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Computer Science for Food Industry



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Lorenzo Comba

Exercise L1.E04.a:

Make a spreadsheet that allows you to determine which container to use (1, 2 or 3) depending on the weight of the product to be packaged.

In particular:

- use container 1 if the weight is less than 500g
- use container 2 if the weight is between 500g and 1500g
- use container 3 if the weight is greater than 1500g

Try to use arithmetic operators instead of logical operators and "IF"/"SE" function.

	A	B	C	D
1				
2				
3		Weight:	800 g	
4		Container:	2	
5				
6				
7				
8				

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Exercise L1.E04.b:

Create a drop-down list to allow quick selection of the available values, as shown (ITA: elenco a discesa).

	A	B	C	D
1				
2				
3		Weight:	600	
4		Container:	2	
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

Tool "Data Validation"/"Convalida dati"

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Exercise L1.E05:

Make a spreadsheet that, assigned the values A and B, calculate the result according to the following two diagrams (case 1 and case 2):

worksheet (expressed through the row and column coordinates). Absolute references are indicated by adding the "\$" identifier in front of the row and column references.

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Exercise L1.E01: formatting and cell references

Make the following table, respecting the proposed formatting. Use the CSFI_L1_E01.xls file as a basis for

Journal	Advertisement cost	Advertisement Public	Number of advertisement	Total cost	Percentage of the total	Total Public
Pub1	€ 147.420,00	9,9	6 €	884.520,00	26%	59,4
Pub2	€ 53.000,00	5	6 €	318.000,00	9%	30
Pub3	€ 113.100,00	7,5	6 €	678.600,00	20%	45
Pub4	€ 52.440,00	4,9	6 €	314.640,00	9%	29,4
Pub5	€ 70.070,00	5,6	6 €	420.420,00	13%	33,6
Pub6	€ 124.410,00	8,4	6 €	746.460,00	22%	50,4
Totale			€	3.362.640,00		

Tip: use F4 function to lock cells references

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Relational operator:

In the formulas, **conditional tests** can be used whose result is 1 (true) if the associated logical expression is verified, otherwise 0 (false). The most used operators are:

Operator	Definition
=	Equal to
<	Less than
>	Greater than
<=	Less than equal
>=	Greater equal
<>	Different

Warning: some commands (including sum) do not operate on

logical values; in this case, multiply the conditional test result by 1 to turn this into a number

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Exercise L1.E01bis: conditional formatting

Using the previously performed table, highlight **conditional formatting** for journal whose percentage cost on the total is greater than or equal to 20% as represented in this image. (tip: use "Manage rules...")



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Lab 1: information management by Excel advanced use

Lorenzo Comba



Relative and absolute cell reference:

Relative cell references: refers to the cells based on the position of the cell that contains the formula (e.g. "the cell placed two rows above this")

Absolute cell references: refers to the cells based on their position on the worksheet (expressed through the row and column coordinates). Absolute references are indicated by adding the "\$" identifier in front of the row and column references.



Exercise L1.E01: formatting and cell references

Make the following table, respecting the proposed formatting. Use the CSEI L1 E01.xls file as a basis for



8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

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Array formulas:

Article	Quantity	Unit prize
A	3 €	2,55
B	1 €	10,80
C	5 €	7,35
D	8 €	15,50
E	2 €	31,65
F	2 €	4,33
G	3 €	2,60
Total	€	258,96

An array formula is a formula that can perform multiple calculations on one or more items in an array. You can think of an array as a row or column of values, or a combination of rows and columns of values. Array formulas can return either multiple results, or a single result.

Array formulas:

Once the formula is written, press CTRL+MAIUSC+INVIO

`{=SOMMA(C3:C9*D3:D9)}`

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Array formulas:

Article	Quantity	Unit prize
A	3 €	2,55
B	1 €	10,80
C	5 €	7,35
D	8 €	15,50
E	2 €	31,65
F	2 €	4,33
G	3 €	2,60
Total	€	258,96

Since the release of Office 365, a new method has been added for inserting array formulas, which does not require CTRL + SHIFT + ENTER, but simply ENTER. However, as this new feature is not supported by all computers, I suggest not to use it.

More info at: <https://support.microsoft.com/en-us/office/guidelines-and-examples-of-array-formulas-7d94a64e-3ff3-4686-9372-ecfd5caa57c7>



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Exercise L1.E07:

Calculate the marks average using array formula in the following table (file CSFI_L1_E07.xls.).

	A	B	C	D	E	F	G	H	I
1									

9			
10	Total: C	258,96	
11			
12			

More info at: <https://support.microsoft.com/en-us/office/guidelines-and-examples-of-array-formulas-7d94a64e-3ff3-4686-9372-ecfd5caa57c7>



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Exercise L1.E07:

Calculate the marks average using array formula in the following table (file CSFI_L1_E07.xls.).

