:55:50	Desk	General	
9	8/25/2016 11:00:09	Desk	Circulation	5
10	8/25/2016 11:00:41	Desk	General	

# Not a lot of information, can really tell you a lot

Monthly, weekly and yearly totals for reference, circulation, general inquiries, as occurred at the desk and on the phone.

The number of minutes extended sessions lasted, and when they occurred.

The paper could tell the story of what happened in a day and in a week. I wanted the data collected electronically to tell these same stories.

# When - Where - What

# PSD Statistics - Responses starting 8/25/2016

File Edit View Insert Format Data Tools Form Add-ons Help Last edit was made second

fx \$ % .0\_ .00 123 Arial 10 B I A

	A	B	C	D
1	Timestamp	Where []	What []	5 minutes or beyond
2	8/25/2016 10:46:25	Desk	General	
3	8/25/2016 10:47:07	Desk	Circulation	
4	8/25/2016 10:47:57	Desk	Circulation	
5	8/25/2016 10:48:57	Desk	Reference	5
6	8/25/2016 10:53:08	Desk	Circulation	
7	8/25/2016 10:55:20	Desk	General	
8	8/25/2016 10:55:50	Desk	General	
9	8/25/2016 11:00:09	Desk	Circulation	5
10	8/25/2016 11:00:41	Desk	General	

## PSD Statistics

Week of July 5 - 10, 2016

Time	Monday			Tuesday			Wednesday			Thursday			Friday		
	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref
8:00am to 10:00am	HOLIDAY														
10:00am to 1:00pm															
1:00pm to 4:00pm	HOLIDAY														
4:00pm to 7:00pm															
7:00pm to 9:00pm	Phone														
	Monday	Tuesday	Wednesday	Thursday	Friday	Sunday	Mon.	Tues.	Weds.	Thurs.	Fri	Sun.			
LRC ?'s	HOLIDAY														

X = Extended reference: transactions of 5 minutes or longer



# Combine: Where, What and say if it was extended.

PSD Statistics - Responses starting 8/25/2016

File Edit View Insert Format Data Tools Form Add-ons Help All changes saved in Drive

$f_x$  =ARRAYFORMULA(if(row(A:A)=1,"Task - Ext",IF(C:C="", "", IF(D:D="", B:B&" "&C:C, B:B&" "&C:C&" Ext"))))

	A	B	C	D	E
1	Timestamp	Where []	What []	5 minutes or beyond	Task - Ext
2	8/25/2016 10:46:25	Desk	General		Desk General
3	8/25/2016 10:47:07	Desk	Circulation		Desk Circulation
4	8/25/2016 10:47:57	Desk	Circulation		Desk Circulation
5	8/25/2016 10:48:57	Desk	Reference	5	Desk Reference Ext
6	8/25/2016 10:53:08	Desk	Circulation		Desk Circulation
7	8/25/2016 10:55:20	Desk	General		Desk General
8	8/25/2016 10:55:50	Desk	General		Desk General

$f_x$  =ARRAYFORMULA(if(row(A:A)=1,"Task - Ext",IF(C:C="", "", IF(D:D="", B:B&" "&C:C, B:B&" "&C:C&" Ext"))))

IF(D:D="", B:B&" "&C:C, B:B&" "&C:C&" Ext")

# **This is power.**

It is intimidating. Luckily there is a lot of documentation.

# Helpful documentation!

Functions :

<https://support.google.com/docs/table/25273>

If :

<https://support.google.com/docs/answer/3093364>

Arrayformula :

<https://support.google.com/docs/answer/3093275>

## ARRAYFORMULA

Enables the display of values returned from an array formula into multiple rows and/or columns and the use of non-array functions with arrays.

### Sample Usage

```
ARRAYFORMULA(SUM(IF(A1:A10>5, A1:A10, 0)))
```

```
ARRAYFORMULA(A1:C1+A2:C2)
```

## Docs editors Help



DOCS EDITORS

FORUM

## IF

Returns one value if a logical expression is `TRUE` and another if it is `FALSE`.

