Excel Assignment

1. Complete the worksheet 'COVID-19 Geographical Distribution' by filling the two columns: 'geold' and 'countryterritorycode'. 'geold' is the last three letters of its corresponding 'countryandterritories' (lower case); 'countryterritorycode' is the first five letters of its corresponding 'countryandterritories' (upper case).

   Geold(G2): =LOWER(RIGHT(G2,3)). Then apply the formula to the entire column.
   Countryterritorycode (H2): =UPPER(LEFT(G2,5)). Then apply the formula to the entire column.

2. Complete the 'simple summary' table on the current page.
   Average case amount (O14): = AVERAGE(E2:E14867)
   Lowest daily death amount (O15): = MIN(F2:F14867)
   Highest daily death amount (O16): = MAX(F2:F14867)
   Subtotal (sum of deaths) (O17): = SUBTOTAL(9,F2:F14867)

3. Complete two tables ('Find Total Case Amount' & 'AVERAGEIF(S)') on the second worksheet 'SUM AVERAGEIF(S)'.

   For table 'Find Total Case Amount', there are three cases:
   1. Find the total case amount of country 'Aruba' and count the frequency.
      Q7=SUMIF(G2:G14867,M7,E2:E14867)
      R7=COUNTIF(G:G,M7)

   2. Find the total case amount of country 'Brunei_Darussalam' happened in March and count the frequency
      Q8=SUMIFS(E:E,G:G,M8,C:C,N8)
      R8=COUNTIFS(G:G,M8,C:C,N8)

   3. Find the total case amount of country 'Afghanistan' happened from April 16 to the end of the month and count the frequency
      Q9=SUMIFS(E:E,G:G,M9,C:C,N9,B:B,O9)
      R9=COUNTIFS(G:G,M9,C:C,N9,B:B,O9)

   For table 'AVERAGEIF(S)', there are two cases:
   1. Find the average number of deaths in Asia
      N14=AVERAGEIF(K:K,"Asia",F:F)
   2. Find the average number of deaths in Asia in April (keep 2 decimals)
      N15=AVERAGEIFS(F:F,K:K,"Asia",C:C,"4")

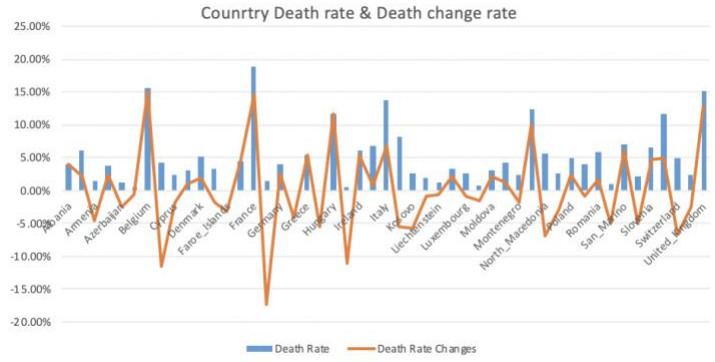
4. Go to the worksheet 'IF(S)'. Add symbols and color the 'Death Rate Changes' to make the results more intuitive. If the rate is positive, add a ▲ after the rate and show the result in green. If the rate is negative, add a ▼ after the rate and show the result in red. The answer should roughly look like this:

Albania	795	31	3.90%	4%▲
Andorra	748	45	6.02%	2%▲
Armenia	2386	35	1.47%	-5%▼
Austria	15597	598	3.83%	2%▲
Azerbaijan	1932	25	1.29%	-3%▼
Belarus	16705	99	0.59%	-1%▼
Belgium	49906	7844	15.72%	15%▲
Bosnia_and_Herzegovina	1857	77	4.15%	-12%▼

Insert (tab) >symbol>(find the symbol you need)>copy and paste to the worksheet
Format Cells>Custom>Type: [Color10]0%"▲";[Red]-0%"▼";

Color code:
https://docs.microsoft.com/en-us/previous-versions/office/developer/office-2007/cc296089(v=office.12)?redirectedfrom=MSDN

And then create a combo chart of death rate & death change rate. The Chart should be roughly like this:



Select column A, D, E > insert> combo chart

5. Complete column from F to I on the 'IF(S)' worksheet. The instruction is shown as what the headers state. For example, mark the country with the word 'safe' if the death rate is lower than 2%; otherwise, leave it blank. (Hint: use IF function)