	A	B	C	D	E	F	G	H	I
1									
2		Surname	Name	Exam 1	Exam 2	Exam 3	Exam 4		Average
3		Bruni	Viola	24	27	21	18		22,5
4		Casetti	Licia	30	21	24	27		25,5
5		Corni	Federica	25	28	18	20		22,8
6		Farace	Giuseppe	24	25	28	30		26,8
7		Ferrari	Olga	21	29	28	24		25,5
8		Ferri	Roberto	30	22	25	24		25,3
9		Giordano	Raffaele	23	25	30	18		24,0
10		Frassi	Paola	25	26	19	28		24,5

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Exercise L1.E08:

Make the Pythagorean table of figure 6 (as shown in the figure) using array formulas.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		Pythagorean table												
2														
3			1	2	3	4	5	6	7	8	9	10	11	12
4		1	1	2	3	4	5	6	7	8	9	10	11	12
5		2	2	4	6	8	10	12	14	16	18	20	22	24
6		3	3	6	9	12	15	18	21	24	27	30	33	36
7		4	4	8	12	16	20	24	28	32	36	40	44	48
8		5	5	10	15	20	25	30	35	40	45	50	55	60
9		6	6	12	18	24	30	36	42	48	54	60	66	72
10		7	7	14	21	28	35	42	49	56	63	70	77	84
11		8	8	16	24	32	40	48	56	64	72	80	88	96
12		9	9	18	27	36	45	54	63	72	81	90	99	108
13		10	10	20	30	40	50	60	70	80	90	100	110	120
14		11	11	22	33	44	55	66	77	88	99	110	121	132
15		12	12	24	36	48	60	72	84	96	108	120	132	144

Array formulas:
Once the formula is written, press CTRL+MAIUSC+INVIO

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Exercise L1.E09:

With reference to the CSFI_L1_E02.xls file, determine the number of projections that are lower than € 2000 using array formulas. Then evaluate the sum of these projections using array formulas.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Products sales projections 2020													
2	Product 1	€7.317	€6.320	€2.110	€3.710	€2.964	€1.100	€2.467	€9.954	€9.750	€6.177	€8.170	€9.931	€8.007

7			Results: 20
8			
9			
10			
11			
12			

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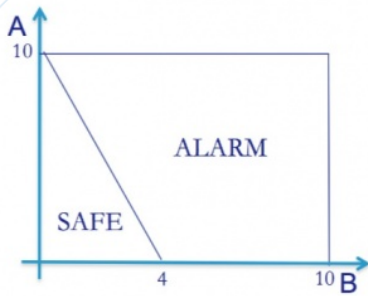


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Exercise L1.E05.b:

Make a spreadsheet that, assigned the values A and B, write the text "safe" or "alarm" according to the following diagram:



Case 3

	A	B	C	D
1				
2				
3				
4			A 8	
5			B 3	
6				
7			Results: ALARM	
8				
9				
10				

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Exercise L1.E06:

Make the Pythagorean table as shown in the figure.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Pythagorean table													
2														
3		1	2	3	4	5	6	7	8	9	10	11	12	
4	1	2	4	6	8	10	12	14	16	18	20	22	24	
5	2	4	6	9	12	15	18	21	24	27	30	33	36	
6	3	6	9	12	15	20	24	28	32	36	40	44	48	
7	4	8	12	16	20	25	30	35	40	45	50	55	60	
8	5	10	15	20	25	30	36	42	48	54	60	66	72	
9	6	12	18	24	30	36	42	49	56	63	70	77	84	
10	7	14	21	28	35	42	49	56	64	72	80	88	96	
11	8	16	24	32	40	48	56	64	72	80	88	96	104	
12	9	18	27	36	45	54	63	72	81	90	99	108	117	
13	10	20	30	40	50	60	70	80	90	100	110	120	130	
14	11	22	33	44	55	66	77	88	99	110	121	132	143	
15	12	24	36	48	60	72	84	96	108	120	132	144	156	

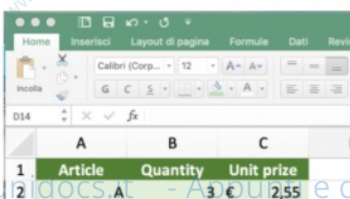
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Array formulas:



An array formula is a formula that can perform multiple calculations on one or more items in an array. You can think of an array as a row or column of values, or a

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number of products for which the projection for the first quarter is greater than that for the third.