### Sample Usage

```
IF(A2 = "foo", "A2 is foo")
```

```
IF(A2, "A2 was true", "A2 was false")
```

```
IF(TRUE, 4, 5)
```

### Syntax

```
IF(logical_expression, value_if_true, value_if_false)
```

- `logical_expression` - An expression or reference to a cell containing an expression that represents some logical value, i.e. TRUE or FALSE.
- `value_if_true` - The value the function returns if `logical_expression` is TRUE.
- `value_if_false` - **[ OPTIONAL - blank by default ]** - The value the function returns if `logical_expression` is FALSE.

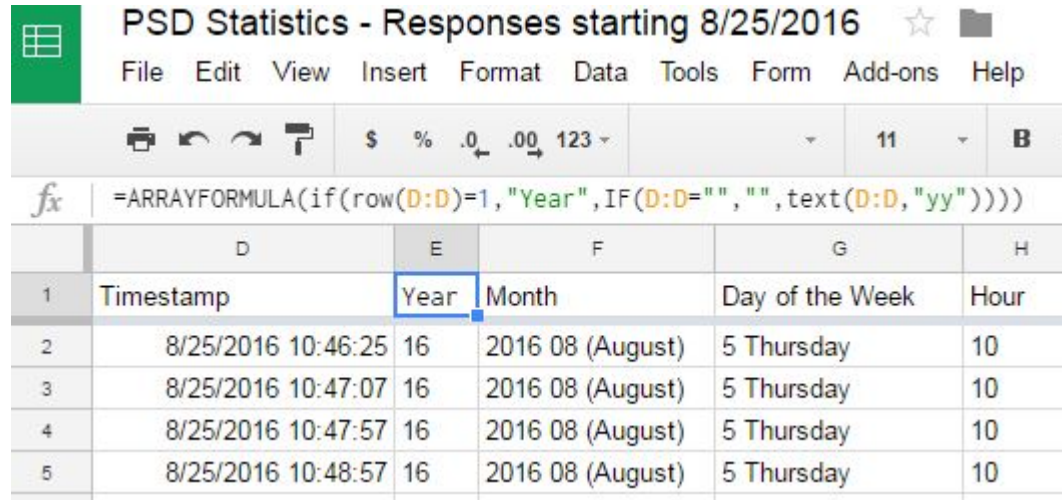
Timestamp:

Year

Month

Day

Hour



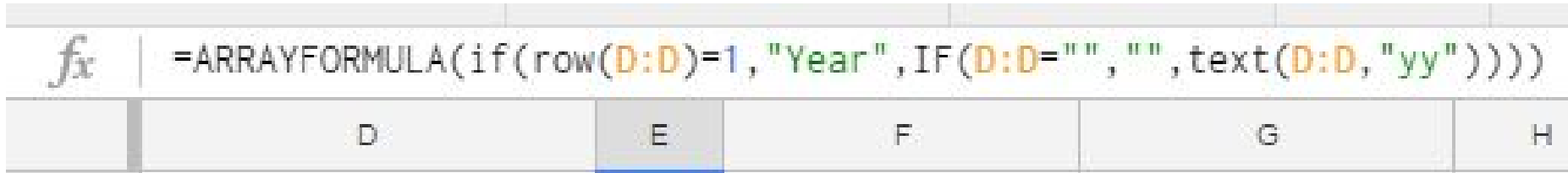
PSD Statistics - Responses starting 8/25/2016

File Edit View Insert Format Data Tools Form Add-ons Help

$fx$  =ARRAYFORMULA(if(row(D:D)=1,"Year",IF(D:D="", "",text(D:D,"yy"))))

	D	E	F	G	H
1	Timestamp	Year	Month	Day of the Week	Hour
2	8/25/2016 10:46:25	16	2016 08 (August)	5 Thursday	10
3	8/25/2016 10:47:07	16	2016 08 (August)	5 Thursday	10
4	8/25/2016 10:47:57	16	2016 08 (August)	5 Thursday	10
5	8/25/2016 10:48:57	16	2016 08 (August)	5 Thursday	10

An array formula allows sheets to automagically extract the year from the timestamp for every entry to the form, including new entries.



$fx$  =ARRAYFORMULA(if(row(D:D)=1,"Year",IF(D:D="", "",text(D:D,"yy"))))

D	E	F	G	H
---	---	---	---	---

For the first row 'Year', if the cell is empty stay empty, otherwise extract the year from timestamp (last 2 digits).

