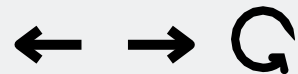




COMPSTAT



MS Office Automation

# EXCELErate Your COMPSTAT

**IACA 2024**

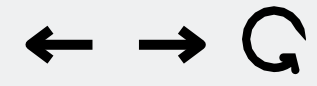
---

<https://tinyurl.com/bddp5427>



COMPSTAT

Presenter



🔍 Introductions



**Ruby Zheng**

NICE

Solutions Engineer



COMPSTAT

Survey



← → ↻ 🔍 <https://www.surveymonkey.com/r/9VSDK7X>



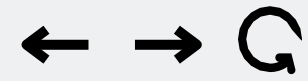
**<https://www.surveymonkey.com/r/9VSDK7X>**



COMPSTAT

Presenters

Problem



Manual Stuff Takes Forever

Southern Software RMS - [Incident Search]

File Tools Window

General | Offense | Offender | Victim | Arrest | Vehide | Property | Drug | Others Involved | Witness | Supplement

Field To Search:

- Approval Log - Approved By ID
- Approval Log - Approved By Name
- Approval Log - Approved Report
- Approval Log - Date Approved
- Approval Log - Report Routed
- Approval Log - Time Approved

Add Criteria...  
Add 'Or' Criteria...

Search Now  
Clear Search Results

Current Search Criteria:

Zoom Criteria...  
Delete Selected Criteria  
Delete All Criteria

Search Results:

Incident Number	Incident Date	Location	Primary Victim	Primary Offense
-----------------	---------------	----------	----------------	-----------------

1. View   2. Supplement   3. View Narrative...   4. View Properties...



Citywide



Chief Jim Gordon

CRIME STATISTICS for week ending 01-Jul-21												
	28 day			90 day			YTD			3 yr YTD trend		
	6/4/21 to 7/1/21	3 YEAR AVG OF 28 DAYS	% CHANGE	4/3/21 to 7/1/21	3 YEAR AVG OF 90 DAYS	% CHANGE	YTD 2021	YTD 2020	% CHANGE	YTD 2021	3 YEAR YTD AVG	% CHANGE
<b>Violent Crimes</b>												
Homicide*	6	11	-45%	23	15	56.9%	47	32	47%	47	31	0.5
Rape	39	46	-15%	144	144	0%	266	289	-8%	266	284	-6%
Robbery	73	79	-7%	247	246	0%	489	466	5%	489	1487	-67%
Aggravated Assault	34	36	-6%	116	111	4%	227	0	↑ 227	227	159	43%
<b>Total Violent Crime</b>	152	172	-12%	530	516	3%	1029	787	31%	1029	1961	-48%
<b>Property Crimes</b>												
Burglary / B&E	94	87	8%	314	289	9%	624	577	8%	624	1771	-65%
Larceny	335	325	3%	1032	1042	-1%	2026	1997	1%	2026	2080	-3%
Auto Theft	113	102	11%	372	1037	-64%	716	718	0%	716	698	3%
<b>Total Property Crime</b>	542	514	6%	1718	2368	-27%	3366	3292	2%	3366	4549	-26%
<b>Total Part 1 Crime</b>	694	686	1%	2248	2884	-22%	4395	4079	8%	4395	6511	-32%

Statistics are based on the date reported. These statistics account for multiple offenses connected to one report. This is not an official offense count as defined by NIBRS.



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Presenters

Problem

Product

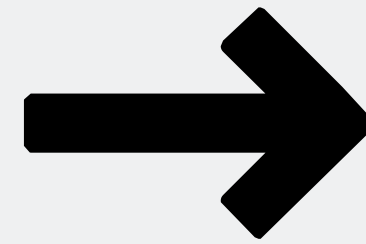
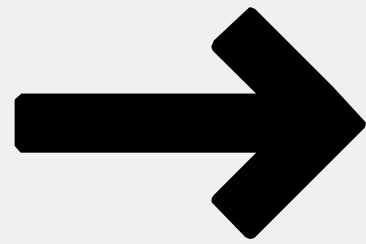
Solution



← → ↻ 🔍 MS Office Automation

# RMS

# ACCESS



# EXCEL





COMPSTAT

Presenters

Problem

Product

Solution

RMS



← → ↻ 🔍 Data Structure

- Accident
- Accident Approval Log
- Accident Assignment
- Accident DMV Export
- Accident DMV Export Success
- Accident Image
- Accident Offense
- Accident Property Damaged
- Accident Route
- Accident Route Pending
- Accident Unit
- Accident Unit Occupant
- Accident Unit Points Of Contact
- Accident Unit Restriction
- Accident Witness
- Act Log Event Traffic Stop
- Act Log Event Traffic Stop Passenger
- Activity Log
- Activity Log Event
- Activity Log Event Image
- Activity Log Event Others Involved
- Activity Log Image
- Activity Log Time
- Activity Log Vehicle
- Address MSAG
- Agency Case Number
- Agency Information
- Application Version Patch
- Attachment
- Attachment File
- Attachment File Link
- Auto Number
- Auto Number Block