32	Product 29	€ 7.506	€ 3.960	€ 7.502	€ 2.839	€ 7.823	€ 8.110	€ 2.778	€ 9.111	€ 8.539	€ 4.208	€ 1.875	€ 4.487	€ 53.810
33	Product 30	€ 6.589	€ 9.424	€ 3.906	€ 3.596	€ 3.610	€ 4.245	€ 6.709	€ 6.720	€ 8.134	€ 5.693	€ 1.542	€ 1.542	€ 63.689
34	Product 31	€ 5.486	€ 8.038	€ 8.322	€ 7.071	€ 1.227	€ 1.542	€ 4.338	€ 7.752	€ 7.751	€ 2.379	€ 1.250	€ 3.381	€ 98.260
35	Product 32	€ 9.648	€ 8.036	€ 6.259	€ 3.506	€ 4.608	€ 4.434	€ 8.193	€ 4.782	€ 4.114	€ 2.463	€ 6.952	€ 8.818	€ 77.073
36	Product 33	€ 8.079	€ 2.387	€ 8.007	€ 2.205	€ 7.941	€ 5.649	€ 7.156	€ 9.973	€ 9.457	€ 7.250	€ 2.556	€ 8.958	€ 77.489
37	Product 34	€ 2.312	€ 7.225	€ 2.423	€ 9.927	€ 1.067	€ 1.542	€ 9.961	€ 6.991	€ 6.162	€ 7.316	€ 1.983	€ 3.002	€ 58.913
38	Total	€ 185.352	€ 176.366	€ 182.182	€ 188.361	€ 173.954	€ 173.318	€ 180.996	€ 183.779	€ 181.080	€ 179.051	€ 185.149	€ 94.081	€ 2.133.088

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Exercise L1.E11:

The orders, regarding a specific product and received in one month, are reported by the agents in the CSFO_L1_E11.xls file. Calculate the summary, by agent, as reported in the Excel worksheet.

Monthly report						
Ordinatives by representative						
Product: Excellor Beer, 66 cl pack						
Unit price: € 2,34						
					Summary by representative	
Seller	Units	Sales				
Rancati, Elena	160	€ 374,40				
Costa, Federica	200	€ 468,00				
Farace, Martina	180	€ 421,20				
Costa, Federica	155	€ 362,70				
Frassi, Paola	210	€ 491,40				
Zaffaroni, Fausto	90	€ 210,60				
Frassi, Paola	150	€ 351,00				
Rancati, Elena	100	€ 234,00				
Farace, Martina	35	€ 81,90				
Costa, Federica	50	€ 117,00				
Frassi, Paola	90	€ 210,60				
Rancati, Elena	100	€ 234,00				
Farace, Martina	100	€ 234,00				
Giudici, Giovanni	150	€ 351,00				
Rancati, Elena	300	€ 702,00				
Frassi, Paola	80	€ 187,20				
Rancati, Elena	100	€ 234,00				
Farace, Martina	130	€ 304,20				
Frassi, Paola	180	€ 421,20				
Giudici, Giovanni	200	€ 468,00				
Rancati, Elena	120	€ 280,80				
Zaffaroni, Fausto	50	€ 117,00				
TOTAL	2930	€ 6.856,20				



Exercise L1.E12:

Make the following table, respecting the proposed formatting. Use the CSFI_L1_E12.xlsx file as a basis for data.

	A	B	C	D	E
1					
2	Hourly wage	€ 42,55			
3					
4	Name	hours worked	Salary	Taxes (20%)	Net salary
5	Gagliardi	27	€ 1.149	€ 230	€ 919
6	Giudetti	32	€ 1.362	€ 230	€ 1.132
7	Marconi	30	€ 1.277	€ 255	€ 1.021
8	Rancaggi	40	€ 1.362	€ 272	€ 1.089
9	Zorzetti	29	€ 1.234	€ 247	€ 962
10					
11					



Exercise 13:

Solve the following exercise using the absolute references appropriately.

Consider the problem of the load losses distributed in a hydraulic circuit

Parameter	Description	Value	Unit
ρ	density	996	kg / m ³
η	viscosity	0,0008	Poiseuille
D	driven diameter		m
v	fluid speed	0,15	m / s
L	length of the pipe		m

Esercizio 1) Assegnate le formule per il calcolo del numero di Reynolds

Numero di Reynolds: $R = \frac{\rho v D}{\eta}$ Fattore di attrito: $f_F \approx 0,193 R^{-0,35}$

D	R	f _F
0,020	3735	0,0108
0,030	5603	0,0094
0,040	7470	0,0085
0,050	9338	0,0079
0,060	11205	0,0074

Or POTENZA function 0,0108

Use the trace contained

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The orders regarding a specific product and received in one month, are reported by the agents in the file. Calculate the summary, by agent, as reported in the Excel worksheet.

