## Creative Coding 2

## Column and Line Charts

**Note:** Tables are on page 6 ff

**Chart Types Summary:**

1. Column/Bar Chart – used to visually compare values across a few categories.
   1. Clustered column/bar chart – used when the order of categories is not important.
   2. Stacked column/bar chart – use to (i) compare parts of a whole; (ii) show how parts of a whole change over time.
   3. 100% stacked column/bar chart – use to (i) compare the percentages that each value contributes to a total; (ii) show how the percentages that each value contributes changes over time.
2. Line chart – used to show trends over time (years, months, days) or categories. Used when the order of categories is important or there are many data points.

**Question 1 Demo:**

Create a bar/column chart based on Table 1 to be found below.

To create a chart, go to the ribbon and click ***Insert***.

Choose the type of graph you want to use to display your data. For Question 1, we want to create a bar/column chart based on Table 1. Select a 2-D clustered column (first picture) from the ***Charts*** panel.

On selecting the relevant graph, a blank window will appear. Right click and a drop down menu appears. Choose ***Select Data***. On clicking ***Select Data***, a ***Select Data*** ***Source*** window will appear – **Figure 1**.

Click the ***add*** option from the left hand side. An ***Edit Series*** window will appear – **Figure 2**.

Graphical user interface, text

Description automatically generated

Figure

Graphical user interface, application

Description automatically generated

Figure

Click on the ***Series Values*** window (delete the ={1}) and select the values {12, 15, 43, 22, 115, 83} from Table 1 and click **OK**.

Note that since this data has only one series, we can ignore the ***Series Name*** window for this question. Refer to Question 2 for an example with multiple series.

Now a chart similar to Figure 3 should appear. We’re nearly there but a few more details have to be added to finish this chart.

Figure

**Steps to complete the chart:**

* Click into the Chart Title above the chart and give it a relevant title.
* Notice that the horizontal axis labels don’t display the categories – in this case the different fruit types. To add these categories, right click on the chart and choose ***Select Data***. This time click ***Edit*** from the right hand side of the ***Select Data Source*** window, and select the list of fruits from the table.
* Finally we need to add axis titles. To do this, make sure that the chart area is selected and click ***Add Chart*** ***Element*** from the ***Chart Layouts*** panel above. Choose ***Axis Titles*** from the drop down menu and add relevant horizontal and vertical titles to the chart.

We now have a finished column chart! See Figure 4 below.

Figure

**Question 2 Demo:**

Create a (i) clustered bar/column chart (ii) stacked bar/column chart based on Table 2 to be found below.

(i)

As for Question 1, to create a chart, go to the ribbon and click ***Insert***.

Choose the type of graph you want to use to display your data. For Question 2, we want to create a bar/column chart based on Table 2. Select a 2-D clustered column (first picture) from the ***Charts*** panel.

On selecting the relevant graph, a blank window will appear. Right click and a drop down menu appears. Choose ***Select Data***. On clicking ***Select Data***, a ***Select Data*** ***Source*** window will appear – **Figure 1** above.

Click the ***add*** option from the left hand side. An ***Edit Series*** window will appear – **Figure 2** above. STOP!

So far, the steps are the same as for Question 1. However the data for this question are slightly more complex in that there are 4 categories for every year.

**That is:**

Instead of ***Total Holidays Taken*** for each year, the holidays taken for each year are broken down into holidays to ***Europe***, ***USA***, ***Middle East***, and ***Other***. ***Therefore we have 4 series and we need a colour coded legend to differentiate between each series (destination).***

***Steps:***

Click on the ***Series Name*** window and select the ***Europe*** cell from Table 2, then click on ***Series Values*** and select the corresponding values for ***Europe***. Click **OK**. Do the same for ***USA*** etc.

Now a chart similar to Figure 5 should appear.

Figure

There are a few more additions needed before we have a finished graph – see Figure 6 and Question 1 above.

Note that a legendcan be added from ***Add Chart Element*** once the chart is selected.