Incident Num	Date Create	Time Create	Created By	Created By S	Created Sou	Last Update	Last Update	Last Update	Last Update
20220804001	8/4/2022	1:23:31 PM		000004432		1	8/4/2022	3:03:11 PM	000004432
20220804002	8/4/2022	12:19:20 PM		000008692		1	8/4/2022	12:19:20 PM	000008692
20220803006	8/3/2022	5:18:41 PM		000002693		1	8/3/2022	6:04:49 PM	000005258
20220803007	8/3/2022	5:55:04 PM		000007434		1	8/4/2022	10:06:52 AM	000005258
20220803008	8/3/2022	11:14:53 PM		000008782		1	8/4/2022	1:43:53 AM	000004017
20220803009	8/3/2022	8:11:57 PM		000003764		1	8/3/2022	8:11:57 PM	000003764
20220803010	8/3/2022	9:30:08 PM		000004816		1	8/4/2022	1:33:38 AM	000004017
20220803001	8/3/2022	10:09:05 AM		000007434		1	8/4/2022	10:13:33 AM	000007476
20220803002	8/3/2022	3:45:50 PM		000005839		1	8/3/2022	5:56:03 PM	000005258
20220803003	8/3/2022	1:12:22 PM		000002477		1	8/3/2022	1:12:22 PM	000002477
20220803004	8/3/2022	1:46:26 PM		000007434		1	8/3/2022	3:53:44 PM	000005258
20220803005	8/3/2022	5:03:16 PM		000005839		1	8/3/2022	6:12:10 PM	000005258
20220801008	8/2/2022	3:58:16 AM		000001119		1	8/2/2022	4:29:32 AM	000009874
20220802001	8/2/2022	1:51:51 AM		000007528		1	8/2/2022	4:25:06 PM	000004913
20220802002	8/2/2022	4:24:37 AM		000001119		1	8/2/2022	4:01:12 PM	000004913
20220802003	8/2/2022	8:52:41 AM		000009721		1	8/2/2022	8:52:41 AM	000009721
20220802004	8/2/2022	10:27:12 AM		000008977		1	8/2/2022	4:10:33 PM	000009721
20220802005	8/2/2022	2:26:13 PM		000008977		1	8/2/2022	4:17:43 PM	000009721
20220802006	8/2/2022	2:02:26 PM		000001658		1	8/3/2022	8:23:17 AM	000004913
20220802007	8/2/2022	2:43:06 PM		000008977		1	8/2/2022	4:31:57 PM	000009721
20220802008	8/2/2022	2:51:59 PM		000000383		1	8/4/2022	3:14:56 PM	000000551
20220802009	8/2/2022	4:48:02 PM		000008977		1	8/2/2022	5:51:15 PM	000009721
20220802010	8/2/2022	5:32:22 PM		000008977		1	8/4/2022	9:47:22 AM	000007476
20220731008	8/1/2022	2:51:07 AM		000001119		1	8/1/2022	11:28:28 AM	000004913
20220731010	8/1/2022	2:02:33 AM		000001119		1	8/1/2022	4:24:02 AM	000009874
20220801001	8/1/2022	1:45:05 AM		000004816		1	8/1/2022	4:47:08 AM	000009874
20220801002	8/1/2022	4:26:12 AM		000004816		1	8/1/2022	2:11:28 PM	000004983
20220801003	8/1/2022	1:06:52 PM		000005776		1	8/1/2022	2:43:27 PM	000004913
20220801004	8/1/2022	3:23:53 PM		000008977		1	8/2/2022	8:55:42 AM	000004913
20220801005	8/1/2022	4:52:09 PM		000008977		1	8/1/2022	4:52:09 PM	000008977
20220801006	8/1/2022	9:29:26 PM		000003740		1	8/2/2022	9:07:33 AM	000004913
20220801007	8/1/2022	10:06:52 PM		000002071		1	8/1/2022	10:06:52 PM	000002071
20220731009	7/31/2022	11:50:45 PM		000009272		1	8/1/2022	11:43:45 AM	000004913
20220730007	7/31/2022	2:12:08 AM		000009272		1	8/1/2022	10:18:32 AM	000004913
20220731001	7/31/2022	3:02:37 AM		000004816		1	8/2/2022	11:58:59 AM	000007476
20220731002	7/31/2022	7:32:10 PM		000009272		1	8/2/2022	3:52:10 PM	000004913
20220731003	7/31/2022	12:53:20 PM		000004432		1	7/31/2022	5:35:42 PM	000008165
20220731004	7/31/2022	4:04:59 PM		000002693		1	7/31/2022	5:37:57 PM	000008165
20220731005	7/31/2022	5:51:35 PM		000007434		1	8/1/2022	11:12:05 AM	000004913
20220731006	7/31/2022	10:01:24 PM		000008782		1	8/3/2022	6:18:56 PM	000005258