Product: Excellor Beer, 66 cl pack			Summary by representative	
Unit price: € 2,34			Seller	Total sales
7	Rancati, Elena	160 € 374,40	Rancati, Elena	
8	Costa, Federica	200 € 468,00	Costa, Federica	
9	Farace, Martina	180 € 421,20	Frassi, Paola	
10	Costa, Federica	155 € 362,70	Zaffaroni, Fausto	
11	Frassi, Paola	210 € 491,40	Farace, Martina	
12	Zaffaroni, Fausto	90 € 210,60	Giudici, Giovanni	
13	Frassi, Paola	150 € 351,00	TOTAL	€ -
14	Rancati, Elena	100 € 234,00		
15	Farace, Martina	35 € 81,90		
16	Costa, Federica	50 € 117,00		
17	Frassi, Paola	90 € 210,60		
18	Rancati, Elena	100 € 234,00		
19	Farace, Martina	100 € 234,00		
20	Giudici, Giovanni	150 € 351,00		
21	Rancati, Elena	300 € 702,00		
22	Frassi, Paola	80 € 187,20		
23	Rancati, Elena	100 € 234,00		
24	Farace, Martina	130 € 304,20		
25	Frassi, Paola	180 € 421,20		
26	Giudici, Giovanni	200 € 468,00		
27	Rancati, Elena	120 € 280,80		
28	Zaffaroni, Fausto	50 € 117,00		
29	TOTAL	2930 € 6.856,20		

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Exercise L1.E12:

Make the following table, respecting the proposed formatting. Use the CSFI_L1_E12.xlsx file as a basis for data.

	A	B	C	D	E
1					
2	Hourly wage	€ 42,55			
3					
	Name	hours worked	Salary	Taxes (20%)	Net salary
4					
5	Gagliardi	27	€ 1.149	€ 230	€ 919
6	Giudetti	32	€ 1.362	€ 230	€ 1.132
7	Marconi	30	€ 1.277	€ 255	€ 1.021
8	Rancaggi	40	€ 1.362	€ 272	€ 1.089
9	Zorzetti	29	€ 1.234	€ 247	€ 962
10					
11					

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Exercise 13:

Solve the following exercise using the absolute references appropriately.

Use the trace contained in the CSFI_L1_E13.xlsx file.

Consider the problem of the load losses distributed in a hydraulic circuit

Parameter	Description	Value	Unit
ρ	density	996	kg / m ³
η	viscosity	0,0008	Poiseuille
D	driven diameter		m
v	fluid speed	0,15	m / s
L	length of the pipe		m

Esercizio 1) Assegnate le formule per il calcolo del numero di Reynolds

Numero di Reynolds: $R = \frac{\rho v D}{\eta}$ Fattore di attrito: $f_F \approx 0,193 R^{-0,35}$

D	R	f_F
0,020	3735	0,0108
0,030	5603	0,0094
0,040	7470	0,0085
0,050	9338	0,0079
0,060	11205	0,0074

Or POTENZA function 0,0108

Esercizio 2) Conoscendo la relazione per la perdita di carico ΔP

$$\Delta P = \frac{2\rho v^2 f_F L}{D}$$

ΔP	L				
	1	2	3	4	5
0,020	24,31	48,61	72,92	97,22	121,53
0,030	14,06	28,12	42,18	56,24	70,30
0,040	9,53	19,07	28,60	38,14	47,67
0,050	7,05	14,11	21,16	28,22	35,27
0,060	5,52	11,03	16,55	22,06	27,58

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not operate on

logical values; in this case, multiply the conditional test

result by 1 to turn this into a number

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Exercise L1.E01bis: conditional formatting

Using the previously performed table, highlight conditional formatting for journal whose percentage cost on the total is greater than or equal to 20% as represented in this image. (tip. use "Manage rules...")

Journal	Advertisement cost	Advertisement public	Number of advertisement	Total cost	Percentage of the total	Total Public
Pub1	€ 147.420,00	9,9	6	€ 884.520,00	26%	59,4
Pub2	€ 53.000,00	5	6	€ 318.000,00	9%	30
Pub3	€ 113.100,00	7,5	6	€ 678.600,00	20%	45
Pub4	€ 52.440,00	4,9	6	€ 314.640,00	9%	29,4
Pub5	€ 70.070,00	5,6	6	€ 420.420,00	13%	33,6
Pub6	€ 124.410,00	8,4	6	€ 746.460,00	22%	50,4
Totale				€ 3.362.640,00		

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Logical operator:

In the formulas, logical operators can be used to combine multiple logical values (such as results of several conditional. The most used logical operators are:

Operator	Definition
\wedge	And
\vee	Or
$\dot{\vee}$	XOR
\neg	Not

A	B	AND	OR	XOR
0	0	0	0	0
1	0	0	1	1
0	1	0	1	1
1	1	1	1	0

If the logical values 0 and 1 are interpreted as integers, these operations may be expressed with the ordinary operations of arithmetic

AND: $A \wedge B \rightarrow A \times B$

XOR: $A \dot{\vee} B \rightarrow A + B (-A \times B)$

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Exercise L1.E02: conditional formatting and logical operator

Highlighting all sales projections of less than € 1500 and more than € 9,000. Use the CSFI_L1_E02.xls file as a basis for the data.