Graphical user interface, application, table, Excel

Description automatically generated

Figure

(ii)

To create a stacked column chart, we simply right click on the existing chart and choose ***Change Chart Type*** from the drop down menu. Choose ***Stacked Column***.

Figure

**Question 3:**

Create a line chart based on the Table 3.

**Question 4:**

Table 4 shows the number of employees in a digital media company “EuroMedia” during the period 2016 to 2021 - broken down into 3 categories (technical, admin support and management).

Create 2column charts based on Table 4 which display the years along the horizontal axis – (i) A clustered column chart (ii) A stacked column chart

**Question 5:**

Table 5 shows the number of employees in a rival fast-growing company “AllMedia” during the same period 2016 to 2021 - broken down into the same 3 categories (technical, admin support and management).

Create a (i) clustered column chart (ii) line chart comparing the breakdown of the management category in EuroMedia vs AllMedia across the given 6 year period.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 1** |  |  |  |  |  |  |  |
| **Average Number of Fruit Sold In A Certain Supermarket in 2021** | | | | | | | |
| **(OVER A PERIOD OF ONE DAY)** | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **Type of Fruit** | **Apples** | **Bananas** | **Oranges** | **Peaches** | **Lemons** | **Limes** |  |
| **No. Sold** | 12 | 15 | 43 | 22 | 115 | 83 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table 2** |  |  |  |  |  |  |
| **FLYAWAY TRAVEL HOLIDAY DESTINATION BREAKDOWN** | | | | | | |
| **FROM 2011 TO 2016** | | |  |  |  |  |
|  |  |  |  |  |  |  |
| **Year** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** |
| **Europe** | 385 | 350 | 326 | 341 | 286 | 297 |
| **USA** | 86 | 78 | 124 | 112 | 95 | 137 |
| **Middle East** | 40 | 56 | 87 | 88 | 84 | 102 |
| **Other** | 112 | 65 | 156 | 143 | 112 | 161 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table 3** |  |  |  |  |  |  |
| **ANNUAL WORLDWIDE PRODUCTION OF COFFEE** | | | | | |  |
| **FROM 2014 TO 2019 (IN MILLION 60 KILOGRAM BAGS)** | | | | | | |
|  |  |  |  |  |  |  |
| **Year** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** |
| **Coffee Production (in million 60 kg bags)** | 150.3 | 156.13 | 162.32 | 163.69 | 172.46 | 165.05 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 4** |  |  |  |  |  |  |  |  |  |  |  |
| **NO OF EMPLOYEES IN DIGITAL MEDIA COMPANY "EUROMEDIA" DURING THE PERIOD 2016 to 2020** | | | | | | | | | | | |
| **BROKEN DOWN INTO 3 CATEGORIES - TECHNICAL, ADMIN SUPPORT AND MANAGEMENT** | | | | | | | | | | |  |
| **Euromedia** | |  |  |  |  |  |  |  |  |  |  |
| **No of Employees** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |  |  |  |  |  |
| **Technical** | 11 | 32 | 35 | 34 | 37 | 41 |  |  |  |  |  |
| **Admin Support** | 6 | 12 | 9 | 11 | 9 | 10 |  |  |  |  |  |
| **Management** | 4 | 5 | 6 | 5 | 4 | 4 |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 5** |  |  |  |  |  |  |  |  |  |  |  |
| **NO OF EMPLOYEES IN DIGITAL MEDIA COMPANY "ALLMEDIA" DURING THE PERIOD 2016 to 2020** | | | | | | | | | | | |
| **BROKEN DOWN INTO 3 CATEGORIES - TECHNICAL, ADMIN SUPPORT AND MANAGEMENT** | | | | | | | | | | |  |
| **Allmedia** |  |  |  |  |  |  |  |  |  |  |  |
| **No of Employees** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** |  |  |  |  |  |
| **Technical** | 9 | 12 | 24 | 34 | 43 | 55 |  |  |  |  |  |
| **Admin Support** | 4 | 6 | 8 | 14 | 16 | 20 |  |  |  |  |  |
| **Management** | 2 | 3 | 5 | 7 | 9 | 9 |  |  |  |  |  |