### • Database

- Collection of information that is related to a particular subject

### • Table

- Store data, list of fields with values for each record

### • Queries

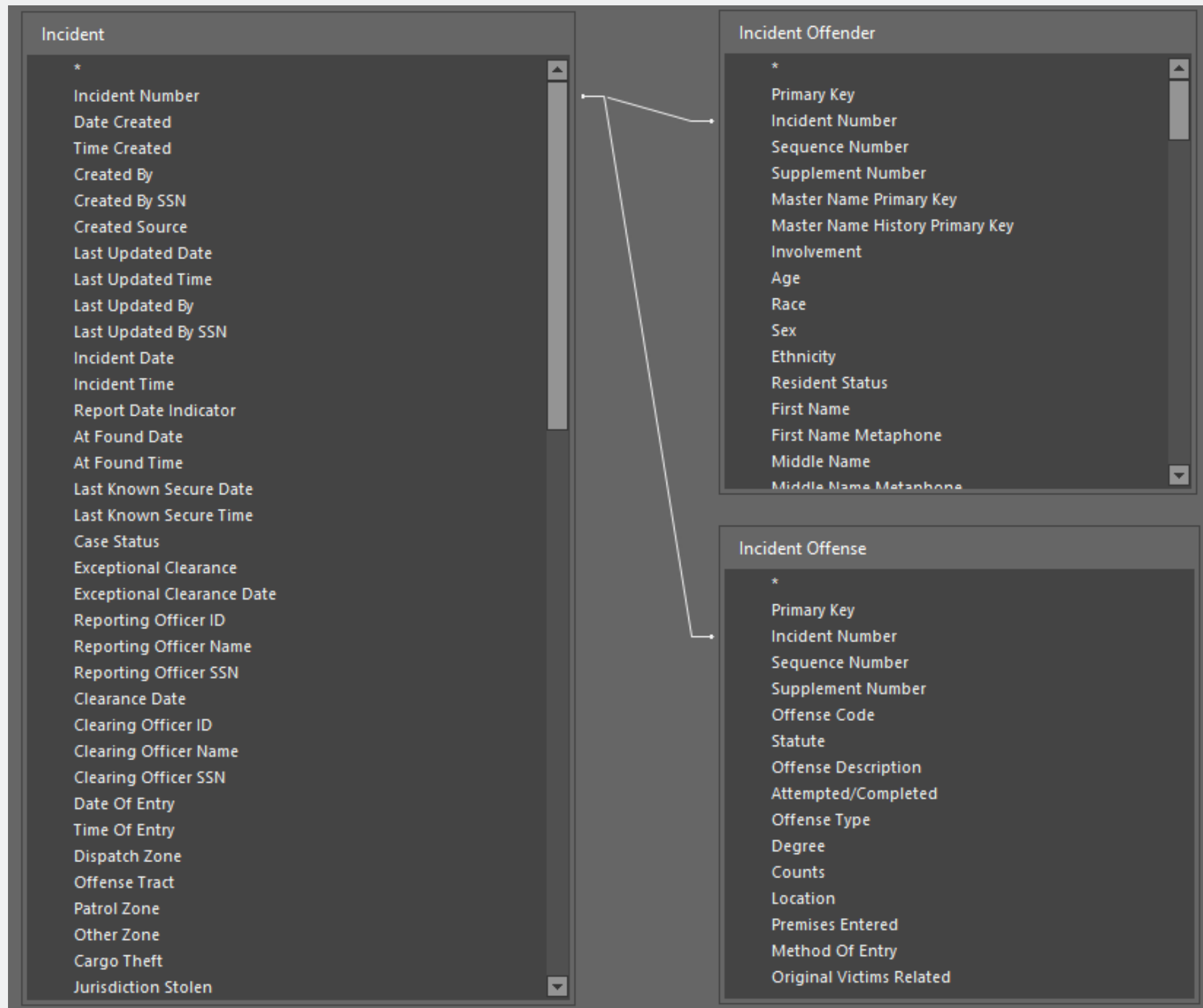
- Used to find and retrieve data

### • Forms

- View, add, and update data in tables

### • Reports

- Analyze or print data in a specific layout



- **Primary Key**

- Distinguishes one record from another within a table

- **One-to-One**

- Each record in the first table can only have one matching record in the second table
- Incident to Location

- **One-to-Many**

- Each record in the first table can have many matching records in the second table
- Incident to Offenses

- **Many-to-Many**

- Multiple records in the first table are associated with multiple records in the second table





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Presenters

Problem

Product

Solution

RMS



← → ↻ 🔍 Design View Query Criteria

- **Exactly match a value, "Homicide"**
- **Do not match a value, Not "Homicide"**
- **Contain the specified string, Like "\*Robbery\*"**
- **Match one of two values, "Homicide" Or "Robbery"**
- **Contain one of the values in a list of values, In("Homicide", "Rape", "Robbery", "Aggravated Assault")**
- **Contain values that fall within a date range, >=#1/1/2021# and <=#12/31/2021#**
- **Contain today's date, Date()**
- **Contain a date that fell during the last 7 days, Between Date() and Date()-6**