IF(D:D="", "",text(D:D,"yy"))

# Thank goodness for documentation!

Text can be manipulated in a lot of ways in google sheets

Find out more: <https://support.google.com/docs/answer/3094139?hl=en>



Search Google Docs editors Help

Docs editors Help

## TEXT

Converts a number into text according to a specified format.

### Sample Usage

`TEXT(1.23,"$0.00")`

`TEXT(A2,"#.###")`

`TEXT(24,"#.0?")`

`TEXT(DATE(1969,7,20),"yyyy-MM")`

### Syntax

`TEXT(number, format)`

- **number** - The number, date, or time to format.
- **format** - The pattern by which to format the number, enclosed in quotation marks.
  - `0` forces display of zeros if a number has fewer digits than the format specifies. For example, `TEXT(12.3,"000.00")` produces `012.30`. Numbers which have more digits to the right of the decimal point than the pattern are rounded to the indicated number of places. For example, `TEXT(12.305,"00.00")` results in `12.31`.
  - `#` is similar to `0` but does not force the display of zeros on either side of the decimal point. For example, `TEXT(12.3,"###.##")` produces `12.3`.

### Text

Google spreadsheets function list

ARABIC

CHAR

CODE

CONCATENATE

DOLLAR

EXACT

FIND

FIXED

JOIN

LEFT

LEN

LOWER

MID

PROPER

REGEXEXTRACT

REGEXMATCH

- **TEXT** supports the following date and time patterns:
  - `d` for the day of the month as one or two digits.
  - `dd` for the day of the month as two digits.
  - `ddd` for the short name of the day of the week.
  - `dddd` for the full name of the day of the week.
  - `m` for the month of the year as one or two digits or the number code is provided with hours or seconds as part of a time.
  - `mm` for the month of the year as two digits or the number of provided with hours or seconds as part of a time.
  - `mmm` for the short name of the month of the year.
  - `mmmm` for the full name of the month of the year.
  - `mmmmm` for the first letter in the month of the year.
  - `yy` for the year as two digits.
  - `yyyy` for the year as four digits.

# Total number of interactions

	A	B	C	D	E	F	G	H	I
		Desk Circulation	Desk General	Desk LRC	Desk Reference	Phone Circulation	Phone General	Phone LRC	Phone Reference
2016 08 (August)		508	311	38	80	10	20		12
2016 09 (September)		2099	1189	100	358	29	71	2	43
2016 10 (October)		2117	836	85	293	35	47	5	41
2016 11 (November)		1492	510	47	255	28	40	2	33
2016 12 (December)		1164	402	44	147	22	43	4	19
2017 01 (January)		940	392	49	152	27	36	1	41
2017 02 (February)		1175	477	25	167	22	25	1	34
Grand Total		9495	4117	388	1452	173	282	15	223

Both regular and extended inquires.

The Rows are Month,

Columns are Tasks

The values displayed are the 'counted' sum of those tasks.

**Report Editor** ✕

Responses!B:N - [Edit range...](#)

Rows - [Add field](#)

**Group by: Month** ✕

Order: Ascending ▾

Sort by: Month ▾

Show totals

**Columns - Add field**

**Group by: Task** ✕

Order: Ascending ▾

Sort by: Task ▾

Show totals

**Values - Add field**

**Display: Task** ✕

Summarize by: COUNTA ▾

# Total number of interactions

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
		Desk Circulation	Ext	Desk General	Ext	Desk LRC	Ext	Desk Reference	Ext	Phone Circulation	Ext	Phone General	Ext	Phone LRC	Phone Reference	Ext
3	2016 08 (August)	484	24	307	4	37	1	50	30	8	2	20			7	5
4	2016 09 (September)	2035	64	1177	12	97	3	229	129	23	6	66	5	2	21	22
5	2016 10 (October)	2081	36	828	8	82	3	162	131	31	4	44	3	5	21	20
6	2016 11 (November)	1470	22	509	1	47		134	121	25	3	38	2	2	13	20
7	2016 12 (December)	1147	17	390	12	42	2	86	61	22		42	1	4	14	5
8	2017 01 (January)	912	28	381	11	46	3	96	56	21	6	34	2	1	22	19
9	2017 02 (February)	1151	24	469	8	25		105	62	17	5	24	1	1	17	17
10	Grand Total	9280	215	4061	56	376	12	862	590	147	26	268	14	15	115	108

