**Lab Week 3**

**Part A: Python Pandas**

Topic 1: Pandas Series

1. Create a Series from a list = [9, 18, 27, 36, 45, 54, 63, 72, 81].
2. Print the output of the list and print the output from Series.
3. Print the 5th index from Series.
4. Create your own index labels using alphabetical order (from a until i).
5. Print the output of new Series.
6. Print the label from ‘h’.
7. Sort the values in descending order.
8. Based on the new Series, find the:
   1. Sum of all values in the series
   2. Product of all values in the series
   3. Average values in the series
   4. Median values in the series
   5. Minimum values in the series
   6. Maximum values in the series
9. Simplify the calculations from (8) by using aggregation function agg().

Topic 2: Pandas Data Frame

1. Use the Series from topic 1 and put into Data Frame.
2. Rename the column name into ‘Age’.
3. Insert a new column called ‘First Name’ into the Data Frame with the following values:

[‘Adam’, ‘Jack’, ‘James’, ‘Tony’, ‘Sam’, ‘Tiffany’, ‘Billy’, ‘Tom’, ‘Chris’]

1. Locate row ‘c’ in the Data Frame.

**Part B: Case Study Based on Dataset**

Topic 1: SF Salaries Exercise

Load the dataset from ‘Salaries.csv’.

1. Read Salaries.csv as a Data Frame called sal.
2. Check the head of the Data Frame.
3. Use the .info() method to find out how many entries there are.
4. Find the average base pay.
5. Find the highest amount of overtime pay in the dataset.
6. What is the job title of JOSEPH DRISCOLL ?

Note: Use all caps, otherwise you may get an answer that doesn't match up (there is also a lowercase Joseph Driscoll)

1. How much does JOSEPH DRISCOLL make (including benefits)?
2. What is the name of highest paid person (including benefits)?
3. What is the name of lowest paid person (including benefits)? Do you notice something strange about how much he or she is paid?
4. What was the average base pay of all employees per year from 2011 to 2014 ?
5. How many unique job titles are there?
6. What are the top 5 most common jobs?
7. How many Job Titles were represented by only one person in 2013? (e.g. Job Titles with only one occurence in 2013?)
8. How many people have the word Chief in their job title?
9. Is there a correlation between length of the Job Title string and Salary?

Topic 2: Ecommerce Purchases Exercise

Load the dataset from ‘Ecommerce Purchases.csv’.

1. Check the head of the DataFrame.
2. How many rows and columns are there?.
3. What is the average Purchase Price?
4. What were the highest and lowest purchase prices?
5. How many people have English 'en' as their Language of choice on the website?
6. How many people have the job title of "Lawyer" ?
7. How many people made the purchase during the AM and how many people made the purchase during PM ?
8. What are the 5 most common Job Titles?
9. Someone made a purchase that came from Lot: "90 WT" , what was the Purchase Price for this transaction?
10. What is the email of the person with the following Credit Card Number: 4926535242672853.
11. How many people have American Express as their Credit Card Provider and made a purchase above $95 ?
12. How many people have a credit card that expires in 2025?
13. What are the top 5 most popular email providers/hosts (e.g. gmail.com, yahoo.com, etc...)?