Microsoft  
Queries



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← → ↻ 🔍 Connections

The screenshot shows the Microsoft Excel ribbon with the 'Data' tab selected. The 'Queries & Connections' group is expanded, displaying the following options:

- From File
- From Database
  - From SQL Server Database
  - From Microsoft Access Database
  - From Analysis Services
  - From SQL Server Analysis Services Database (Import)
  - From Oracle Database
  - From IBM Db2 Database
  - From MySQL Database
  - From PostgreSQL Database
  - From Sybase Database
  - From Teradata Database
  - From SAP HANA Database
- From Azure
- From Online Services
- From Other Sources
- Combine Queries
- Launch Power Query Editor...
- Data Source Settings...
- Query Options

	A	B	C	D	E	F	G
1	Incident Number	Incident Date	Case Status	Offense Code	Statute	Attempted/Completed	Location
2	20190101006	1/1/2019 0:00	CO	23H	14-72	C	20
3	20190104007	1/4/2019 0:00	CO	23F	14-56	C	20
4	20190104012	1/4/2019 0:00	CE	23C	14-72.1	C	08
5	20190105003	1/5/2019 0:00	CE	23C	14-72.1	C	08
6	20190107001	1/7/2019 0:00	CO	240	14-72/AUTO	C	18
7	20190114008	1/14/2019 0:00	CO	23C	14-72A	C	08
8	20190116007	1/16/2019 0:00	CA	23C	14-72.1	C	08
9	20190118004	1/18/2019 0:00	CO	23C	14-72.1	C	23
10	20190118005	1/18/2019 0:00	CO	23H	14-72	C	14
11	20190121003	1/21/2019 0:00	CO	23C	14-72.1	C	24
12	20190123003	1/23/2019 0:00	CO	23F	14-56	C	14
13	20190123011	1/23/2019 0:00	I	220	14-51/FDF	C	20
14	20190124007	1/24/2019 0:00	CO	23F	14-72/LFA	C	20
15	20190128002	1/28/2019 0:00	CO	23F	14-72/LFA	C	18
16	20190129012	1/29/2019 0:00	CO	23F	14-56/LFA	C	18
17	20190130001	1/30/2019 0:00	CO	23H	14-72	C	25
18	20190131006	1/31/2019 0:00	CO	11A	14-27.2	C	13
19	20190201005	2/1/2019 0:00	CO	23F	14-56	C	20
20	20190201012	2/1/2019 0:00	CO	23F	14-56/LFA	C	21
21	20190201010	2/1/2019 0:00	CO	23H	14-72	C	08
22	20190205001	2/5/2019 0:00	CO	220	14-54A/NF	C	20
23	20190205006	2/5/2019 0:00	CO	23F	14-56	C	18
24	20190206010	2/6/2019 0:00	CO	23H	14-72	C	25
25	20190208001	2/8/2019 0:00	CO	23F	14-56	C	14
26	20190208004	2/8/2019 0:00	CO	23F	14-72/LFA	C	20
27	20190209006	2/9/2019 0:00	CO	23F	14-56	C	08
28	20190210007	2/10/2019 0:00	CA	23C	14-72.1	C	12
29	20190212002	2/12/2019 0:00	CO	23F	14-56/LFA	A	18
30	20190212009	2/12/2019 0:00	CO	23C	14-72.1	A	08
31	20190212007	2/12/2019 0:00	CO	23C	14-72.1	C	08
32	20190212011	2/12/2019 0:00	CO	23D	14-72/LFB	C	20
33	20190213016	2/13/2019 0:00	CO	23F	14-56	C	18
34	20190215006	2/15/2019 0:00	I	23C	14-72.1	C	24
35	20190217006	2/17/2019 0:00	CE	23H	14-72	C	20
36	20190216001	2/16/2019 0:00	CO	23H	14-113.9	C	08
37	20190224003	2/24/2019 0:00	CO	23C	14-72.1	C	24
38	20190225004	2/25/2019 0:00	CO	220	14-54A/NF	C	20
39	20190225009	2/25/2019 0:00	CA	23C	14-72.1	C	08
40	20190225006	2/25/2019 0:00	CO	220	14-54A/NF	C	06
41	20190303003	3/3/2019 0:00	I	23F	14-56/LFA	C	21
42	20190307007	3/7/2019 0:00	CO	23F	14-56/LFA	C	21
43	20190308007	3/8/2019 0:00	CE	23H	14-72	C	05
44	20190315004	3/15/2019 0:00	CO	220	14-54A/F	C	06
45	20190320002	3/20/2019 0:00	CA	23H	14-72	C	25
46	20190322001	3/21/2019 0:00	CO	23F	14-72/LFA	C	18
47	20190322009	3/22/2019 0:00	CO	23F	14-72/LFA	C	18



# Formulas

- A script that produces output based on data
- SUM, AVG, IF, MONTH, DAY, YEAR, STDEV
- Color coding!

