

Practical No 6

Creating aggregate reports using formula based technique

Objectives: To learn how to apply aggregation reports using formula techniques in Microsoft Excel.

Theory:

1. Microsoft Excel function allows you to apply functions such as Average, Sum, Count, MAX, MIN and ignore errors or hidden errors.
2. It is a built in function that is categorized by as a Math/Trig Function.
3. Used as worksheet function in Microsoft excel

Description of concept/topic: **with commands etc.**

Performance and Results:

All operations performed on following workbook.

Name of the Sample Workbook Used: "Sales Worksheet of a Company"
Following

are the observations and operations performed on sample workbook.

1. Aggregate Formulas:

There are basic two formula of Aggregate functions which are as follows:

1. Aggregate Function in Reference:

=AGGREGATE(function_num, options, ref1...)

2. Aggregate Function in Array:

=AGGREGATE(function_num, options, array, [k])

2. Function_num:

1. These are the numbers from 1 to 19 which depend on the specific function you want to use.

2. Out of which, 1 to 13 are Reference function and 14 to 19 onwards are Array function.

3. Following table shows all the function from 1 to 19:

Number	Functions
1	AVERAGE
2	COUNT
3	COUNTA
4	MAX
5	MIN
6	PRODUCT
7	STDEV.S
8	STDEV.P
9	SUM
10	VAR.S
11	VAR.P
12	MEDIAN
13	MODE.SNGL
14	LARGE

15	SMALL
16	PERCENTILE.INC
17	QUARTILE.INC
18	PERCENTILE.EXC
19	QUARTILE.EXC

3. Options:

1.Options are the numbers from 0 to 7 that specifies which value to ignore for the aggregate function.

2.Suppose if the option value is not mentioned then it is set to 0 by default.

3.The table of the “Options” is given as follows:

Number	Options
0	Ignore nested SUBTOTAL and AGGREGATE functions
1	Ignore nested SUBTOTAL, AGGREGATE functions, and hidden rows
2	Ignore nested SUBTOTAL, AGGREGATE functions, and error values
3	Ignore nested SUBTOTAL, AGGREGATE functions, hidden rows & error values
4	Ignore nothing
5	Ignore hidden rows
6	Ignore error values
7	Ignore hidden rows and error values

4. ref1, ref2, ref [3]:

1. It is a first numeric argument for the function when using the REFERENCE

syntax.

2. It is values or numeric value on which we want to perform the computation.

5. Array: An array refers to the range of cells when we use the array syntax.

6. [k]:

1. The last 6 functions (under 1 to 19 function list):

2. 'k' value as a fourth argument.

3. It is an optional argument, it is used, if we need to find out LARGE, SMALL, PERCENTILE.INC, QUARTILE.INC, PERCENTILE.EXC, or QUARTILE.EXC when using the ARRAY syntax.

8. Open the existing workbook:

Just click on the Excel worksheet and it would be opened, as follows:

9. Performing Sum, MAX, MIN, Average and Aggregate Operations:

- 1.Sum: For operating sum operation we use the formula

"=SUM(Start Range: End Range)"

- 2.Average: For performing the Average operation use the formula:

“=AVERAGE(Start Range: End Range)”

3.MAX: For performing the MAX operation use the formula:

“=MAX(Start Range: End Range)”

4.MIN: For performing the MIN operation use the formula:

“=MIN(Start Range: End Range)”

5.Aggregate Function: Using the formulas shown in the “Step 1” we can carry out the aggregate operation too.

- Refer to the images given below:

1) SUM Operation:

The screenshot shows an Excel spreadsheet with a table of T-shirt sizes and prices. The formula bar at the top displays `=SUM(B2:B20)`. The table data is as follows:

T-shirt Size	Price
Small	250
Small	250
Small	250
Small	250
Small	250
Small	250
Small	250
Small	250
Medium	500
Medium	500
Medium	500
Medium	500
Medium	500
Medium	500
Medium	500
Medium	500
Large	700
Large	700
Large	700

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Formula Bar: =SUM(B2:B20)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	T-shirt Size	Price																
2	Small	250																
3	Small	250																
4	Small	250																
5	Small	250																
6	Small	250																
7	Small	250																
8	Small	250							8100									
9	Small	250																
10	Medium	500																
11	Medium	500																
12	Medium	500																
13	Medium	500																
14	Medium	500																
15	Medium	500																
16	Medium	500																
17	Medium	500																
18	Large	700																
19	Large	700																
20	Large	700																

