SESSION: PYTHON 1, 2, 3, 4 & 5

Assignment 1 Question

Python 1,2,3,4 & 5: Assignment 1

Table of Contents

1.Introduction

This assignment will help you to consolidate the concepts learnt in the session.

2.1. Problem Statement: PYTHON 1

1. Install Jupyter notebook and run the first program and share the screenshot of the output.
LINK

2. Write a program which will find all such numbers which are divisible by 7 but are not a multiple of 5, between 2000 and 3200 (both included). The numbers obtained should be printed in a comma-separated sequence on a single line.

3. Write a Python program to accept the user's first and last name and then getting them printed in the the reverse order with a space between first name and last name.

4. Write a Python program to find the volume of a sphere with diameter 12 cm.
Formula: $V=4/3 * \pi * r^3$

2.2. Problem Statement: PYTHON 2

1. Write a program which accepts a sequence of comma-separated numbers from console and generate a list.

2 Create the below pattern using nested for loop in Python.

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

3. Write a Python program to reverse a word after accepting the input from the user.
Sample Output:

Input word: AcadGild

Output: dilGdacA

4. Write a Python Program to print the given string in the format specified in the **sample output.**

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN, SOCIALIST, SECULAR, DEMOCRATIC REPUBLIC and to secure to all its citizens

Sample Output:

WE, THE PEOPLE OF INDIA,
having solemnly resolved to constitute India into a SOVEREIGN, !
SOCIALIST, SECULAR, DEMOCRATIC
REPUBLIC and to secure to all its citizens

2.3. Problem Statement: PYTHON 3

1.1. Write a Python Program to implement your own myreduce() function which works exactly like Python's built-in function reduce()

1.2. Write a Python program to implement your own myfilter() function which works exactly like Python's built-in function filter()

2. Implement List comprehensions to produce the following lists.

Write List comprehensions to produce the following Lists.

['A', 'C', 'A', 'D', 'G', 'I', 'L', ' D']
['x', 'xx', 'xxx', 'xxxx', 'y', 'yy', 'yyy', 'yyyy', 'z', 'zz', 'zzz', 'zzzz']
['x', 'y', 'z', 'xx', 'yy', 'zz', 'xxx', 'yyy', 'zzz', 'xxxx', 'yyyy', 'zzzz']
[[2], [3], [4], [3], [4], [5], [4], [5], [6]] [[2, 3, 4, 5], [3, 4, 5, 6], [4, 5, 6, 7], [5, 6, 7, 8]]
[(1, 1), (2, 1), (3, 1), (1, 2), (2, 2), (3, 2), (1, 3), (2, 3), (3, 3)]

3. Implement a function longestWord() that takes a list of words and returns the longest one.

2.4. Problem Statement: PYTHON 4

1.1 Write a Python Program(with class concepts) to find the area of the triangle using the below formula.

area = (s*(s-a)*(s-b)*(s-c)) ** 0.5

Function to take the length of the sides of triangle from user should be defined in the parent class and function to calculate the area should be defined in subclass.

1.2 Write a function filter_long_words() that takes a list of words and an integer n and returns the list of words that are longer than n.

2.1 Write a Python program using function concept that maps list of words into a list of integers representing the lengths of the corresponding words.

Hint: If a list [ab,cde,erty] is passed on to the python function output should come as [2,3,4]

Here 2,3 and 4 are the lengths of the words in the list.

2.2 Write a Python function which takes a character (i.e. a string of length 1) and returns True if it is a vowel, False otherwise.

2.5. Problem Statement: PYTHON 5

1. Write a function to compute 5/0 and use try/except to catch the exceptions.

2. Implement a Python program to generate all sentences where subject is in ["Americans", "Indians"] and verb is in ["Play", "watch"] and the object is in ["Baseball","cricket"].

Hint: Subject,Verb and Object should be declared in the program as shown below.

subjects=["Americans ","Indians"]

verbs=["play","watch"]

objects=["Baseball","Cricket"]

Output should come as below:

Americans play Baseball.

Americans play Cricket.

Americans watch Baseball.

Americans watch Cricket.

Indians play Baseball.

Indians play Cricket.

Indians watch Baseball.

Indians watch Cricket.

NOTE:ThesolutionsharedthroughGithubshouldcontainthesource codeusedandthe screenshotoftheoutput.

3.Output

This assignment consists of 1000 marks and .ipynb file needs to be submitted in Github. You can follow Github submission guide provided to do the same.