The csv file "Data2.csv" contains the data for the value reach of exports for all countries in the world for the year 2016 (source: World Bank). Write Python code to a single .py file that does the following (in the given order):

(a) Read the csv file "Data2.csv" to Python and save the data as a DataFrame object.

(1 mark)

(b) Count the number of countries that are represented in the data. Print out the count. Note that country names are in the column 'ReporterISO3'. (1 mark)

(c) Create a new DataFrame called 'df\_markets' that contains the following columns (in the given order):

|  |  |  |  |
| --- | --- | --- | --- |
| ReporterISO3 | StartYearMarkets | EndYearMarkets | Change |

The column 'Change' contains the difference between 'EndYearMarkets' and 'StartYearMarkets' for each row, that is,

Change = EndYearMarkets – StartYearMarkets.

Print the DataFrame. (1 mark)

(d) From the DataFrame in part (c), filter the negative changes that are more than 10 in magnitude. Save the filtered DataFrame as a new DataFrame called 'negative\_markets\_change'. Then summarize the data by computing the mean, standard deviation, minimum change, and maximum change. Save the statistics into a Series called 'change\_statistics' with the type of statistics as the index. Print the Series. (1 mark)

(e) Calculate the total Total Annual Trade Value for each country by summing up (EndYearTradeValue – StartYearTradeValue) for each Product Code under that country. Save the data in a Series named 'total\_annual\_trade\_value' with the country's name as the index. Hint: Use the **.groupby** DataFrame method. Print the Series. (1 mark)