The focus of this assignment is to learn to create data analytics using the Python Pandas library. This assignment requires that you use Jupyter Notebook to write your program. Please watch the video lectures on how to install Anaconda Tool and how to use Jupyter Notebook.

(Note: In Python IDE, we use command pip (for Windows) or pip3 (for macOS) to install Pandas. If you have installed the Anaconda tool, most of the Python packages should already be included within the tool.)

Question 1

Write a program on the following two questions. Both Sections A and B should be written in one program.

A (PANDAS: SERIES) Perform the following tasks with pandas Series:

a. Create a Series from the list [7, 11, 13, 17].
b. Create a Series with five elements that are all 100.0.
c. Create a Series with 20 elements that are all random numbers in the range 0 to 100. Use method describe to produce the Series' basic descriptive statistics.
d. Create a Series called temperatures of the floating-point values 98.6, 98.9, 100.2 and 97.9. Using the index keyword argument, specify the custom indices 'Julie', 'Charlie', 'Sam' and 'Andrea'.
e. Form a dictionary from the names and values in Part (d), then use it to initialize a Series.

B (PANDAS: DATAFRAMES) Perform the following tasks with pandas DataFrames:

f. Create a DataFrame named temperatures from a dictionary of three temperature readings each for 'Maxine', 'James' and 'Amanda'.
g. Recreate the DataFrame temperatures in Part (a) with custom indices using the index keyword argument and a list containing 'Morning', 'Afternoon' and 'Evening'.
h. Select from temperatures the column of temperature readings for 'Maxine'.
i. Select from temperatures the row of 'Morning' temperature readings.
j. Select from temperatures the rows for 'Morning' and 'Evening' temperature readings.
k. Select from temperatures the columns of temperature readings for 'Amanda' and 'Maxine'.
l. Select from temperatures the elements for 'Amanda' and 'Maxine' in the 'Morning' and 'Afternoon'.
m. Use the describe method to produce temperatures' descriptive statistics.
n. Transpose temperatures.
o. Sort temperatures so that its column names are in alphabetical order.

Question 2

Using the *titanic.csv* dataset, write a program to explore and mine the following information:

a) How many passengers were on the titanic?
b) How many male and female passengers were in the titanic?
c) What was the average age of all passengers?
d) How many passengers were under 21 years of age?
e) How many survived and how many did not? How many males and how many females?
f) What was the youngest age that survived, and the oldest age? What were their names?
g) Display the name of all passengers that survived.

(Save the results above into a file of your choice)

Write a Learning Report Summary (LRS)

Using Microsoft Word, write a summary report (not bullet items) with a minimum of 100 words explaining how you completed your assignment. *Please describe your responses, not just yes/no answers.*

1. Did you successfully get your assignment done? Did it run? Any error? Did you get the correct result? Did you test your program thoroughly?
2. How much time did you spend completing your assignment?
3. Did you find the assignment easy or challenging for you?
4. Did you write the program yourself? Did you get any help from anyone?
5. When you encountered obstacles to completing your program, how did you resolve the issues? Did you use Google to get help? Describe how Google was able or not able to assist you?
6. What did you learn from doing this assignment?
7. Any other information you would like to share with your instructor? Make sure you provide program output on each option.

What to submit on blackboard

Your program source code – (the .ipynb file)
Your program output – submit the report file stored.
Your LRS.

Below is a sample running program for Question #2 (titanic program):

There were 1309 passengers on the Titanic.
Number of Male Passengers: 843
Number of Female Passengers: 466
The average age of all the passengers was 29.89
There are 249 passengers under 21 years old.
Total Passengers Survived: 500, Male: 161, Female: 339
Total Passengers Deceased: 809, Male: 682, Female: 127
The youngest survivor was Dean, Miss. Elizabeth Gladys M. She was 0.17 years old.
The oldest survivor was Barkworth, Mr. Algernon Henry W. He was 80.0 years old.

List of Passengers:
Allen, Miss. Elisabeth Walton
Allison, Master. Hudson Trevor
Anderson, Mr. Harry
Andrews, Miss. Kornelia Theodos
Appleton, Mrs. Edward Dale (Cha
Astor, Mrs. John Jacob (Madelei
Aubart, Mme. Leontine Pauline
Barber, Miss. Ellen Nellie
Barkworth, Mr. Algernon Henry W
Baxter, Mrs. James (Helene DeLa
Bazzani, Miss. Albina
Beckwith, Mr. Richard Leonard
Beckwith, Mrs. Richard Leonard
Behr, Mr. Karl Howell
Bidois, Miss. Rosalie
Bird, Miss. Ellen
Bishop, Mr. Dickinson H
Bishop, Mrs. Dickinson H (Helen
Bissette, Miss. Amelia
Bjornstrom-Steffansson, Mr. Mau
Blank, Mr. Henry
Bonnell, Miss. Caroline
Bonnell, Miss. Elizabeth
Bowen, Miss. Grace Scott
Bowerman, Miss. Elsie Edith
Bradley, Mr. George (George Ar
Brown, Mrs. James Joseph (Marga
Brown, Mrs. John Murray (Caroli
Bucknell, Mrs. William Robert (
Burns, Miss. Elizabeth Margaret
Calderhead, Mr. Edward Penningt
Candee, Mrs. Edward (Helen Chur
Cardeza, Mr. Thomas Drake Marti
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