Practical Number	06
Areas covered	In-built Functions

Q1) Write a Python program to display the following output using the print() function.

i.   In two separate lines:

Hello

I love Python

ii.   In the same line separated by a comma (Hint: Use the sep keyword).

Hello, I love Python

Q2) Write a Python program that calculates the area of a square given the length of its side as 10 units and display the calculated area.

Q3) Write a Python program to demonstrate the usage of the pow() function with three parameters. Complete the table below by executing each set of parameters.

You can fill out the Expansion column manually and the Output column after executing the program. The first row is provided as an example.

Parameter 1	Parameter 2	Parameter 3	Expansion	Output
2	3	4	(2*2*2) % 4	0
3	4	2		
4	3	2		
2	4	3		
3	2	4		
4	2	3		

Q4) Write a Python program to determine the type of each input provided below. Execute the program and identify the type of each input.

- input1 = "Hello world"
- input2 = 450000
- input3 = 34.78
- input4 = ("car", "van", "bus")
- input5 = True
- input6 = 1234567890
- input7 = ['apple', 'banana', 'cherry']
- input8 = {'name': 'John', 'age': 30}

Q5) Suppose you are developing a program to process user inputs for a shopping cart application. The program needs to handle various types of input data, including integers, floating-point numbers, and strings. Below are some sample inputs representing items, amount (no of items) and their prices:

item1 = "Apple"	item2 = "Orange"	item3 = "Mango"
amount1 = 2.3	amount2 = "3"	amount3 = 5
price1 = "5.99"	price2 = 3.50	price3 = 2

Write a python program to convert the given input data to their appropriate types. Finally calculate and display the total number of items and the total price of the items in the shopping cart.

Q6) Consider the value of π (pi) as 3.141592. Using the round() function in Python, write a simple program to determine the output after rounding off the value of π to different numbers of decimals, ranging from 0 to 5.

Q7) You have intercepted a coded password that has been secretly encoded using ASCII values. Your task is to decode the password by converting each character separately to its corresponding ASCII value and appending those values together to find the correct password.

The encoded password is: '**K8$%j**'

Write a Python program to decode the password by determining the ASCII value of each character in the encoded password and then appending them together to display the correct password.

(Hint: For example, if the encoded password is 'AB', and the ASCII values of 'A' and 'B' are 65 and 66 respectively, the correct password would be '6566').

Q8) Write a Python program that asks the user to enter a sentence and a search term. Find the index position of the first occurrence of the search term within the sentence. If the search term is found, display its index position. If the search term is not found, display 'Search term not found in the sentence'.

Q9) Write a Python program that prompts the user to enter an email address and validates the email by checking whether it contains both '@' and '.' characters. Finally display whether the entered email address is valid or not.

Q10) Write a Python program that prompts the user to enter 10 numbers as input and then finds and displays the maximum and minimum numbers among those entered.

Q11) Imagine you are a teacher and you want to sort the student names in the register. Write a python program that asks the user to enter the names of five students and display the names of the students who appear first and last once the register is sorted in the ascending order of the alphabet.

Q12) Write a Python program that prompts the user to enter a password and checks its strength based on its length under the below criteria.

- If the password has 8 or more than 8 characters, it is considered strong.
- If the password has less than 8 characters, it is considered weak.

If the password is weak, prompt the user to re-enter another password. If the password is strong, display 'New Password accepted'. The program should continue prompting the user until the entered password is accepted.

Q13) Write a Python program to calculate and display the length of the hypotenuse of a right-angled triangle where the lengths of the two sides adjacent to the right angle are 3 units and 4 units, respectively.

Q14) Write a Python program that prompts the user to enter a number and calculates its factorial using the math library. Display the result. (Ex: factorial of number 5 is calculated as 5! = 5*4*3*2*1).

Q15) Consider the floating-point number 0.6523. Write a Python program to round it down to the nearest whole number using the math library. Then, compare the result with the output obtained by using the round() function. Explain the difference between the two outputs in terms of rounding behavior.