Logic functions

The dataset

The following dataset will be used to demonstrate the use of some of the logic functions in this document.

	А	В	С		
1	Original average retail prices				
2	KSh per Kg				
3	Crop	March	September		
4	Maize	38.24	35.47		
5	Beans	77.16	74.67		
6	Finger Millet	78.90	79.29		
7	Sorghum	54.07	54.01		
8	Potatoes	31.20	30.33		
9	Cabbages	24.67	24.75		
10	Tomatoes	58.70	68.11		
11	Bananas	42.50	42.46		

SWITCH function

Used to evaluate a logical expression and match it with one of the cases available. It then returns the value defined in that case block. If there is no matching case, it returns the default value.

=SWITCH(expression, case1, value1, [case2_or_default, ...], [value2, ...])



Ex. =SWITCH(A4:A11, "Beans", "Legume", "Cabbages", "Vegetable", "Potatoes", "Vegetable", "Tomatoes", "Fruit", "Bananas", "Fruit", "Grain")



	А	В	С	D		
1	Original average retail prices					
2	KSh per Kg			Food crop		
3	Crop	March	September	category		
4	Maize	38.24	35.47	Grain		
5	Beans	77.16	74.67	Legume		
6	Finger Millet	78.90	79.29	Grain		
7	Sorghum	54.07	54.01	Grain		
8	Potatoes	31.20	30.33	Vegetable		
9	Cabbages	24.67	24.75	Vegetable		
10	Tomatoes	58.70	68.11	Fruit		
11	Bananas	42.50	42.46	Fruit		

IF functions





Used to return one value if a logical expression evaluates to TRUE and another if it evaluates to FALSE.

=IF(logical_expression, value_if_true, value_if_false) </>

Ex. =IF(B4<50, "Cheap", "Expensive") → "Cheap"</pre>



COUNTIF

COUNTIFS

Used to count cells in a range that meet a single condition.

Used to count cells in a range that meet multiple conditions.

[criteria_range2,...], [criterion2,...])

=COUNTIF(range, criterion)

Ex. =COUNTIF(B4:B11, ">50") → 4





(</>)

AND

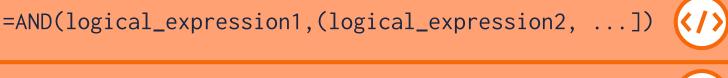
NOT

OR

=NOT(logical_expression)

Ex. =NOT(FALSE) → TRUE

are logically false.



Ex. =AND(TRUE, FALSE, TRUE) → FALSE

Other logical functions

Used to return TRUE if all of the provided arguments are

logically true, and FALSE if any of the provided arguments



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IFS

Used to evaluate multiple conditions and return a value that corresponds to the first TRUE condition.

=IFS(condition1, value1, [condition2, value2, ...])



Ex. = IFS(B5<50, "Cheap", B5>70, "Expensive", B5<70, "Affordable") → "Expensive"

if present, or a blank if [value_if_error] is absent.

=IFERROR(value, [value_if_error])

→ "Division by zero"

Ex. =IFERROR(1/0, "Division by zero")

Used to catch and handle errors in a formula. It returns a

value if it is not an error, otherwise it returns [value_if_error]



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SUMIF

Used to add up the value of cells within a range that meet a certain condition.

=SUMIF(range, criterion, [sum_range])

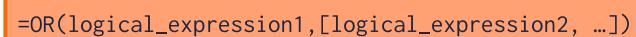
=COUNTIFS(criteria_range1,criterion1,

Ex. =COUNTIFS(B4:B11, ">50", B4:B11, "<70") > 2



Ex. =SUMIF(B4:B11, ">50") \Rightarrow 268.83





and **FALSE** if **all** arguments are **logically false**.

Used to return TRUE if any argument is logically true,

Used to return the opposite of a logical value.



Ex. =OR(TRUE, FALSE, TRUE) → TRUE



XOR

Used to return TRUE if an odd number of arguments are logically true, and FALSE otherwise.

=XOR(logical_expression1,[logical_expression2, ...])



Ex. =XOR(TRUE, FALSE, TRUE) → FALSE



IFNA

IFERROR

Used to catch and handle errors in a formula. It returns a value if it is not an error, otherwise it returns value_if_na.

=IFNA(value, value_if_na)



Ex. IFNA(#N/A, "Na error") → "Na error"



SUMIFS

Used to add up the value of cells within a range that meet multiple conditions.

=SUMIFS(sum_range,criteria_range1,criterion1, [criteria_range2,criterion2,...])



Ex. =SUMIFS(B4:B11, B4:B11, ">50", B4:B11, "<70") **→** 112.77



