Data Science Workshop-2 (CSE 2196)

ASSIGNMENT-1(PYTHON, DATA VISUALIZATION)

1. Differentiate between the followings with proper examples
   a. all() vs any()
   b. dictionary vs default dictionary
   c. *args and **kwargs
   d. Data science vs data engineers
2. Consider the data containing the salary and tenure of some employees. salaries_and_tenures = [(83000, 8.7), (88000, 8.1), (48000, 0.7), (76000, 6), (69000, 6.5), (76000, 7.5), (89000, 8.7), (60000, 1.8), (83000, 3.5),(68000, 8.1),(48000, 0.7), (63000, 1.8),(25000, 3.5)]
   a. Find the average salary of each tenure
   b. Group together the salaries corresponding to the following bucket of tenures, less than two, between two and five, more than 5
   c. Compute the average salary for each group(bucket of tenures)
3. Explain the use of assert statements in python, with an example.
4. Count frequencies of various alphabets (Convert upper case into lower case and input given by user), plot the results for this as a bar chart with x-axis being the letter and y-axis as the corresponding frequency.
5. Download the following data Company_sales_data.csv. Draw a line plot between month numbers and company's profit per month. Give the X-axis name as 'Months' and Y-axis name as 'Profit'. Give the title of the graph to 'Profits per month'. Keep the line Style dotted and line-color to be red. Show the legend at the top left corner.
6. Read all product sales data and show it using a multiline plot Display the number of units sold per month for each product using multiline plots. (i.e., Separate Plot line for each product). Keep the legend on the top left corner.
7. Calculate total sale data for last year for each product and show it using a Pie chart Note: In Pie chart display Number of units sold per year for each product in percentage.