**Report Editor** [X]

Responses!B:N - [Edit range...](#)

Rows - [Add field](#)

**Group by: Month** [X]

Order: Ascending ▾

Sort by: Month ▾

Show totals

Columns - [Add field](#)

**Group by: Task** [X]

Order: Ascending ▾

Sort by: Task ▾

Show totals

**Group by: Task - Ext** [X]

Order: Ascending ▾

Sort by: Task - Ext ▾

Show totals

Values - [Add field](#)

**Display: Task** [X]

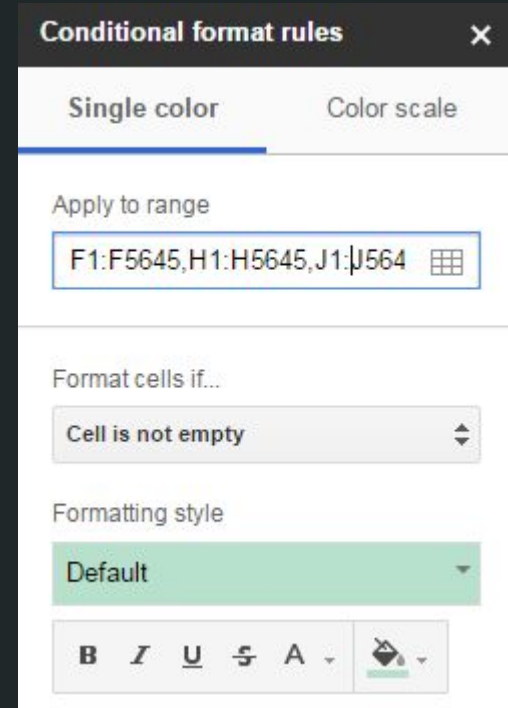
Summarize by: COUNTA ▾

## Regular and extended inquires presented separately

The Rows are Month,  
Columns are Tasks & Tasks Extended (separate columns)  
The values displayed are the 'counted' sum of those tasks.

Both the pivot table and the colors are automatically generated!

Conditional format rules.

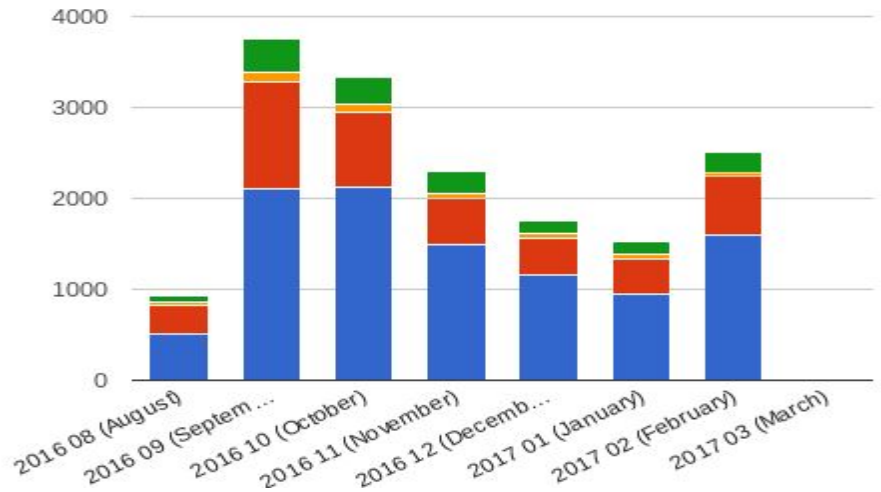




# Pivot Tables Make Pretty Graphs

A	B	C	D	E
	Desk Circulation	Desk General	Desk LRC	Desk Reference
2016 08 (August)	508	311	38	80
2016 09 (September)	2099	1189	100	358
2016 10 (October)	2117	836	85	293
2016 11 (November)	1492	510	47	255
2016 12 (December)	1164	402	44	147
2017 01 (January)	940	392		
2017 02 (February)	1600	647		
2017 03 (March)		1		
Grand Total	9920	4288		

**Desk Circulation, Desk General, Desk LRC and Desk Reference**



# PSD Statistics

Week of JULY 5 - 10, 2016

Summer

Time	Monday			Tuesday			Wednesday			Thursday			Friday			Saturday			Sunday			
	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref	Gen	Circ	Ref				
8:00am to 10:00am	<b>HOLIDAY</b>											X				1pm	to	4:30pm				
10:00am to 1:00pm									X			X				4:30pm	to	8pm				
1:00pm to 4:00pm												X										
4:00pm to 7:00pm																4:00pm	to	5:00pm				
7:00pm to 9:00pm																			<b>Phone</b>			
	Monday			Tuesday			Wednesday			Thursday			Friday			Saturday						
LRC ?'s	<b>HOLIDAY</b>															Gen.	<b>HOLIDAY</b>					
																Circ.		X				
																Ref.						

