

GDP Program

Download the data file “*Europe_Data.txt*” which contains the data for 40 selected countries in Europe.
Then write a program as follows:

1. Write a class definition `Country` (`Country.java`):
 - Five private instance variables that respectively represent the country name, UN continental region, UN statistical region, population, and gross domestic product (GDP).
 - Two overloaded constructors:
 - Default constructor
 - Another constructor to initialize each variable to an appropriate value.
 - Getters and setters
 - A method that calculates and returns the GDP per capita.
 - `toString()` method. It returns a well formatted string representation of the data members.
2. Write a menu-driven client program. The program should repeatedly execute until the user choose not to.
 - Use an **array** of objects of the class `Country` to store the data for each country. **Do not use `ArrayList`.**
 - Use a `JFileChooser` object to locate the data file “*Europe_Data.txt*” and read data to populate the array.
Do not use `try` and `catch` to handle exceptions.
 - Use a menu to do the following:

```
1 --- Output the country information
2 --- Output the average GDP
3 --- Output the country with the highest GDP per capita
4 --- Search a country and output its information
5 --- Output countries in each UN statistical region
6 --- Exit
```

Refer to the sample run on the next page.

Due: Wednesday, 8/31/22

- To receive full credit, the assignment must be submitted by the due date. Late submissions will incur a penalty of 5% per day.
- Upload the zip file of the entire project or individual source code files to D2L.

Each program should have a file header section. /* * Author: Your name * Date: Date of completion * Assignment: Assignment # NameOfSourceCode.java * Description: The program description */	Up to 5% deduction
Each program should be written with the appropriate form and style. Use indentation, blank line, and comments to make the source code easy to read.	Up to 5% deduction
Use Java naming convention and meaningful names to name the classes, methods, variables, constants, and other identifiers in the programs.	Up to 5% deduction
Format the output appropriately	Up to 5% deduction

Sample Run

```

1 --- Output the country information
2 --- Output the average GDP
3 --- Output the country with the highest GDP per capita
4 --- Search a country
5 --- Output countries in each statistical region
0 --- Exit

Enter a command: 1

Name                Continental Region  Statistical Region  Population      GDP (Millions)   GDP Per Capita
Austria              Europe             Western_Europe     8,735,453      $477,672         $54,682.00
Belgium              Europe             Western_Europe     11,429,336     $562,229         $49,191.75
France               Europe             Western_Europe     64,979,548     $2,925,096      $45,015.64
Germany              Europe             Western_Europe     82,114,224     $4,211,635      $51,289.96
Luxembourg           Europe             Western_Europe     583,455        $72,461         $124,192.95
Netherlands          Europe             Western_Europe     17,035,938     $945,327        $55,490.16
Switzerland          Europe             Western_Europe     8,476,005      $741,688        $87,504.43
Albania              Europe             Southern_Europe    2,930,187      $15,289         $5,217.76
Bosnia_and_Herzegovina Europe             Southern_Europe    3,507,017      $20,340         $5,799.80
Croatia              Europe             Southern_Europe    4,189,353      $61,056         $14,574.09
Greece               Europe             Southern_Europe    11,159,773     $226,774        $20,320.66
Italy                 Europe             Southern_Europe    59,359,900     $2,181,970      $36,758.32
Malta                Europe             Southern_Europe    430,835        $14,873         $34,521.34
Montenegro           Europe             Southern_Europe    628,960        $5,547          $8,819.32
Portugal             Europe             Southern_Europe    10,329,506     $248,891        $24,095.15
Republic_of_Macedonia Europe             Southern_Europe    2,083,160      $13,085         $6,281.32
San_Marino           Europe             Southern_Europe    33,400         $1,809          $54,161.68
Serbia               Europe             Southern_Europe    8,790,574      $48,279         $5,492.13
Slovenia             Europe             Southern_Europe    2,079,976      $56,933         $27,371.95

```

Spain	Europe	Southern_Europe	46,354,321	\$1,506,439	\$32,498.35
Denmark	Europe	Northern_Europe	5,733,551	\$369,760	\$64,490.57
Estonia	Europe	Northern_Europe	1,309,632	\$30,821	\$23,534.09
Finland	Europe	Northern_Europe	5,523,231	\$289,557	\$52,425.29
Iceland	Europe	Northern_Europe	335,025	\$29,109	\$86,886.05
Ireland	Europe	Northern_Europe	4,761,657	\$385,142	\$80,884.03
Latvia	Europe	Northern_Europe	1,949,670	\$35,915	\$18,421.07
Lithuania	Europe	Northern_Europe	2,890,297	\$54,352	\$18,804.99
Norway	Europe	Northern_Europe	5,305,383	\$443,252	\$83,547.60
Sweden	Europe	Northern_Europe	9,910,701	\$600,771	\$60,618.42
United_Kingdom	Europe	Northern_Europe	66,181,585	\$2,936,286	\$44,367.12
Belarus	Europe	Eastern_Europe	9,468,338	\$59,246	\$6,257.28
Bulgaria	Europe	Eastern_Europe	7,084,571	\$64,781	\$9,143.96
Czech_Republic	Europe	Eastern_Europe	10,618,303	\$251,577	\$23,692.77
Hungary	Europe	Eastern_Europe	9,721,559	\$163,541	\$16,822.51
Moldova	Europe	Eastern_Europe	4,051,212	\$9,202	\$2,271.42
Poland	Europe	Eastern_Europe	38,170,712	\$614,190	\$16,090.61
Romania	Europe	Eastern_Europe	19,679,306	\$245,590	\$12,479.61
Russia	Europe	Eastern_Europe	143,989,754	\$1,719,000	\$11,938.35
Slovakia	Europe	Eastern_Europe	5,447,662	\$111,483	\$20,464.38
Ukraine	Europe	Eastern_Europe	44,222,947	\$119,134	\$2,693.94

```

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```

Enter a command: 2

Average GDP: \$571,752.55 (millions)

```

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5 --- Output countries in each statistical region
0 --- Exit

```

Enter a command: 3

The country with the highest GDP per capita:

Name	Continental Region	Statistical Region	Population	GDP (Millions)	GDP Per Capita
Luxembourg	Europe	Western_Europe	583,455	\$72,461	\$124,192.95

```
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```

Enter a command: 4

Enter a country to search: France

Name	Continental Region	Statistical Region	Population	GDP (Millions)	GDP Per Capita
France	Europe	Western_Europe	64,979,548	\$2,925,096	\$45,015.64

```
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```

Enter a command: 5

Western_Europe:

Austria Belgium France Germany Luxembourg Netherlands Switzerland
7 countries

Southern_Europe:

Albania Bosnia_and_Herzegovina Croatia Greece Italy Malta Montenegro Portugal Republic_of_Macedonia San_Marino Serbia
Slovenia Spain
13 countries

Northern_Europe:

Denmark Estonia Finland Iceland Ireland Latvia Lithuania Norway Sweden United_Kingdom
10 countries

Eastern_Europe:

Belarus Bulgaria Czech_Republic Hungary Moldova Poland Romania Russia Slovakia Ukraine
10 countries

```
1 --- Output the country information
2 --- Output the average GDP
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4 --- Search a country
5 --- Output countries in each statistical region
0 --- Exit
```

Enter a command: 0

Thank you for using this program.