	A	B	C	D	E	F
1	Month	Property Offenses	Violent Offenses	Total Offenses		
2	Jan	30	9	=SUM(B2,C2)		
3	Feb	28	13	SUM(number1, [number2], [number3], ...)		
4	Mar	37	10			

	A	B	C	D
1	Month	Count of Offenses		
2	Jan	38		
3	Feb	32		
4	Mar	48		
5	Apr	39		
6	May	41		
7	Jun	52		
8	Jul	27		
9	Aug	38		
10	Sep	29		
11	Oct	31		
12	Nov	49		
13	Dec	46		
14	Total	=SUM(B2:B13)		



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Product

Soution

RMS

EXCEL



← → ↻ 🔍 Date Dynamic

# Date Dynamic

AutoSave  off IACA Compstat

Search (Alt+Q)

File Home Insert Page Layout Formulas Data Review View Help

Undo Paste Font Alignment Number Conditional Formatting

A2 7/23/2022

	A	B	C	D	E
1	Report Ending				
2	<b>7/23/2022</b>			<b>2022</b>	
3				Homicide itypes	Past 7 days
4				09A	
5				09B	
6					
7				Rape	
8				Rape Itypes	Past 7 days
9				11A	
10				11B	
11				11C	
12				11D	
13				Larceny	
14				Larceny itypes	Past 7 days
15				23A	1
16				23B	
17				23C	1
18				23D	1
19				23E	1
20				23F	
21				23G	
22				23H	1
23				Agg Assault	
24				Agg Assault itypes	

Agg Assault Rolling Auto Theft Rolling Burglary Rolling Auto Crimes Breakdown Rolling\_Breakdown Calculations



# COUNTIF

- Count the number of cells that meet a criterion (based on values in corresponding columns)
- Contains pairs of columns and values
- COUNTIF for single conditions
- COUNTIFS for multiple conditions

SUM									
A	B	C	D	E	F	G	H	I	J
1	Report Ending								
2	10/1/2021	2021					2020		
3		Homicide ityp	Past 7 days	Past 28 Days	Past 90 days	YTD	Homicide ityp	Past 7 days	Past 28 D:
4		09A	0	0		0	09A	0	
5		09B	0	0		0	09B	0	
6									
7		Rape							
8		Rape Itypes	Past 7 days	Past 28 Days	Past 90 days	YTD	Rape Itypes	Past 7 days	Past 28 D:
9		11A	0	0		5	20	23A	0
10		11B	0	0		1	2	23B	0
11		11C	0	0		0	0	23C	0
12		11D	0	0		2	20	23D	0
13		Larceny							
14		Larceny itype	Past 7 days	Past 28 Days	Past 90 days	YTD	Larceny itype	Past 7 days	Past 28 D:
15		23A	0	0		1	1	23A	1
16		23B	0	2		5	7	23B	0
17		23C	=COUNTIFS(Data!B:B,">="&Calculations!\$A\$2-6,Data!\$B:\$B,"<"&Calculations!\$A\$2+1,Data!\$C:\$C,"23C")						
18		23D	COUNTIFS(criteria_range1, criteria1, [criteria_range2, criteria2], [criteria_range3, criteria3], [criteria_range4, ...])						
19		23E	1	1		1	1	23E	0



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← → ↻ 🔍 COUNTIF

# COUNTIF

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```



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← → ↺ 🔍 COUNTIF

# COUNTIF

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```

|  
An "=" always begins a formula



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← → ↻ 🔍 COUNTIF

# COUNTIF

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```

The column we want Excel to look in first;  
The "!" indicates a different sheet in the workbook;  
Data tab and entirety of column B ("B:B")





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← → ↻ 🔍 COUNTIF

# COUNTIF

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```

What rows we want to count;  
">=" whatever date is in cell A2 - 6";  
Lower date boundary



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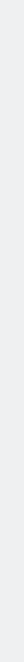
EXCEL



← → ↻ 🔍 COUNTIF

# COUNTIF

`=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")`



Upper date boundary



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Presenters

Problem

Product

Soution

RMS

EXCEL



← → ↻ 🔍 COUNTIF

# COUNTIF

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```

Column C on the "Data" tab;  
Only rows that have a value of "23C"



COMPSTAT

Presenters

Problem

Product

Soution

RMS

EXCEL



← → ↻ 🔍 Date Dynamic

# Date Dynamic

- All formulas refer to one cell to build a date range
- Once you write one statement, you write dozens of statements

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```



COMPSTAT

Presenters

Problem

Product

Soution

RMS

EXCEL



← → ↻ 🔍 Date Dynamic

# Date Dynamic

- All formulas refer to one cell to build a date range
- Once you write one statement, you write dozens of statements

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```

How would we change this to a 28 day count?