Products sales projections 2020	Gen	Feb	Mar	Apr	Mag	Giù	Lug	Ago	Set	Ott	Nov	Dic	Totale
Product 1	€ 7.317	€ 6.329	€ 2.110	€ 1.710	€ 2.984	€ 1.100	€ 2.467	€ 9.954	€ 9.735	€ 6.177	€ 8.173	€ 9.931	€ 68.007
Product 2	€ 2.814	€ 2.336	€ 9.198	€ 6.178	€ 2.842	€ 1.408	€ 3.737	€ 1.781	€ 5.377	€ 8.254	€ 6.908	€ 4.208	€ 55.038
Product 3	€ 2.875	€ 4.107	€ 5.528	€ 8.989	€ 9.769	€ 5.557	€ 3.456	€ 4.692	€ 1.250	€ 4.833	€ 4.880	€ 9.032	€ 64.558
Product 4	€ 4.365	€ 2.202	€ 5.607	€ 8.340	€ 5.832	€ 2.350	€ 1.669	€ 5.094	€ 9.058	€ 7.479	€ 8.057	€ 1.785	€ 62.438
Product 5	€ 9.451	€ 3.398	€ 3.472	€ 4.585	€ 3.453	€ 8.476	€ 8.118	€ 5.796	€ 2.920	€ 4.840	€ 4.717	€ 2.211	€ 61.437
Product 6	€ 7.810	€ 6.982	€ 7.018	€ 1.885	€ 4.330	€ 6.394	€ 6.989	€ 2.038	€ 6.336	€ 8.775	€ 9.805	€ 1.250	€ 71.518
Product 7	€ 9.078	€ 7.287	€ 5.006	€ 6.692	€ 6.388	€ 9.072	€ 8.969	€ 5.903	€ 7.818	€ 1.893	€ 4.311	€ 3.304	€ 78.208
Product 8	€ 2.538	€ 4.100	€ 6.328	€ 3.807	€ 7.850	€ 1.649	€ 5.253	€ 3.934	€ 4.261	€ 4.933	€ 2.931	€ 3.685	€ 51.267
Product 9	€ 3.104	€ 2.487	€ 5.349	€ 7.142	€ 9.305	€ 2.712	€ 4.629	€ 3.981	€ 1.250	€ 6.166	€ 7.167	€ 8.470	€ 61.722
Product 10	€ 5.442	€ 2.785	€ 1.842	€ 1.982	€ 2.456	€ 5.984	€ 9.540	€ 7.975	€ 2.343	€ 1.072	€ 2.216	€ 5.882	€ 47.987
Product 11	€ 7.816	€ 6.526	€ 6.938	€ 5.200	€ 8.197	€ 7.726	€ 5.955	€ 1.775	€ 2.211	€ 4.686	€ 2.309	€ 5.472	€ 69.915
Product 12	€ 2.786	€ 6.720	€ 4.754	€ 3.556	€ 2.535	€ 5.029	€ 4.740	€ 7.047	€ 9.254	€ 4.445	€ 5.633	€ 7.557	€ 64.086

June	€ 8.492,45	€ 10.022,10	€ 14.219,35	€ 11.003,81	€ 7.473,17	€ 52.073,64
July	€ 6.376,39	€ 15.729,99	€ 12.884,35	€ 12.178,20	€ 7.201,69	€ 54.370,62
August	€ 12.944,92	€ 23.277,25	€ 8.833,54	€ 12.928,62	€ 5.761,74	€ 63.746,06
September	€ 9.217,92	€ 18.845,95	€ 11.392,41	€ 11.667,41	€ 6.483,13	€ 57.606,82
October	€ 4.375,62	€ 2.953,29	€ 8.180,50	€ 16.304,29	€ 8.183,63	€ 39.997,33
November	€ 10.130,28	€ 9.936,86	€ 9.585,57	€ 15.522,44	€ 8.598,60	€ 53.773,76
December	€ 13.467,24	€ 7.966,55	€ 12.713,94	€ 20.104,65	€ 4.703,73	€ 58.956,12
Total by product	€ 105.431,92	€ 146.987,14	€ 127.965,84	€ 175.763,80	€ 89.413,98	€ 645.562,69

T  10 di 25 "A" function

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Exercise L1.E03.b: conditional formatting

Proceed as in the previous exercise step, highlighting one line every three.