X = Extended reference: transactions of 5 minutes or longer

# At the desk, showing day and hour and if extended (by how many 5 minute intervals)

	B	C	D	E	F	G	H	I	J	K	L
				Desk Circulation	Ext	Desk General	Ext	Desk LRC	Ext	Desk Reference	Ext
1846	2016	08/31 Wed	21	3		1					
1847			20	9		4				1	
1848			19	4							
1849			18	7		1				2	2
1850			17	8		10					
1851			16	1	1	3		1			
1852			15	5		9				1	1
1853			14	12		1	1	3			1
1854			13	14	1	4		1			1
1855			12	28		5		2		3	
1856			11	13		1		2		1	1
1857			10	7		1					
1858			09	4		2				1	1
1859			08	4		2					1
1860			07	4				1			
1861	08/31 Wed Total			123	2	44	1	10		9	8
1862		08/30 Tue	22			2					
1863			21		1						
1864			20	6		2		1			
1865			19	5		2					
1866			18	1		5	1				1
1867			17	9		5					
1868			16	13	1	9		1		6	
1869			15	12	1	6		1		3	
1870			14	9	1	3					
1871			13	14	1	6		3		1	
1872			12	7		1		1			
1873			11	4	1	6					1
1874			10	11		3		1	1		2

Report Editor

Responses!B:N - Edit range...

Rows - Add field

Group by: Year

Order: Descending

Sort by: Year

Show totals

Group by: Month

Order: Descending

Sort by: Month

Show totals

Group by: Month Date Day

Order: Descending

Sort by: Month Date Day

Show totals

Group by: Hour

Order: Descending

Sort by: Hour

Show totals

Columns - Add field

Group by: Task

Columns - Add field

Group by: Task

Order: Ascending

Sort by: Task

Show totals

Group by: Task - Ext

Order: Ascending

Sort by: Task - Ext

Show totals

Values - Add field

Display: Task

Summarize by: COUNTA

Filter - Add field

Filter: Task

Show: 4 items

Filter: [Select all](#) - [Clear](#)

(Blanks)

Desk Circulation

Desk General

Desk LRC

Desk Reference

8/25/2016 - today

Over 16,000 entries

Automatically Generated  
Real Time Patron Interaction  
Statistics

# Google Sheets & Google Forms for Libraries

Thank you  
for your  
attention!

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By Helena Marvin

[marvinh@umsl.edu](mailto:marvinh@umsl.edu)

University of Missouri-St. Louis

Reference / Institutional Repository Librarian

Session 3A

March 1st, 2017

# Learning Resources

[Introduction to Spreadsheets and Models - University of Pennsylvania ...](#)

<https://www.coursera.org/learn/wharton-introduction-spreadsheets-models>

A free MOOC (massive open online course) useful for getting to know the power of spreadsheets.

[Text Functions in Excel - EASY Excel Tutorial](#)

[www.excel-easy.com/functions/text-functions.html](http://www.excel-easy.com/functions/text-functions.html)

An introduction to text basic manipulation in excel.

[Google Sheets Lesson 3 – ARRAYFORMULA – Teacher Paul](#)

[www.teacherpaul.org/3063](http://www.teacherpaul.org/3063)

Paul has great video tutorials for using arrayformulas with google form results.

[Learn To Use PivotTables - Build Reports, Analyze Data & More](#)

[www.lynda.com/PivotTables](http://www.lynda.com/PivotTables)

If your library or a local library you're a patron at has access to Lynda.com it is an amazing resource.

[Google Spreadsheets | Charts | Google Developers](#)

<https://developers.google.com/chart/interactive/docs/spreadsheets>

Making charts with google spreadsheets.

Presentation available online at

<https://works.bepress.com/LenaMarvin/5/>