COMPSTAT

Presenters

Problem

Product

Soution

RMS

EXCEL



← → ↻ 🔍 Date Dynamic

# Date Dynamic

- All formulas refer to one cell to build a date range
- Once you write one statement, you write dozens of statements

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, "23C")
```

How would we change this to a 28 day count?

How would we change this to a 90 day count?



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How would we change this to count offense types "23D"?



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```

How would we change this to a 28 day count?

How would we change this to a 90 day count?

How would we change this to count offense types "23D"?

How would we change this to count offense types "23C", "23D", AND "23E"?





# Nested Functions & Arrays

## Nested

- Using a function as one of the arguments in a formula
- Theoretically no end to complexity

	A	B	C	D	E	F
1	Month	Property Offenses	Violent Offenses			
2	Jan	30	9			
3	Feb	28	13			
4	Mar	37	10			
5		=AVERAGE(SUM(B2:B4),SUM(C2:C4))				

## Arrays

- Formula that can perform multiple calculations on one or more items in an array

```
=SUM(COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C, {"23C", "23D", "23E"}))
```



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=SUM(COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C,
{"23C", "23D", "23E"}))
```

How would we change this to a year to date formula?



# Year to Date

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C,"23C")
```

- Adjust lower date boundary to January 1 of current year
- Utilize a nested function
- DATE(Year,Month,Day)
- YEAR(Date Cell) - extract year from dynamic cell

```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2),1,1), Data!$B:$B,"<"&Calculations!$A$2+1, Data!$C:$C,"23C")
```



# Year to Date

```
=COUNTIFS(Data!B:B,">="&Calculations!$A$2-6,Data!$B:$B,"<"&Calculations!$A$2+1,Data!$C:$C,"23C")
```

- Adjust lower date boundary to January 1 of current year
- Utilize a nested function
- DATE(Year,Month,Day)
- YEAR(Date Cell) - extract year from dynamic cell

```
=COUNTIFS( Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2),1,1), Data!$B:$B,"<"&Calculations!$A$2+1, Data!$C:$C,"23C")
```

How would we compare to the previous year?



# Previous Year

```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2),1,1), Data!$B:$B,"<"&Calculations!$A$2+1, Data!$C:$C,"23C")
```

- Utilize dynamic cell to set boundary for today's month and day with last year's year

```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2)-1,1,1), Data!$B:$B,"<"&DATE(YEAR(Calculations!$A$2)-1,MONTH(A2),DAY(A2)), Data!$C:$C,"23C")
```



# Previous Year

```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2),1,1), Data!$B:$B,"<"&Calculations!$A$2+1, Data!$C:$C,"23C")
```

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```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2)-1,1,1), Data!$B:$B,"<"&DATE(YEAR(Calculations!$A$2)-1,MONTH(A2),DAY(A2)), Data!$C:$C,"23C")
```

How would we compare with a specific timeframe during the previous year?



# Previous Year

```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2),1,1), Data!$B:$B,"<"&Calculations!$A$2+1, Data!$C:$C,"23C")
```

- Utilize dynamic cell to set boundary for today's month and day with last year's year

```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR(Calculations!$A$2)-1,1,1), Data!$B:$B,"<"&DATE(YEAR(Calculations!$A$2)-1,MONTH(A2),DAY(A2)), Data!$C:$C,"23C")
```

How would we compare with a specific timeframe during the previous year?

```
=COUNTIFS(Data!$B:$B,">="&DATE(YEAR($A$2)-1,MONTH($A$2),DAY($A$2))-6,Data!$B:$B,"<"&DATE(YEAR($A$2)-1,MONTH($A$2),DAY($A$2)+1),Data!$C:$C, "23C")
```



# 3 Year Averages

`=(A1+A2+A3)/3`

`=(SUM(Calculations!J4:J5,Calculations!O4:O5,Calculations!T4:T5))/3`

`=ROUNDDOWN((SUM(Calculations!K4:K5,Calculations!P4:P5,Calculations!U4:U5))/3,2)`

