

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

Assignment 1 Question

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

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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.

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.

NOTE: The solutions hared through Githubshould contain the source code used and the
Indians watch Cricket.
Indians watch Baseball.
Indians play Cricket.
Indians play Baseball.
Americans watch Cricket.
Americans watch Baseball.

${\bf NOTE:} The solutions have dthrough Githubshould contain the source code used and the screen shot of the output.$

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.