#### Python Programming

**Overview**

During this week, you also started learning how as a Data Scientist, you will be required to write programs that perform python computations.

In this section, you will be required to create several python programs that should be able to perform the given operations then, display the results of the operations.

* + - Take in two values from a user (both in pounds) then convert those values to kilograms.
    - Perform the sum of the values.
    - Perform the average of the values.
    - Find the difference between both values.
    - Find the quotient when one value is divided by the other.
    - Determine and print out whether any of the numbers are even or add.
    - Have comments applied appropriately.

**Deliverable**

* + 1. You will create a Colaboratory Notebook that will contain your responses to the above questions.
    2. Use the following naming convention for the above Google Colaboratory Notebook,
       - "Moringa\_Data\_Science\_Prep\_W1\_Independent\_Project\_2019\_06\_FirstName\_LastName\_Python\_Notebook"
    3. Do not clear your Notebook consoles upon completion of this deliverable.
    4. Have the above document put in one folder that you will submit together with the other deliverables of this Independent Project.

#### Part 3: SQL Programming

**Overview**

In this section, you will act as a Data Science Consultant who will answer questions posed using a dataset collected by Dalberg. The dataset contains crops grown in Uganda.

**SQL Programming Questions**

* + 1. Display a list of Sub Counties and their population and areas.
    2. Sort the list of districts by total crop area (descending order).
    3. Select only the Sub counties from the Moroto district, order them alphabetically and show their production of sorghum.
    4. Compute the total Maize production per District.
    5. Compute the number of Sub counties where Maize is produced and the total Maize production per District.
    6. Compute the overall Crop area in all Sub counties where population is over 20000.
    7. Sort the Maize production in descending order by Districts, only taking into account Sub counties where Maize area is larger than Sorghum area, and display the number of Sub counties per district matching that criteria.

**Dataset Description**

This dataset contains yield and population per subcounty. The dataset for the above questions can be found here. [[Link](https://drive.google.com/a/moringaschool.com/file/d/1pWXDvs33OoULTH4kdzhGTUxJmp0dSgZq/view?usp=sharing)

[(Links to an exte](https://drive.google.com/a/moringaschool.com/file/d/1pWXDvs33OoULTH4kdzhGTUxJmp0dSgZq/view?usp=sharing)

The glossary for this table is as follows:

* + - POP: total population for the subcounty
    - S\_Yield\_Ha: average yield for sorghum for the subcounty (Kg/Ha)
    - M\_Yield\_Ha: average yield for maize for the subcounty (Kg/Ha)
    - Crop\_Area\_Ha: total crop area for the subcounty (Ha)
    - S\_Area\_Ha: total sorghum crop area for the subcounty (Ha)
    - M\_Area\_Ha: total maize crop area for the subcounty (Ha)
    - S\_Prod\_Tot: total productivity for the sorghum for the subcounty (Kg)
    - M\_Prod\_Tot: total productivity for the maize for the subcounty (Kg)

**Deliverable**

* + 1. You will create an Colaboratory Notebook that will contain your responses to the above questions.
    2. Use the following naming convention for the above Notebook:
       - "Moringa\_Data\_Science\_Prep\_W1\_Independent\_Project\_2019\_06\_FirstName\_LastName\_SQL\_Notebook"
    3. All questions, text responses, SQL queries should be included in the Notebook.
    4. Do not clear your Notebook consoles upon completion of this deliverable.
    5. Put the file(s) in one folder then follow the given instructions to make the submission.