Sheet1

Ready

2) MAX operation:

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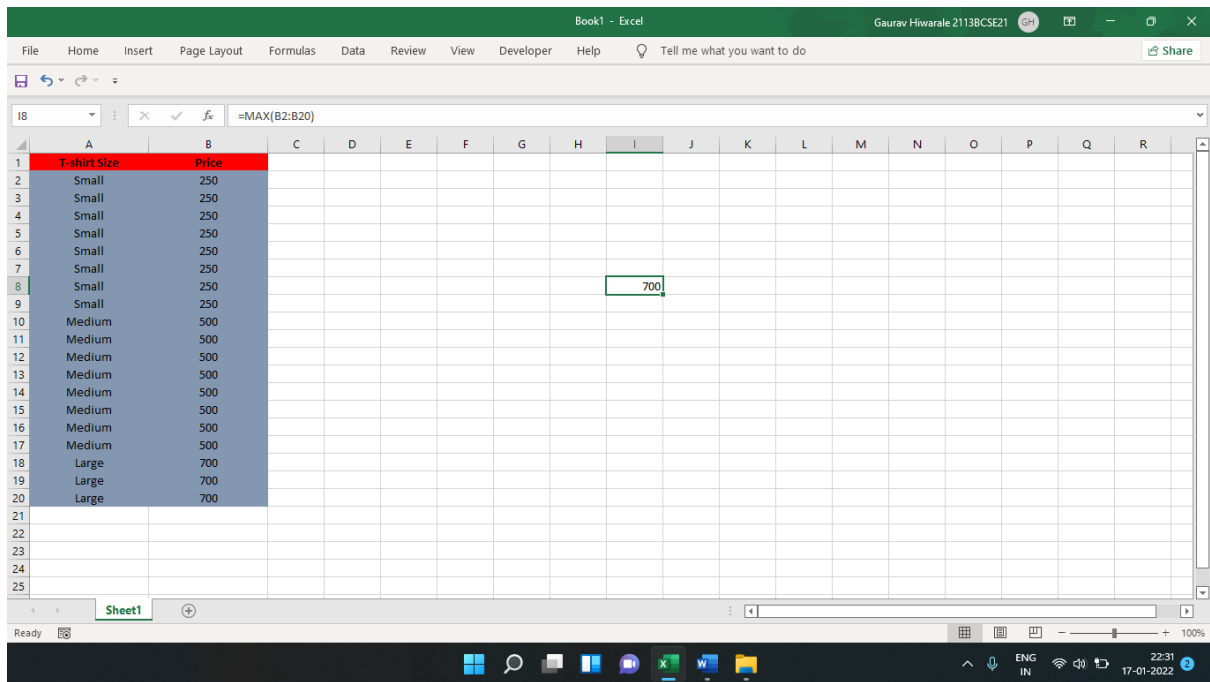
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Formula Bar: =MAX(B2:B20)