Column F2: =IF(D2<2%,"Safe",""). Then apply the formula to the entire column

Column G2: =IF(AND(D2>2%, D2<8%),"Moderate",""). Then apply the formula to the entire column

Column H2: =IF(D2<2%,"Safe",IF(AND(D2>2%,D2<8%),"Moderate",D2)).
OR:
=IFS(D2<2%,"safe", D2<8%,"moderate", D2>8%,D2)
Then apply the formula to the entire column

Column I2: =IF(OR(D2<=2%,D2>=10%),"Brilliant",""). Then apply the formula to the entire column

6. Use the data on the first worksheet 'COVID-19 Geographical Distribution' to create a Pivotable on a new worksheet named 'VLOOKUP'. The Pivotable will show the total number of cases and total deaths amount of each country. Set ContinentExp and month as the filters. Then create a table on the side as a QuickBooks for finding any specific country's total cases amount and death amount. (Hint: use data validation to create a drop-down button and then use VLOOKUP for results)

   - Go to 'COVID-19 Geographical Distribution' and select the entire table (from column A to column K)
   - Insert (tab) > Pivot table>to a new worksheet
   - Put 'ContinentExp' and 'Month' under 'Filters'
   - Put 'Countriesandterritories' under 'rows'
   - Put 'cases' and 'deaths' under 'values'.
   - Click any random cell (me choose at F7) > data > data validation > allow: list > source = $A$6:$A$214
   - Total cases =VLOOKUP(F7,A6:C214,2,FALSE)
   - Total death = =VLOOKUP(F7,A6:C214,3,FALSE)
   - Change the worksheet title to 'VLOOKUP'.

7. Complete column D by using HLOOKUP on the 'HLOOKUP' worksheet.
   D2 =HLOOKUP(A2,$B$19:$I$20,2,FALSE). Then apply the formula to the entire column.

8. Go to the 'Index & Match' worksheet. Create a table on the side as a QuickBooks for finding any specific country's % of the country's deaths and total cases amount. This time use index & match functions.
   - Click any random cell (me choose at F14) > data > data validation > allow: list > source = =$A$6:$A$216
   - % of country's deaths =INDEX(C6:C215,MATCH(F14,A6:A215,0))
   - Cases =INDEX(B6:B214,MATCH(F14,A6:A216,0))

9. Use the first worksheet data to create a new pivot table on a new worksheet. Name it 'Pivotable-bar chart'. Show the total deaths and total cases of each continent and sort the

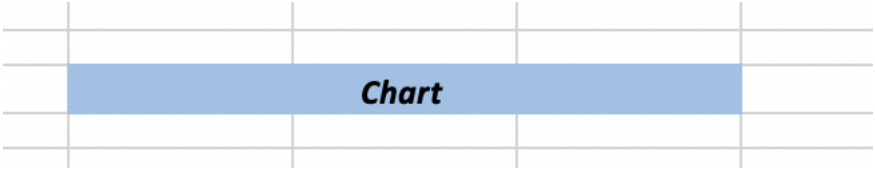
number from largest to smallest (of total cases). Use month and year as filters. Then create a bar chart based on the table you get. Add a chart title (whatever you think is reasonable).

- Go to 'COVID-19 Geographical Distribution' and select the entire table (from column A to column K)
- Insert (tab) > Pivot table>to a new worksheet
- Put 'Year and 'Month' under 'Filters'
- Put 'ContinentExp under 'rows'
- Put 'cases' and 'deaths' under 'values'.
- Choose any cell of 'sum of cases'>Right click > sort > from largest to smallest
- Choose any cell of the pivotable > Pivotable Analyze (tab) > PivotChart > (if it's not the type you want), right click the chart > change chart type > bar.

10. Go to the 'Line chart' worksheet, create one line chart, and one column chart based on the given pivot table. Go to the 'Pie Chart' worksheet and create a pie chart; then move to the 'Map' worksheet and create a map.

    Choose any cell of the pivotable > Pivotable Analyze (tab) > PivotChart > (if it's not the type you want), right click the chart > change chart type

11. Add a title at G3:I3 on all worksheets with a pivotable chart ('pivotable-bar chart', 'Line Chart', 'Pie Chart', 'Map'). Title font: Calibri (Body), size 16, bold, italic, background color is blue. The title should look like this:



Request: Do not go to each worksheet typing and editing font. Instead, you should create a macro on one worksheet and run your macro on the remaining worksheets.

