Suryadatta Group of Foundation

Suryadatta Group of Institute

MCA

Practical Journal On

Python Programming

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Class: MCA – I

Sem-II

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1] **Write a python code to find given number is Armstrong Number or**

Not. Steps:

a. Accept Number from user in variable named as X.

b. Print message whether number X is Armstrong or not.

Note: Armstrong number is a number that is equal to the sum of cubes of its digits. For example 153. (1^3 + 5^3 + 3^3 = 153)

2] Write a code in python to count number of vowels in given string

Steps:

a. Accept string from user in variable named STR1.

b. Count the number of vowels in STR1 and print.

Eg.

1.STR1 = 'COCONUT' => 3

2.STR1 = 'CONFIDence' => 4

3] Write a program, which will find all such numbers between 2000 and 3000 (both included) such that each digit of the number is an even number. eg. 2000, 2002...2888.

4] Write a program that accepts a sentence and calculate the number of letters and digits. Suppose the following input is supplied to the program: hello world! 123 Then, the output should be: ALPHABETS 10 DIGITS 3

(Note : Special symbols are not alphabets)

5] Write a Python function that takes a list and returns a new list with unique elements of the first list.

Sample List : [1,2,3,3,3,3,4,5]

Unique List : [1, 2, 3, 4, 5]

6] Write a Python program to make a chain of function decorators (bold, italic, underline etc.) in Python.

7] Write a Python program to generate a random alphabetical character, alphabetical string

and alphabetical string of a fixed length. Use random.choice()

8] Write a Python program to generate a random alphabetical character, alphabetical string and alphabetical string of a fixed length. Use random.choice()

9] Create a child class Bus that will inherit all of the variables and methods of the Vehicle class

10] Create a Bus class that inherits from the Vehicle class. Give the capacity argument of Bus.seating_capacity() a default value of 50.

11] Create a Bus child class that inherits from the Vehicle class. The default fare charge of any vehicle is seating capacity * 100. If Vehicle is Bus instance, we need to add an extra 10% on full fare as a maintenance charge. So total fare for bus instance will become the final amount = total fare + 10% of the total fare.

12] Write a Python class named Student with two attributes student_name, marks. Modify the attribute values of the said class and print the original and modified values of the said attributes.

13] Write a Python program to match a string that contains only upper and lowercase letters, numbers, and underscores.

14] Write a python program to validate the password by using regular expression.

a. Complexity requirement is that we need at least one capital letter, one number and one special character.

b. We also need the length of the password to be between 8 and 18.

15] Write a python program to validate the URL by using regular expression. **16]**

Write a python program to validate an email address by using regular expression.

17] Write a python program which consists of - try, except, else, finally blocks. **18]**

Write a python program which raises the exception with a message.

19] Write a Python multithreading program to print the thread name and corresponding process for each task (assume that there are four tasks).

20] Write a Python multithreading program which creates two threads, one for calculating the square of a given number and other for calculating the cube of a given number.

21] Given a file called **myfile.txt** which contains the text: "Python is object oriented programming language". Write a program in Python that transforms the content of the file by writing each word in a separate line.

22] Write a Python program that displays the longest word found in a text file.

23] Write a function in python that allows you to count the frequency of repetition of each word found in a given file.

24] Write a Python program which allows you to extract the content of a file from the 3rd line to the 7th line and save it in another file called **extract_content.txt**.

25] Create the following DataFrame Sales containing year wise sales figures for five salespersons in INR. Use the years as column labels, and salesperson names as row labels.

	2018	2019	2020	2021
Kapil	110	205	177	189
Kamini	130	165	175	190
Shikhar	115	206	157	179
Mohini	118	198	183	169

1. Create the DataFrame.
2. Display the row labels of Sales.
3. Display the column labels of Sales.
4. Display the data types of each column of Sales.
5. Display the dimensions, shape, size and values of Sales.

26] Plot the following data on a line chart and customize the chart according to the below-given instructions:

Month	January	February	March	April	May
Sales	510	350	475	580	600

Weekly Sales Report

1. Write a title for the chart "The Monthly Sales Report"
2. Write the appropriate titles of both the axes
3. Write code to Display legends
4. Display blue color for the line
5. Use the line style – dashed

6. Display diamond style markers on data points

27] Observe following data and plot data according to given instructions:

Batsman 2017 2018 2019 2020 Virat Kohli 2501 1855 2203 1223 Steve Smith 2340 2250 2003 1153 Babar Azam 1750 2147 1896 1008 Rohit Sharma 1463 1985 1854 1638 Kane Williamson 1256 1785 1874 1974 Jos Butler 1125 1853 1769 1436

1. Create a bar chart to display data of Virat Kohli & Rohit Sharma.
2. Customize the chart in this manner

1. Use different widths
2. Use different colors to represent different years score
3. Display appropriate titles for axis and chart
4. Show legends
5. Create a bar chart to display data of Steve Smith, Kane Williamson & Jos Butler. Customize Chart as per your wish.
6. Display data of all players for the specific year.

28] WAP to create a 3*3 numpy array with all the elements as per the user choice and print the sum of all elements of the array.

29] WAP to perform basic arithmetic operations on 1D and 2D array .

30] Write a Menu Driver Program to add, display, update, delete and exit in a student database containing Student_id,Student_name,Course through Python-MongoDB connectivity.

31] Demonstrate step by step MongoDB connection in Python

32] Write a Menu Driver Program to add, display, search, sort and exit in book database containing

Book_id, Book_name, Book_author through Python-MongoDB connectivity.