Sales summary 2018

Month	Butter	Ricotta	Primo sale	Spun paste	Cream	Total per month
January	€ 7.835,31	€ 9.901,84	€ 15.292,36	€ 15.853,96	€ 8.441,21	€ 57.324,68
February	€ 6.118,82	€ 14.315,39	€ 11.196,22	€ 11.128,53	€ 10.113,58	€ 52.872,55
March	€ 7.986,38	€ 11.789,56	€ 8.264,24	€ 12.563,56	€ 4.032,54	€ 44.636,27
April	€ 7.241,70	€ 5.598,89	€ 6.732,80	€ 20.640,48	€ 9.862,34	€ 50.076,22
May	€ 10.244,89	€ 16.649,41	€ 8.669,96	€ 15.207,73	€ 8.556,62	€ 59.328,61
June	€ 9.492,45	€ 10.022,16	€ 14.219,95	€ 11.663,91	€ 7.475,17	€ 52.873,64
July	€ 6.376,39	€ 15.729,99	€ 12.884,35	€ 12.178,20	€ 7.201,69	€ 54.370,62
August	€ 12.944,92	€ 23.277,25	€ 8.833,54	€ 12.928,62	€ 5.761,74	€ 63.746,06
September	€ 9.217,92	€ 18.845,95	€ 11.392,41	€ 11.667,41	€ 6.483,13	€ 57.606,82
October	€ 4.375,62	€ 2.953,29	€ 8.180,50	€ 16.304,29	€ 8.183,63	€ 39.997,33
November	€ 10.130,28	€ 9.936,86	€ 9.585,57	€ 15.522,44	€ 8.598,60	€ 53.773,76
December	€ 13.467,24	€ 7.966,55	€ 12.713,94	€ 20.104,65	€ 4.703,73	€ 58.956,12
Total by prod	€ 105.431,92	€ 146.987,14	€ 127.965,84	€ 175.763,80	€ 89.413,98	€ 645.562,69

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Exercise L1.E03.c: conditional formatting

Try formatting a piece of spreadsheet as shown below:

	A	B	C	D	E	F	G	H	I
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Exercise L1.E04.a:

Make a spreadsheet that allows you to determine which container to use (1, 2 or 3) depending on the weight of the product to be packaged.

In particular:

- use container 1 if the weight is less than 500g

1	0	1	1	1
0	1	0	1	1
1	1	1	1	0

operations are performed in the ordinary operations of arithmetic

AND: $A \wedge B \rightarrow A \times B$

XOR: $A \vee B \rightarrow A + B (-A \times B)$

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Exercise L1.E02: conditional formatting and logical operator

Highlighting all sales projections of less than € 1500 and more than € 9,000. Use the CSFI_L1_E02.xls file as a basis for the data.