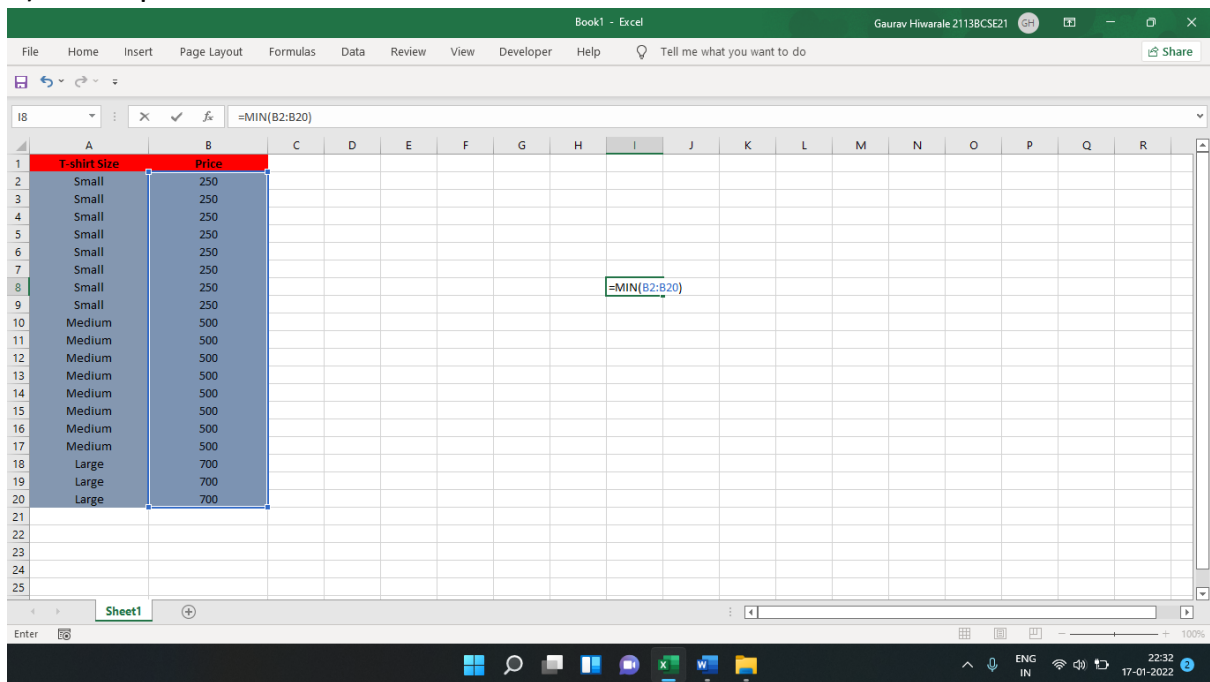
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	T-shirt Size	Price																
2	Small	250																
3	Small	250																
4	Small	250																
5	Small	250																
6	Small	250																
7	Small	250																
8	Small	250																
9	Small	250																
10	Medium	500																
11	Medium	500																
12	Medium	500																
13	Medium	500																
14	Medium	500																
15	Medium	500																
16	Medium	500																
17	Medium	500																
18	Large	700																
19	Large	700																
20	Large	700																

Sheet1

Enter



3) MIN operation:



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fx =MIN(B2:B20)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	T-shirt Size	Price																
2	Small	250																
3	Small	250																
4	Small	250																
5	Small	250																
6	Small	250																
7	Small	250																
8	Small	250							250									
9	Small	250																
10	Medium	500																
11	Medium	500																
12	Medium	500																
13	Medium	500																
14	Medium	500																
15	Medium	500																
16	Medium	500																
17	Medium	500																
18	Large	700																
19	Large	700																
20	Large	700																
21																		
22																		
23																		
24																		
25																		

Sheet1

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4) Average operation:

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fx =AVERAGE(B2:B20)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	T-shirt Size	Price																
2	Small	250																
3	Small	250																
4	Small	250																
5	Small	250																
6	Small	250																
7	Small	250																
8	Small	250																
9	Small	250																
10	Medium	500																
11	Medium	500																
12	Medium	500																
13	Medium	500																
14	Medium	500																
15	Medium	500																
16	Medium	500																
17	Medium	500																
18	Large	700																
19	Large	700																
20	Large	700																
21																		
22																		
23																		
24																		
25																		

Sheet1

Enter

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19

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	T-shirt Size	Price																
2	Small	250																
3	Small	250																
4	Small	250																
5	Small	250																
6	Small	250																
7	Small	250																
8	Small	250							426.3158									
9	Small	250																
10	Medium	500																
11	Medium	500																
12	Medium	500																
13	Medium	500																
14	Medium	500																
15	Medium	500																
16	Medium	500																
17	Medium	500																
18	Large	700																
19	Large	700																
20	Large	700																
21																		
22																		
23																		
24																		
25																		

Sheet1

Ready

5) Using Aggregate Function performing Count operation:

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Share

18

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X

✓

fx

=AGGREGATE(2,6,B2:B20)

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

1

T-shirt Size

Price

2

Small

250

3

Small

250

4

Small

250

5

Small

250

6

Small

250

7

Small

250

8

Small

250

9

Small

250

10

Medium

500

11

Medium

500

12

Medium

500

13

Medium

500

14

Medium

500

15

Medium

500

16

Medium

500

17

Medium

500

18

Large

700

19

Large

700

20

Large

700

21

22

23

24

25

=AGGREGATE(2,6,B2:B20)

Sheet1

Edit

1

ENG

IN

22:37

17-01-2022

T-shirt Size	Price
Small	250
Small	250
Small	250
Small	250
Small	250
Small	250
Small	250
Small	250
Small	250
Medium	500
Medium	500
Medium	500
Medium	500
Medium	500
Medium	500
Medium	500
Large	700
Large	700
Large	700