- Open 'pivotable-bar chart' worksheet
- Developer (tab)* > record macro > macro name: chartitle > store macro in: this workbook > OK
- Select G3 > type: Chart > Home (tab) > change the font to Calibri (Body), size 16, bold, italic, blue background> select G3:I3 > Home (tab) > Merger & Center
- Go back to developer (tab) > stop recording
- Move to the 'Line Chart' worksheet > developer (tab) > Macros > choose the macro you just created (chartitle) > run
- Repeat the last step on the remaining two worksheets.

If you don't have a developer tab:

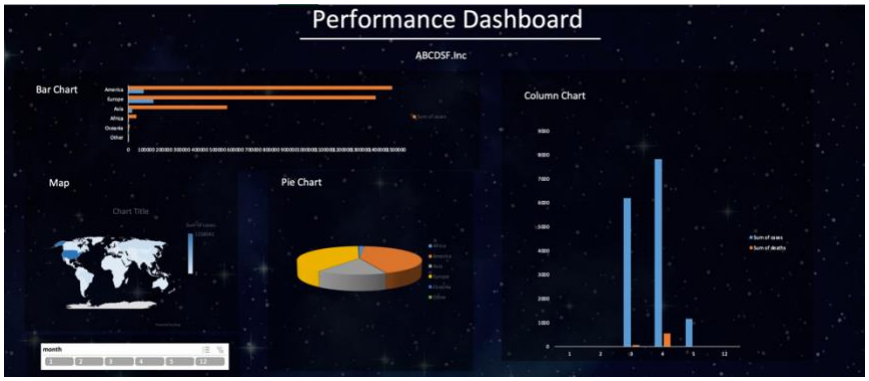
- File (tab) > options > customize ribbon > on the right hand size, check 'Developer' box > OK

OR

- Tools (toolbar) > Macro > record macro

12. Create a new worksheet named 'Dashboard'. Add a background image and then add a title on the top called 'Performance Dashboard'. Put the company's name 'ABCDSF.Inc' under the title. Add the Pivotable charts (bar, column, pie charts) and the map to the 'Dashboard' worksheet. You can put the charts anywhere you believe they will be a good fit. Add months as a filter(slicer) and connect all the pivotable charts to your filter (i.e. when you change the month, all the charts will change correspondingly).

    Here is a sample:
    (do not worry about the layout or the background color. Only focus on 1. gathering the charts. 2. create a slicer. 3.connect the slicer to every single chart)



Key points:

- The background image:
  Layout (tab) > unclick gridliness_view > background
- Title: Insert (tab) > textbox
- Charts: copy and paste from each worksheet
- Filter/slicer:
  Click any chart > insert (tab)> slicer > month
- Connection among the charts:
  Right click the slicer you made > report connections > check all the pivotable you are using on the current worksheet.

13. Go to the 'Timeseries' worksheet. Use FORECAST.EST function to complete the column from C132 to C219. Create a line chart for the completed 'Worldwide Cases Amount' table. Please describe the chart. What can you tell from it?

- C131=B131
- C132=FORECAST.ETS(A132,B7:B131,A7:A131,0). Apply the formula to the column C132:C219.
- Select the entire table > insert (tab) > line chart

The chart is divided into two parts: historical data and the forecasting trend. For the first part, it shows that during the past five months, the total number of global infections continues to rise over time — it increases from 0 to 80000 and peaks at the end of April. A large-scale outbreak began in March.
It is estimated that the outbreak will continue to fluctuate, and a second wave of large outbreaks will occur between June and July, peaking in mid-July. After that, we can expect a decrease in the total amount of cases.

Easier way for excel 2016:
-Select A6:B131 > Data (tab)* > Forecasting sheet > (On the chart) forecast ends: July 31, 2020

*If you don't have data analysis yet, here are the steps to load the Analysis ToolPak in Excel 2016:

1. Click the **Tools** menu, and then click **Excel Add-ins**.
2. In the **Add-Ins available** box, select the **Analysis ToolPak** check box, and then click **OK**.
    a. If **Analysis ToolPak** is not listed in the **Add-Ins available** box, click **Browse** to locate it.
    b. If you get a prompt that the Analysis ToolPak is not currently installed on your computer, click **Yes** to install it.
    c. Quit and restart Excel.

Now the **Data Analysis** command is available on the **Data** tab.