Products sales projections 2020

	Gen	Feb	Mar	Apr	Mag	Giù	Lug	Ago	Set	Ott	Nov	Dic	Totale
Product 1	€ 7.317	€ 6.329	€ 2.110	€ 1.710	€ 2.984	€ 1.100	€ 2.467	€ 9.954	€ 9.755	€ 6.177	€ 8.173	€ 9.931	€ 68.007
Product 2	€ 2.814	€ 2.336	€ 9.199	€ 6.176	€ 2.842	€ 1.408	€ 3.737	€ 1.781	€ 5.377	€ 8.254	€ 6.906	€ 4.208	€ 55.038
Product 3	€ 2.875	€ 4.107	€ 5.528	€ 8.599	€ 9.789	€ 5.557	€ 3.456	€ 4.892	€ 1.250	€ 4.833	€ 4.890	€ 9.032	€ 64.558
Product 4	€ 4.365	€ 2.202	€ 5.007	€ 6.340	€ 5.832	€ 2.350	€ 1.989	€ 5.094	€ 9.658	€ 7.478	€ 9.057	€ 1.785	€ 52.438
Product 5	€ 9.451	€ 3.398	€ 3.472	€ 4.585	€ 3.453	€ 8.476	€ 8.118	€ 5.796	€ 2.920	€ 4.840	€ 4.717	€ 2.211	€ 61.437
Product 6	€ 7.810	€ 6.982	€ 7.018	€ 1.885	€ 4.336	€ 6.394	€ 6.989	€ 2.038	€ 8.338	€ 8.775	€ 9.805	€ 1.250	€ 71.818
Product 7	€ 9.978	€ 7.267	€ 5.006	€ 6.692	€ 8.356	€ 9.072	€ 9.968	€ 5.923	€ 7.818	€ 1.983	€ 4.311	€ 3.304	€ 78.208
Product 8	€ 2.536	€ 4.100	€ 6.028	€ 3.007	€ 7.850	€ 1.949	€ 5.253	€ 9.934	€ 4.281	€ 4.933	€ 2.931	€ 9.685	€ 51.287
Product 9	€ 3.104	€ 2.487	€ 5.349	€ 7.142	€ 9.305	€ 2.712	€ 4.629	€ 3.961	€ 1.250	€ 6.166	€ 7.187	€ 8.470	€ 61.722
Product 10	€ 5.442	€ 2.783	€ 1.842	€ 1.582	€ 2.456	€ 5.584	€ 9.140	€ 7.915	€ 2.343	€ 1.012	€ 2.216	€ 5.882	€ 47.997
Product 11	€ 7.816	€ 6.626	€ 6.938	€ 5.200	€ 6.197	€ 7.728	€ 5.955	€ 1.775	€ 2.211	€ 4.688	€ 2.309	€ 5.472	€ 66.915
Product 12	€ 2.788	€ 6.720	€ 4.784	€ 3.956	€ 5.833	€ 6.029	€ 4.740	€ 7.047	€ 9.286	€ 4.445	€ 6.633	€ 1.557	€ 64.086
Product 13	€ 7.363	€ 3.248	€ 7.295	€ 9.822	€ 2.078	€ 8.372	€ 1.846	€ 1.284	€ 3.741	€ 7.764	€ 6.649	€ 2.249	€ 63.689
Product 14	€ 9.917	€ 5.004	€ 6.873	€ 8.719	€ 8.399	€ 4.204	€ 8.290	€ 2.695	€ 1.417	€ 6.003	€ 9.688	€ 4.852	€ 76.061
Product 15	€ 6.583	€ 6.499	€ 1.404	€ 1.749	€ 5.999	€ 4.398	€ 9.773	€ 1.167	€ 9.495	€ 4.916	€ 1.250	€ 5.015	€ 60.258
Product 16	€ 2.036	€ 6.359	€ 8.656	€ 4.240	€ 2.690	€ 2.211	€ 4.893	€ 1.284	€ 7.469	€ 7.903	€ 8.862	€ 1.210	€ 56.793
Product 17	€ 7.733	€ 5.814	€ 2.773	€ 4.484	€ 2.067	€ 8.424	€ 1.337	€ 1.404	€ 7.711	€ 5.579	€ 5.886	€ 6.824	€ 53.016
Product 18	€ 1.831	€ 1.422	€ 1.572	€ 5.771	€ 6.811	€ 9.131	€ 9.121	€ 1.237	€ 9.969	€ 2.694	€ 9.375	€ 1.350	€ 59.994
Product 19	€ 1.533	€ 2.938	€ 5.923	€ 9.180	€ 7.783	€ 1.542	€ 5.745	€ 6.953	€ 1.396	€ 4.121	€ 1.542	€ 6.153	€ 48.749
Product 20	€ 9.688	€ 3.310	€ 4.472	€ 3.065	€ 4.700	€ 6.384	€ 9.979	€ 9.995	€ 1.542	€ 6.893	€ 7.684	€ 5.922	€ 69.344
Product 21	€ 1.251	€ 2.433	€ 5.082	€ 7.202	€ 1.237	€ 7.456	€ 9.631	€ 2.214	€ 1.542	€ 9.343	€ 1.036	€ 2.694	€ 51.121
Product 22	€ 2.156	€ 5.823	€ 8.980	€ 5.829	€ 6.495	€ 4.953	€ 1.921	€ 2.996	€ 2.506	€ 1.542	€ 1.542	€ 9.371	€ 53.854
Product 23	€ 7.412	€ 6.020	€ 7.572	€ 9.454	€ 6.870	€ 1.237	€ 4.160	€ 2.603	€ 2.501	€ 8.753	€ 3.019	€ 7.839	€ 67.190
Product 24	€ 5.543	€ 6.817	€ 2.162	€ 5.904	€ 2.833	€ 3.214	€ 8.058	€ 5.130	€ 6.123	€ 6.827	€ 7.109	€ 9.770	€ 65.310
Product 25	€ 5.573	€ 3.323	€ 7.267	€ 5.053	€ 7.493	€ 6.250	€ 6.249	€ 9.523	€ 6.319	€ 1.250	€ 1.916	€ 7.698	€ 67.914
Product 26	€ 8.413	€ 2.571	€ 6.143	€ 7.898	€ 2.902	€ 9.117	€ 1.237	€ 8.783	€ 2.847	€ 4.293	€ 2.442	€ 8.692	€ 65.138
Product 27	€ 3.884	€ 8.349	€ 1.237	€ 4.668	€ 7.075	€ 1.916	€ 5.163	€ 4.425	€ 4.209	€ 7.456	€ 9.793	€ 5.571	€ 63.344
Product 28	€ 2.704	€ 8.279	€ 7.292	€ 6.997	€ 4.631	€ 7.528	€ 1.237	€ 1.727	€ 4.163	€ 1.542	€ 2.613	€ 4.497	€ 53.810
Product 29	€ 7.546	€ 3.960	€ 7.582	€ 2.839	€ 7.823	€ 8.110	€ 2.778	€ 9.111	€ 8.539	€ 4.208	€ 1.875	€ 3.885	€ 68.256
Product 30	€ 8.589	€ 9.424	€ 3.965	€ 3.556	€ 3.810	€ 4.245	€ 6.709	€ 6.720	€ 8.134	€ 5.653	€ 1.542	€ 1.542	€ 63.689
Product 31	€ 5.456	€ 6.636	€ 9.322	€ 7.071	€ 1.237	€ 1.542	€ 4.338	€ 7.052	€ 7.731	€ 2.376	€ 1.250	€ 3.381	€ 59.393
Product 32	€ 9.648	€ 6.636	€ 6.259	€ 3.595	€ 4.668	€ 8.434	€ 8.193	€ 4.782	€ 4.114	€ 2.463	€ 5.552	€ 9.818	€ 77.073
Product 33	€ 6.079	€ 2.357	€ 5.007	€ 2.205	€ 7.941	€ 5.849	€ 7.156	€ 9.873	€ 9.457	€ 7.250	€ 2.558	€ 6.959	€ 77.489
Product 34	€ 2.312	€ 7.225	€ 4.243	€ 9.927	€ 1.067	€ 1.542	€ 8.961	€ 6.991	€ 6.162	€ 7.318	€ 1.983	€ 3.002	€ 58.913
Total	€ 185.352	€ 176.366	€ 182.192	€ 188.361	€ 173.954	€ 173.318	€ 190.996	€ 163.779	€ 181.090	€ 179.051	€ 165.149	€ 174.081	€ 2.133.689

