



EXCEL MODULE 3 – LOOK UP FUNCTIONS

Off-Cycle Interns Program

2023

AGENDA

VLOOKUP function

MATCH function

INDEX function

Exercise

VLOOKUP

	A	B	C	D	E
1	Company Name	RIC	Country		
2	Airbus Group NV	AIR.PA	FRA		
3	Allianz SE	ALVG.DE	GER	Lookup Value	VLOOKUP Result
4	Anheuser-Busch InBev SA	ABI.BR	BEL	Telefonica SA	=VLOOKUP(E4,A2:C21,2,FALSE)
5	ASML Holding NV	ASML.AS	NLD		
6	Assicurazioni Generali SpA	GASI.MI			
7	AXA SA	AXAF.PA			
8	BMW AG	BMWG.DE	GER		
9	Carrefour SA	CARR.PA	FRA		
10	Daimler AG	DAIGN.DE	GER		
11	Deutsche Post AG	DPWGN.DE	GER		
12	Deutsche Telekom AG	DTEGN.DE	GER		

An exact or approximate match?

FALSE = exact match

What am I looking for?

Lookup Value

Where should I look?

Table Array

What should I return?

Column Index Number

MATCH

- It is good Excel practice to avoid hardcoding values into a formula.
- In order to build flexible lookup formulas we need the **MATCH** function.
- With MATCH we can lookup the relative position of a value in an array.

=MATCH(lookup value, lookup array, match type)

MATCH

	A	B	C	D	E	F	G	H
1	Company Name	RIC	Country					
2	Airbus Group NV	AIR.PA	FRA					
3	Allianz SE	ALVG.DE	GER		Lookup Value	VLOOKUP Result		
4	Anheuser-Busch InBev SA	ABI.BR	BEL		Telefonica SA	=VLOOKUP(E4,A2:C21,2,FALSE)		
5	ASML Holding NV	ASML.AS	NLD					
6	Assicurazioni Generali SpA	GASI.MI	ITA					
7	AXA SA	AXAF.PA	FRA					
8	BMW AG	BMWG.DE	GER					
9	Carrefour SA	CARR.PA	FRA					
10	Daimler AG	DAIGn.DE	GER					
11	Deutsche Post AG	DPWGn.DE	GER					
12	Deutsche Telekom AG	DTEGn.DE	GER					

An exact or
approximate match?

0 = exact match

MATCH

	A	B	C	D	E	F	G
1	Company Name	RIC	Country				
2	Airbus Group NV	AIR.PA	FRA				
3	Allianz SE	ALV.G.DE	GER		Lookup Value	VLOOKUP Result	
4	Anheuser-Busch InBev SA	ABI.BR	BEL		Telefonica SA	TEF.MC	
5	ASML Holding NV	ASML.AS	NLD				
6	Assicurazioni Generali SpA	GASI.MI	ITA		Column	MATCH Result	
7	AXA SA	AXAF.PA	FRA		Country	3	
8	BMW AG	BMWG.DE	GER				
9	Carrefour SA	CARR.PA	FRA				
10	Daimler AG	DAIGN.DE	GER				
11	Deutsche Post AG	DPWGN.DE	GER				
12	Deutsche Telekom AG	DTEGN.DE	GER				

VLOOKUP + MATCH

	A	B	C		F	G	H
1	Company Name	RIC	Country				
2	Airbus Group NV	AIR.PA	FRA				
3	Allianz SE	ALVG.DE	GER				
4	Anheuser-Busch InBev SA	ABI.BR	BEL				
5	ASML Holding NV	ASML.AS	NLD				
6	Assicurazioni Generali SpA	GASI.MI	ITA				
7	AXA SA	AXAF.PA	FRA				
8	BMW AG	BMWG.DE	GER				
9	Carrefour SA	CARR.PA	FRA				
10	Daimler AG	DAIGn.DE	GER				
11	Deutsche Post AG	DPWGn.DE	GER				
12	Deutsche Telekom AG	DTEGn.DE	GER				

	What am I looking for? Lookup Value	VLOOKUP Result
	Telefonica SA	=VLOOKUP(E4,A2:C21,F7,FALSE)
	Column	MATCH Result
	RIC	2

Where should I look?
Table Array

What should I return?
Column Index Number

INDEX

- VLOOKUP can only return values from columns on the right-hand of the lookup value.
- The **INDEX** function is a more flexible lookup function.
- Think of the **INDEX** function as having a map and giving coordinates to look for a specific value on the map.

=INDEX(lookup array, row number, column number)

INDEX

	A	B	C	D	E
1		Lookup array = B2:D8			
2					
3					
4			Row 3, Col 2		
5					
6					
7					
8					

=INDEX(B2:D8, 3, 2)

INDEX

	A	B	C	D	E	F	G	H
1	Company Name	RIC	Country					
2	Airbus Group NV	A						
3	Allianz SE	A			Lookup Value		MATCH Result	
4	Anheuser-Busch InBev SA	ABI.BR	BEL		BMW AG	Row number	7	
5	ASML Holding NV	ASML.AS	NLD		Country	Column number	3	
6	Assicurazioni Generali SpA	GASI.MI	ITA					
7	AXA SA	AXAF.PA	FRA			INDEX Result		
8	BMW AG	BMWG.DE	GER		=INDEX(A2:C21,G4,G5)			
9	Carrefour SA	CARR.PA	FRA					
10	Daimler AG	DAIGN.DE	GER					
11	Deutsche Post AG	DPWGN.DE	GER					
12	Deutsche Telekom AG	DTEGN.DE	GER					

Lookup Array (points to A2:C21)

Row Number (points to G4)

Column Number (points to G5)

INDEX

	A	B	C	D	E	F	G	H
1	Company Name	RIC	Country					
2	Airbus Group NV	AIR.PA	FRA					
3	Allianz SE	ALVG.DE	GER		Lookup Value		MATCH Result	
4	Anheuser-Busch InBev SA	ABI.BR	BEL		BMW AG	Row number	7	
5	ASML Holding NV	ASML.AS	NLD		Country	Column number	3	
6	Assicurazioni Generali SpA	GASI.MI	ITA					
7	AXA SA	AXAF.PA	FRA			INDEX Result		
8	BMW AG	BMWG.DE	GER			GER		
9	Carrefour SA	CARR.PA	FRA					
10	Daimler AG	DAIGn.DE	GER					
11	Deutsche Post AG	DPWGn.DE	GER					
12	Deutsche Telekom AG	DTEGn.DE	GER					

INDEX

	A	B	C	D	E	F	G	H
1	Company Name	RIC	Country					
2	Airbus Group NV	AIR.PA	FRA					
3	Allianz SE	ALVG.DE	GER		Lookup Value		MATCH Result	
4	Anheuser-Busch InBev SA	ABI.BR	BEL		Carrefour SA	Row number	8	
5	ASML Holding NV	ASML.AS	NLD		RIC	Column number	2	
6	Assicurazioni Generali SpA	GASI.MI	ITA					
7	AXA SA	AXAF.PA	FRA			INDEX Result		
8	BMW AG	BMWG.DE	GER			CARR.PA		
9	Carrefour SA	CARR.PA	FRA					
10	Daimler AG	DAIGn.DE	GER					
11	Deutsche Post AG	DPWGn.DE	GER					
12	Deutsche Telekom AG	DTEGn.DE	GER					



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