Spectrum Club,

College Of Engineering and Technology

Bhubaneswar

www.spectrumcet.com

Dear Participant,

Welcome to Python internship drive. This is the second phase of your internship which is the Task-1. The task is based on most of the fundamental themes of python and the pandas library. The task consist of some fundamental questions .Hope you all enjoy doing the task and wish you good luck.

**TASK 1:**

#### 1.Create an inner function to calculate the addition in the following way

* Create an outer function that will accept two parameters ‘a’ and ‘b’
* Create an inner function inside an outer function that will calculate the addition of ‘a’ and ‘b’
* At last, an outer function will add 5 into addition and return it

2. Given input String of combination of the lower and upper case ,arrange characters in such a way that all lowercase letters should come first.

#### 3. Given a Python list, remove all the even number from the list and save those even number in another list and print both the lists.

#### For a given input list: List1 = [1,2,3,4,5,6,7]

#### Output : List1=[1,3,5,7]

#### List2 = [2,4,6]

#### 4. Get the key corresponding to the minimum value from the following dictionary using appropriate python logic.

#### sample={

#### ‘physics’, 88 , ‘maths’, 75, ’chemistry’ , 72,’Basic electrical’ , 89

#### }

#### 5.  Given two Python sets, update first set with items that exist only in the first set and not in the second set .

#### S1={1,2,3,4,5,6,7,8,9}

#### S2={1,3,4,6,8,11,22,34,51,67}

#### 6. Program to create simple calculator in Python which on input of 1,2,3,4 should add , subtract , multiply and divide respectively.

**PANDAS:**

This classic dataset contains the prices and other attributes of almost 54,000 diamonds. It's a great dataset for beginners learning to work with data analysis and visualization.

Download the data set and solve the following:

Source : <https://www.kaggle.com/shivam2503/diamonds>

7. Write a Pandas program to read a csv file from a specified source and print the first 5 rows

8. Write a Pandas program to select a series from diamonds DataFrame. Print the content of the series.

9. Write a Pandas program to calculate count, minimum, maximum price for each cut of diamonds DataFrame.

10. Write a Pandas program to check the number of rows and columns and drop those row if 'any' values are missing in a row of diamonds DataFrame.

11.  Write a Pandas program to count the duplicate rows of diamonds DataFrame.

12. Write a Pandas program to get sample 75% of the diamonds DataFrame's rows without replacement and store the remaining 25% of the rows in another DataFrame

**ALL INTERNS ARE REQUIRED TO GET ACQUAINTED WITH GITHUB IN THE PRE-TASK PERIOD AS THEY WILL HAVE TO SUBMIT THEIR TASKS THROUGH GITHUB.**

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**RESOURCES: -**

**Set up-**

* **GitHub Desktop:** <https://desktop.github.com/>
* **Python Learning Sources :**

**1.**  <https://www.programiz.com/python-programming>

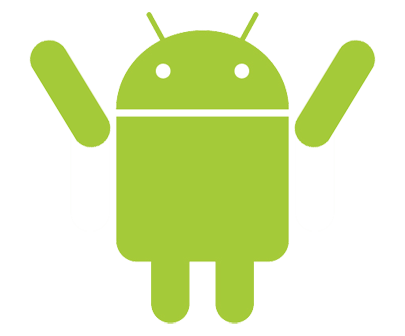
2. <https://www.geeksforgeeks.org/python-programming-language/>

3. <https://www.javatpoint.com/python-tutorial>

**Tutorials-**

* **GitHub: -** <https://www.youtube.com/watch?v=SWYqp7iY_Tc>
* **GitHub Desktop: -** <https://www.youtube.com/watch?v=kFix7UDJ7LA>
* **Python tutorials :**

1. <https://www.edx.org/course/introduction-to-python-absolute-beginner-2>
2. <https://www.youtube.com/watch?v=sxTmJE4k0ho>
3. <https://www.youtube.com/watch?v=UB3DE5Bgfx4>
4. <https://www.youtube.com/watch?v=8JfDAm9y_7s> (Numpy tutorial)
5. <https://www.udemy.com/course/python-the-complete-python-developer-course/>

WARM REGARDS,

**SPECTRUM, CET-B**