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Exercise L1.E03.a: conditional formatting

Format the table contained in the CSFI_L1_E03.xls file as shown in the figure. Use the conditional formatting function.

Sales summary 2018

Month	Butter	Ricotta	Primo sale	Spun paste	Cream	Total per month
January	€ 7.835,31	€ 9.901,84	€ 15.292,36	€ 15.853,96	€ 8.441,21	€ 57.324,68
February	€ 6.118,82	€ 14.315,39	€ 11.196,22	€ 11.128,53	€ 10.113,58	€ 52.872,55
March	€ 7.986,38	€ 11.789,56	€ 8.264,24	€ 12.563,56	€ 4.032,54	€ 44.636,27
April	€ 7.241,70	€ 5.598,89	€ 6.732,80	€ 20.640,48	€ 9.862,34	€ 50.076,22
May	€ 10.244,89	€ 16.649,41	€ 8.669,96	€ 15.207,73	€ 8.556,62	€ 59.328,61
June	€ 9.492,45	€ 10.022,16	€ 14.219,95	€ 11.663,91	€ 7.475,17	€ 52.873,64
July	€ 6.376,39	€ 15.729,99	€ 12.884,35	€ 12.178,20	€ 7.201,69	€ 54.370,62
August	€ 12.944,92	€ 23.277,25	€ 8.833,54	€ 12.928,62	€ 5.761,74	€ 63.746,06
September	€ 9.217,92	€ 18.845,95	€ 11.392,41	€ 11.667,41	€ 6.483,13	€ 57.606,82
October	€ 4.375,62	€ 2.953,29	€ 8.180,50	€ 16.304,29	€ 8.183,63	€ 39.997,33
November	€ 10.130,28	€ 9.936,86	€ 9.585,57	€ 15.522,44	€ 8.598,60	€ 53.773,76
December	€ 13.467,24	€ 7.966,55	€ 12.713,94	€ 20.104,65	€ 4.703,73	€ 58.956,12
Total by product	€ 105.431,92	€ 146.987,14	€ 127.965,84	€ 175.763,80	€ 89.413,98	€ 645.562,69

Tip: use "ROW"/"RIF.RIGA" function

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Exercise L1.E03.b: conditional formatting

Proceed as in the previous exercise step, highlighting one line every three.

Sales summary 2018

Month	Butter	Ricotta	Primo sale	Spun paste	Cream	Total per month
January	€ 7.835,31	€ 9.901,84	€ 15.292,36	€ 15.853,96	€ 8.441,21	€ 57.324,68
February	€ 6.118,82	€ 14.315,39	€ 11.196,22	€ 11.128,53	€ 10.113,58	€ 52.872,55
March	€ 7.986,38	€ 11.789,56	€ 8.264,24	€ 12.563,56	€ 4.032,54	€ 44.636,27

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Test Data Validation, "Convalida dati"

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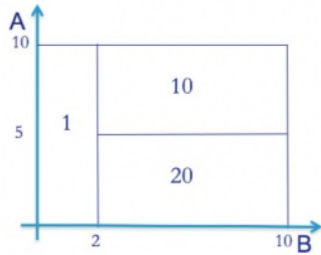


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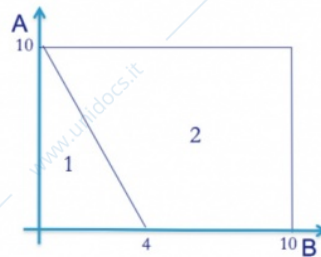
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Exercise L1.E05:

Make a spreadsheet that, assigned the values A and B, calculate the result according to the following two diagrams (case 1 and case 2):



Case 1



Case 2

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Exercise L1.E05:

Solution: file CSFI_L1_E05_sol.xlsx

	A	B	C	D	E
1					
2					
3					
4		A	8		
5		B	3		
6					
7		Results:	20		
8					
9					
10					
11					
12					

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Exercise L1.E05.b:

Make a spreadsheet that, assigned the values A and B, write the text "safe" or "alarm" according to the following diagram: