Module 4

1. Analysing Data Using Spreadsheets
2. Filtering and Sorting Data
3. Using Common Data Analysis Functions
4. Creating and Using Pivot Tables
5. Creating and Using Slicers and Timelines

* How to shape our data
  + Size of dataset
  + Types of filtering
  + How to store the data.
* How to filter and sort data
  + Filtering (Auto Filters)
    - Data tab
      * Filter
        + Simply click on the drop-down box
        + For custom filters select text filter

Etc

* + Sorting
    - Text-based data – alphabetically
      * Data tab
        + A-Z or Z-A
    - Number-based data – numerically
    - Date-based data – chronologically.
      * you can insert multiple order categories.
* Functions for data analysis
  + IF
    - Compare values against criteria returns true or false.
    - **=IF(LOGICFUNCTION=[VALUES\_IF\_TRUE, [VALUE\_IF\_FALSE])**
    - You can nest ifs in the formular.
  + IFS
    - Replaces nested ifs
    - **=IFS(LOGICFUNCTION, VALUETRUE,LOGICFUNCTION2, VALUES TRUE2….)**
  + Conditional Formatting
    - HOME TAB
      * Conditional Formatting
        + Format only cells that contain.
  + COUNTIF
    - Count number of cell that meet the criteria.
    - **=COUNTIF(RANGE, CRITERIA)**
    - CRITERIA IS NOT CASE SENSITVE.
  + COUNTIFS
    - Eliminates the need for multiple nested ‘COUNTIF’S’
  + SUMIF
    - Ex: what is the total of all employee salaries that are over 30k per annum.
    - **=SUMIF (RANGE, CRITERIAL) EX:=SUMIF(CELLS, “>3000”)**
    - **=SUMIF (RANGE, CRITERIAL,[SUM\_RANGE])**
      * EX: SUMIF (CELLS, “\*cars”, RANGE)
  + VLOOKUP Function
    - Enables you to find data referenced in a lookup table.
    - Vertical lookup – find by row.
    - Ex
      * **=VLOOKUP (B3, A2:B12,2, FALSE)**
      * B3 = lookup value.
      * A2:B12 = Array
      * 2 = lookup column number.
      * FALSE = Optional (Exact or Approx)
    - \*NOTE VLOOKUP REQUIRES THE COLUMN TO BE THE LEFT MOST COLUMN.
  + HLOOKUP Functions
    - Enables you to find data referenced in a lookup table
    - Look for data in columns rather than rows
    - Look for a word or value in the top row of a table.
      * Function is identical except when doing the look up column you can looking up the row number instead.

In this lesson, you have learned the following information:

Before shaping your data, you need to visualize the final output, and ask yourself the following questions:

* How big is the dataset?
* What type of filtering is required to find the necessary information?
* How should the data be sorted?
* What type of calculations are needed?

There are several advantages to formatting your data as a table:

* Automatic calculations even when filtering
* Column headings never disappear
* Banded rows to make reading easier
* Tables will automatically expand when adding new rows

The most basic way of shaping your data is to sort and filter it:

* Sorting data helps you to organize it by a specified criteria, such as numerically, alphabetically, or chronologically.
* Filtering our data makes it easier to control what data is displayed and what is hidden, based on filtered fields.

Excel Functions:

* Functions in Excel are arranged into multiple categories; including mathematical, statistical, logical, financial, and date and time-based.
* Common functions for a data analyst include IF, IFS, COUNTIF, SUMIF, VLOOKUP, HLOOKUP

PIVOT TABLES

* Formatting data as a table
  + Home tab
    - Format as a Table
      * Select Style
        + Set range and include my table has headers if it does.
* Creating a pivot table
  + Pivot table checklist
    - Format data as table
    - Ensure column header are correct and only have 1 header row
    - Remove blank rows and columns
    - Ensure values field are formatted as number.
    - Ensure data field are formatted as dates.
  + Setup
    - Select any cell
    - Insert tab
      * Create Pivot Table
* Using fields in a pivot table
* Performing calculations in a pivot table.

In this lesson, you have learned the following information:

Pivot Tables:

* To obtain usable and presentable insights into your data you need to use Pivot Tables.
* Pivot tables provide a simple and quick way to summarize and analyze data, to observe trends and patterns in your data and to make comparisons of your data.
* Pivot tables are dynamic, so as you change and add data to the original dataset on which the pivot table is based, the analysis and summary information changes too.
* A Data Analyst can use pivot tables to draw useful and relevant conclusions about, and create insights into, an organization’s data in order to present those insights to interested parties within the company.

Use this Pivot Table checklist to ensure your data is in a fit state to make a Pivot Table:

* Format your data as a table for best results.
* Ensure column headings are correct, and there is only one header row, as these column headings become the field names in a Pivot Table.
* Remove any blank rows and columns, and try to eliminate blank cells also.
* Ensure value fields are formatted as numbers, and not text, and ensure date fields are formatted as dates, and not text.

Arranging Pivot Tables with Filters and Recommended Tables:

* You use the Pivot Table Fields pane to add and arrange data fields in your pivot table.
* Recommended Pivot Tables are a list of suggested different combinations of data that could be used when creating a Pivot Table, based on the data selected in the worksheet.

Filters and Slicers:

* Slicers are on-screen graphical filter objects that enable you to filter your data using buttons, which makes it easier to perform quick filtering of your pivot table data.
* Timelines are another type of filter tool that enable you to filter specifically on date-related data in your pivot table. This is a much quicker and more effective way of dynamically filtering by date, rather than having to create and adjust filters on your date columns.