Python Conditional Statements and loops

Q1. Write a Python program to find those numbers which are divisible by 7 and multiples of 5, between 1500 and 2700 (both included).

Output:

1505,1540,1575,1610,1645,1680,1715,1750,1785,1820,1855,1890,1925,1960,1995,2030,2065,2100,2135,2170,2205,2240,2275,2310,2345,2380,2415,2450,2485,2520,2555,2590,2625,2660,2695

Q2. Write a Python program that accepts a word from the user and reverses it.

INPUT: Input a word to reverse: Shailja

OUTPUT: ajliahS

Q3. Write a Python program that prints all the numbers from 0 to 6 except 3 and 6. Note : Use 'continue' statement.

Expected Output : 0 1 2 4 5

Q4. Write a Python program that prints each item and its corresponding type from the following list.

INPUT = [1452, 11.23, 1+2j, True, 'w3resource', (0, -1), [5, 12], {"class":'V', "section":'A'}]

OUTPUT:

Type of 1452 is <class 'int'>

Type of 11.23 is <class 'float'>

Type of (1+2j) is <class 'complex'>

Type of True is <class 'bool'>

Type of w3resource is <class 'str'>

Type of (0, -1) is <class 'tuple'>

Type of [5, 12] is <class 'list'>

Type of {'class': 'V', 'section': 'A'} is < class 'dict'>

Q5. Write a Python program to check the validity of passwords input by users.

Validation :

At least 1 letter between [a-z] and 1 letter between [A-Z].

At least 1 number between [0-9].

At least 1 character from [$#@].

Minimum length 6 characters.

Maximum length 16 characters.

INPUT: Input your password:S3r@100a

OUTPUT:Valid Password

Q6. Write a Python program to get the Fibonacci series between 0 and 50.

Note : The Fibonacci Sequence is the series of numbers :

0, 1, 1, 2, 3, 5, 8, 13, 21, ...

Every next number is found by adding up the two numbers before it.

Expected Output : 1 1 2 3 5 8 13 21 34

Q7. Write a Python program to check whether an alphabet is a vowel or consonant.

OUTPUT:

Input a letter of the alphabet: k

k is a consonant.

Q8. Write a Python program that takes a string as input and replaces all occurrences of a given character with another character.

INPUT: Enter a string: We study at GrowDataSkills

Enter the character to replace: G

Enter the replacement character: H

Q9: Write a Python function to reverse a list at a specific location.
INPUT: [10,20,30,40,50,60,70,80]

start_pos = 2

end_pos = 4

OUTPUT: Reverse elements of the said list between index position 2 and 4

[10, 20, 50, 40, 30, 60, 70, 80]

Q10. Write a Python program that takes a string as input and checks if it is a palindrome (reads the same forwards and backward).

INPUT: Enter a string: GrowDataSkills

OUTPUT: It is not a palindrome.

Q11. Write a Python program that takes a sentence as input and capitalizes the first letter of each word.

INPUT: Enter a sentence: we are growdataskills

OUTPUT: Capitalized sentence: We Are Growdataskills

Q12. Write a Python program that takes two lists as input and returns a new list containing the common elements between the two lists.

INPUT:

list1 = [1, 2, 3, 4, 5]

list2 = [3, 4, 5, 6, 7]
OUTPUT: Common elements: [3, 4, 5]

Python functions

Q. Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.

INPUT: Input a number to compute the factorial: 4

OUTPUT: 24

Q. Write a Python function that accepts a string and counts the number of upper- and lower-case letters.

INPUT: The quick Brow Fox'

OUTPUT:
No. of Upper case characters : 3
No. of Lower case Characters : 13

Q. Write a Python function to check whether a number falls within a given range(3,9)

INPUT:5

OUTPUT: 5 is in the range

Q. Write a Python function that takes an integer as input and checks if it is a prime number.

INPUT: Enter an integer: 13

OUTPUT: It is a prime number.

Q. Write a Python function that takes a list of numbers as input and returns the average of the numbers.

INPUT: [1,2,3,4,5,6,7,8,9,10]

OUTPUT: 5.5

Q. Write a Python function that takes a list as input and returns a new list containing only the unique elements from the input list.

INPUT: [1,2,3,4,1,2,0,0,1]
OUTPUT: [0, 1, 2, 3, 4]

Q. Write a Python function that takes two strings as input and checks if they are anagrams (contain the same characters in any order).

INPUT:

Enter the first string: race

Enter the second string: care

OUTPUT: They are anagrams.

Q.Write a Python function that takes a list and an element as input and returns the number of occurrences of that element in the list.

INPUT:

input_list = [1,2,3,4,2,2,3,4,5,9,2,6]

Enter the element to count: 2
OUTPUT: Occurrences: 4

Q.Write a Python function that takes a list of tuples as input and returns the list sorted based on the second element of each tuple.

INPUT:[(1, 3), (2, 1), (3, 2), (4, 5), (5, 4)]

OUTPUT: Sorted list of tuples: [(2, 1), (3, 2), (1, 3), (5, 4), (4, 5)]

Q.Write a Python function that takes a list of integers as input and returns the second largest element in the list.

INPUT: [3, 5, 2, 8, 9, 5, 1]

OUTPUT: Second largest element: 8

Q.Write a Python lambda function that takes a list of numbers and an exponent **n** as input and returns a new list with each element raised to the power of **n**.

INPUT:

input_numbers = [1, 2, 3, 4, 5]

exponent = 3

OUTPUT: [1, 16, 81, 256, 625]

Q. Write a Python function that takes a list of integers as input and returns a new list containing only the odd numbers.

INPUT: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
OUTPUT: [1,3,5,7,9]

Python Object-Oriented Programming

Q. Write a Python program to create a class representing a Circle. Include methods to calculate its area and perimeter.

INPUT:

Radius of the circle: 4

OUTPUT:

Area of the circle: 50.26548245743669

Perimeter of the circle: 25.132741228718345

Q. Write a Python program to create a person class. Include attributes like name, country and date of birth. Implement a method to determine the person's age.

SAMPLE OUTPUT:

Person 1:

Name: Ferdi Odilia

Country: France

Date of Birth: 1962-07-12

Age: 60

Person 2:

Name: Shweta Maddox

Country: Canada

Date of Birth: 1982-10-20

Age: 40

Person 3:

Name: Elizaveta Tilman

Country: USA

Date of Birth: 2000-01-01

Age: 23

Q. Write a Python program to create a calculator class. Include methods for basic arithmetic operations.

SAMPLE INPUT:7,5

SAMPLE OUTPUT:

7 + 5 = 12

7 - 5 = 2

7 * 5 = 35

7/5 = 1.0

Q. Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Implement subclasses for different shapes like circle, triangle, and square.

SAMPLE INPUT:

Circle(5)

Triangle(3, 4, 5)

Square(6)

SAMPLE OUTPUT:

Circle:

Area: 78.53981633974483

Perimeter: 31.41592653589793

Triangle:

Area: 6.0

Perimeter: 12

Square:

Area: 36

Perimeter: 24