3. Europe

Europe has more than forty countries. Among these there are countries for which only a part of their area belongs to Europe. File `europebase.txt`, which is ISO 8859-2-encoded and tagged by tabs, contains the area (km^2), the population (capita), the economic state ($) of the countries of Europe and the European Union arranged into alphabetical order according to the names of the countries.

During the solution take the followings into consideration.

- *Whenever possible, use a formula, function or reference in the solution so that the results remain correct even if the source data are modified.*
- *There are parts in the exercise that use the results from a previous question. If you could not solve the previous part completely, use its solution as it is, or instead of a formula resulting in a number use an arbitrary value and work on with it. This way you can receive marks for these exercise parts as well.*
- *If required, you can perform auxiliary calculations from Row 65 downwards or to the right of Column K.*

1. Open data file `europebase.txt` tagged by tabs using a worksheet processing program. Save the table in the default format of the worksheet processor as `europe`.
2. In column *Population density* calculate the population density of the individual countries (capita/km^2) using the data in columns *B* and *C*. Display the results rounded to two decimal digits using a function.
3. Create the following auxiliary table starting from cell *A52*. In the second column of the auxiliary table calculate the total area and the total population of Europe. Use the area and population values that geographically belong to Europe in your calculations. Upon determining the average population per country take only the countries that have population belonging to Europe into consideration.

	A	B
52	Area of Europe	
53	Population of Europe	
54	Average population	

4. Create the following auxiliary table starting from cell *A56*. In the second column of the table calculate the total area and the total population of the countries of the European Union and finally the number of the members of the Union. (The member states are indicated by "***1***" in column *G*.)

	A	B
56	Area of the EU	
57	Population of the EU	
58	Number of EU members	

5. In column *J* determine which countries do not belong to Europe with their full area. Display text "not fully" for these countries. Do not display anything in the cell for countries that belong to Europe with their full area.

6. The GNI value is the Gross National Income, which is given in US dollars and is an important economic indicator of the countries. Based on the GNI values, the countries are ranked into four categories. The following table gives the limits of these categories. Based on these, determine in column *F* the category which the individual countries belong into. Do not display anything for countries where the GNI data is not given. If you perform auxiliary calculations, pay attention to performing these only in the designated range.

Below $735	A
$736-$2935	B
$2936-$9075	C
Above $9076	D

7. Format the table according to the example and the following descriptions.
   a. Set the units. Population is measured in "capita", GNI values are measured in "$". (The "$" mark may appear either before or after the numbers.)
   b. Set thousands separation for the number formats.
   c. Format the first row and the row containing the data of Hungary according to the example.
   d. Border the table according to the example. Use double line below the first row and a line thicker than the default line around the whole table.
8. In the page setup set landscape orientation and top and bottom margins of 1.5 cm. During printing only the table (*A1:J49*) should be visible, but it should fit on one page.

30 marks

Example:

	A	B	C	D	E	F	G	H	I	J
1	Countries and their areas	Area	Total population	Population density	GNI	GNI category	Member of the European Union	Area geographically belonging to Europe	Population of the area belonging to Europe	Which countries do not belong fully to Europe?
2	Albania	28 748	3 170 000 capita	110,26	$2 960	C	0	28 748	3 170 000 capita	
3	Andorra	468	83 137 capita	177,64			0	468	83 137 capita	
4	Austria	83 858	8 340 924 capita	99,46	$39 590	D	1	83 858	8 340 924 capita	
5	Azerbaijan	86 600	7 911 974 capita	91,36	$1 850	B	0	39 730	4 198 491 capita	not fully
6	Belarus	207 600	9 690 000 capita	46,67	$3 380	C	0	207 600	9 690 000 capita	
7	Belgium	30 510	10 666 866 capita	349,61	$38 600	D	1	30 510	10 666 866 capita	
8	Bosnia-Herzegovina	51 129	3 935 000 capita	76,96	$2 980	C	0	51 129	3 935 000 capita	
9	Bulgaria	110 910	7 640 238 capita	68,88	$3 990	C	1	110 910	7 640 238 capita	
10	Ciprus	5 895	788 457 capita	133,75	$18 430	D	1	0	0 capita	not fully
11	Croatia	56 542	4 435 400 capita	78,44	$9 330	D	0	56 542	4 435 400 capita	
12	Czechia	78 866	10 424 926 capita	132,18	$12 680	D	1	78 866	10 424 926 capita	
13	Denmark	43 094	5 489 022 capita	127,37	$51 700	D	1	43 094	5 489 022 capita	
14	Estonia	45 226	1 340 600 capita	29,64	$11 410	D	1	45 226	1 340 600 capita	
15	Finland	337 030	5 320 100 capita	15,78	$40 650	D	1	337 030	5 320 100 capita	
16	France	547 030	64 473 140 capita	117,86	$36 550	D	1	551 695	61 875 822 capita	
17	Georgia	69 700	4 677 401 capita	67,10	$1 560	B	0	49 240	2 447 176 capita	not fully
18	Germany	357 021	82 169 000 capita	230,15	$36 620	D	1	357 021	82 169 000 capita	
19	Greece	131 940	11 215 000 capita	85,00	$21 690	D	1	131 940	11 215 000 capita	
20	**Hungary**	**93 030**	**10 035 000 capita**	**107,86**	**$10 950**	**D**	**1**	**93 030**	**10 035 000 capita**	
21	Iceland	103 000	319 355 capita	3,10	$50 580	D	0	103 000	319 355 capita	
22	Ireland	70 280	4 422 100 capita	62,92	$45 580	D	1	70 280	4 422 100 capita	
23	Italy	301 230	59 619 290 capita	197,91	$32 020	D	1	301 230	59 619 290 capita	
24	Kazakhstan	2 717 300	15 185 844 capita	5,58	$3 790	C	0	263 200	1 285 174 capita	not fully
25	Latvia	64 589	2 268 000 capita	35,11	$8 100	C	1	64 589	2 268 000 capita	