`=(AVERAGE(Calculations!J4:J5,Calculations!O4:O5,Calculations!T4:T5))`

`=(Calculations!J4:J5+Calculations!O4:O5+Calculations!T4:T5)/3`







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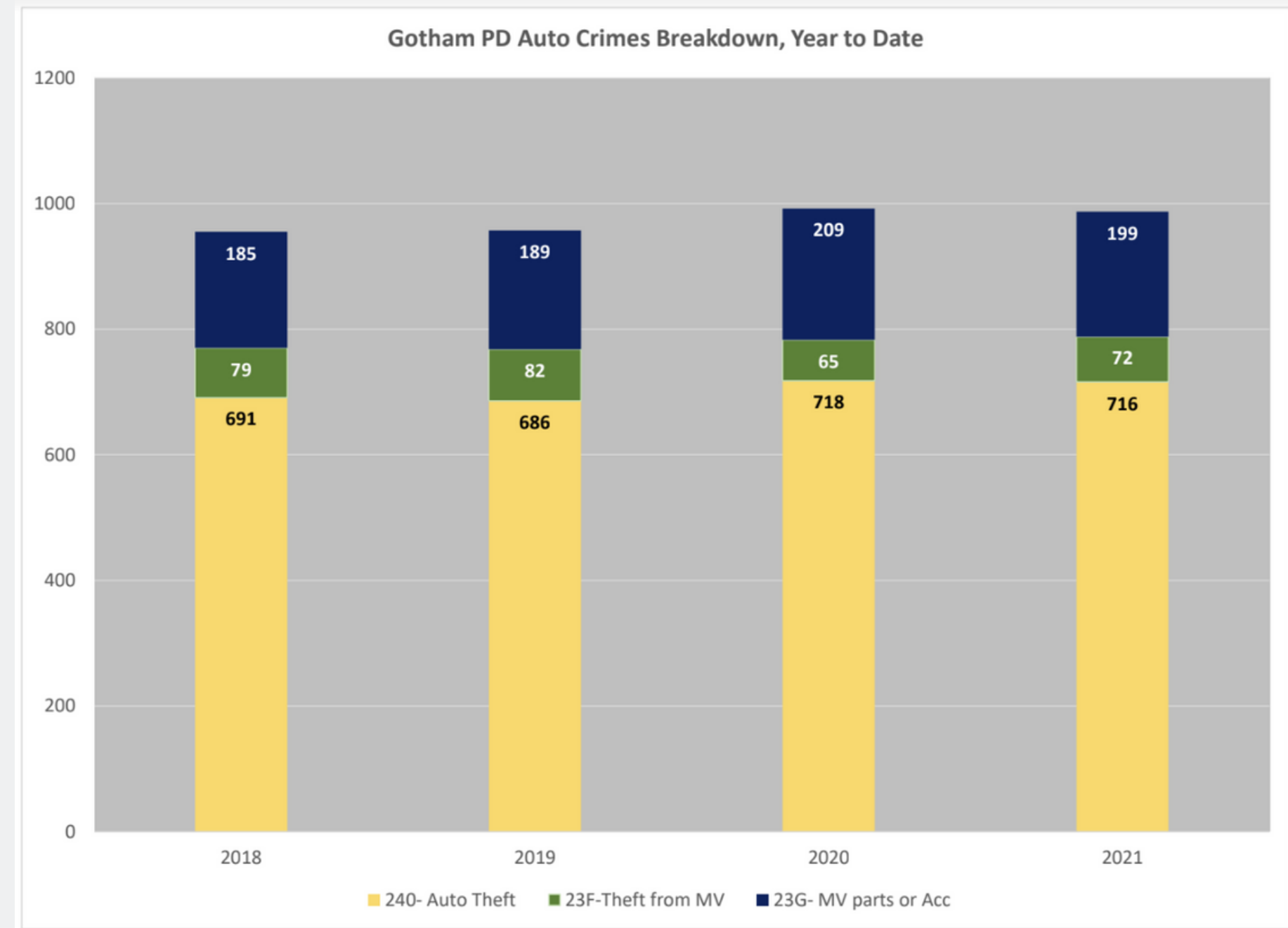
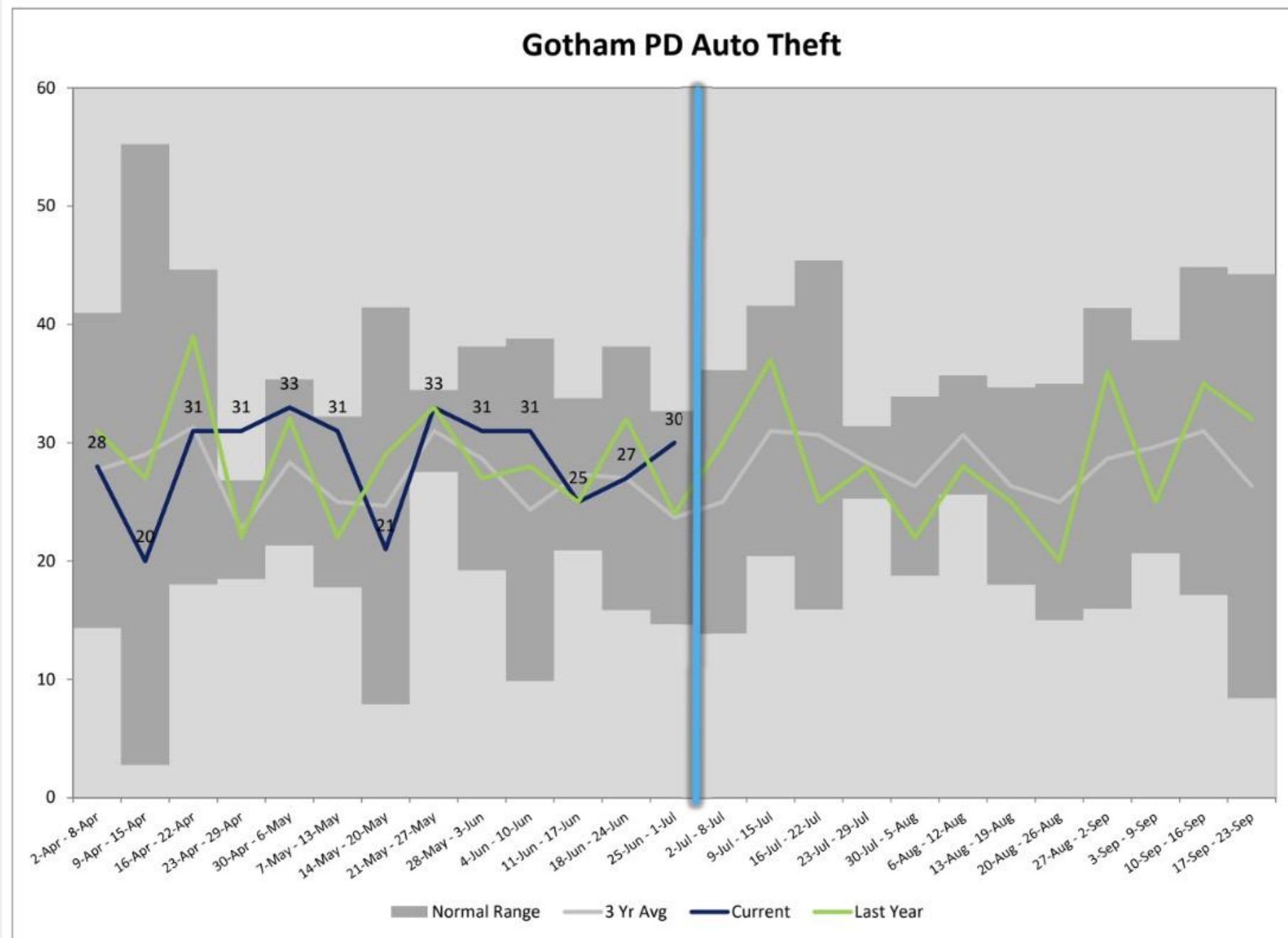
# Percent Change & IF

```
=IF($C12=$D12,"N/C",IF($D12=0,CONCATENATE("↑ ",$C12),IF($C12=0,CONCATENATE("↓ ",$D12),  
($C12-$D12)/$D12)))
```

- Allows you to make logical comparisons between a value and what you expect
- First result is if true, second result is if false
- Percent Change =  $\frac{\text{new} - \text{old}}{\text{old}}$



# Designing Your Visual





# Conditional Formatting

	28 Day			90 Day			Year to Date					
	2021	3 year ave.	% change	2021	3 year ave.	% change	2021	3 year ave.	% change			
Agg Assault	z1	0	1.6666667	↓ 1.6666667	z1	3	3.6666667	-18.2%	z1	9	11	-18.2%
	z2	1	2.3333333	-57.1%	z2	6	5	20.0%	z2	19	21	-9.5%
	z3	4	3	33.3%	z3	19	8	137.5%	z3	31	28.3333333	9.4%
	z4	7	2.3333333	200.0%	z4	15	5	200.0%	z4	27	18.3333333	47.3%
	z5	7	5	40.0%	z5	24	13.3333333	80.0%	z5	39	43.3333333	-10.0%
	z6	9	7.6666667	17.4%	z6	27	20	35.0%	z6	58	56.3333333	3.0%
	z7	5	2	150.0%	z7	14	8.3333333	68.0%	z7			
	z8	1	2	-50.0%	z8	8	10.3333333	-22.6%	z8			
Larceny	28 Day			90 Day			Year to Date					
	2021	3 year ave.	% change	2021	3 year ave.	% change	2021	3 year ave.	% change			
	z1	9	13	-30.8%	z1	0	0	N/C	z1			
	z2	32	27.6666667	15.7%	z2	0	0	N/C	z2			
	z3	55	38.6666667	42.2%	z3	0	0	N/C	z3			
	z4	18	29.3333333	-38.6%	z4	0	0	N/C	z4			
	z5	70	56	25.0%	z5	0	0	N/C	z5			
	z6	72	71.6666667	0.5%	z6	0	0	N/C	z6			
z7	43	45.3333333	-5.1%	z7	0	0	N/C	z7				
z8	36	28.6666667	25.6%	z8	0	0	N/C	z8				

Conditional Formatting Rules Manager

Show formatting rules for: **Current Selection**

Rule (applied in order shown)	Format	Applies to	Stop If True
Cell Value contains "="N/...	<b>AaBbCcYyZz</b>	=SQ\$12:SQ\$16,SQ\$18:SQ\$22,SM\$12	<input checked="" type="checkbox"/>
Cell Value contains '↓'	<b>AaBbCcYyZz</b>	=SQ\$12:SQ\$16,SQ\$18:SQ\$22,SM\$12	<input checked="" type="checkbox"/>
Cell Value < 0%	<b>AaBbCcYyZz</b>	=SE\$12:SE\$16,SE\$18:SE\$22,SIS\$12:SI!	<input checked="" type="checkbox"/>
Cell Value > 0	<b>AaBbCcYyZz</b>	=SQ\$12:SQ\$16,SQ\$18:SQ\$22,SM\$12	<input checked="" type="checkbox"/>



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# Continued Learning

- Macros in Access and Excel
- Windows Task Scheduler



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Questions



Q Questions

