

DEPARTMENT OF COMPUTER SCIENCE & TECHNOLOGY

Course: B.Tech CSE/AIML/CSTI/FSD

Subject: Python Programming (CSH108B-T) & (CSH108B-P)

LAB-3

Course Outcome:

CSW108B.1: To **impart** understanding of basic programming concepts in python language.

CSW108B.2: To enable the student to articulate given program scenario and **apply** different programming constructs.

Learning outcome:

Students will be able to do hands-on practice of Programming constructs in python

Blooms Taxonomy Level: BT1, BT2, BT3

1. Write a python program to swap two numbers using a third variable

Ans:

```
# Input: Getting two numbers from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
```

```
# Swapping using a third variable
temp = num1
num1 = num2
num2 = temp
```

```
# Output: Displaying the swapped numbers
print("After swapping:")
print("First number:", num1)
print("Second number:", num2)
```

2. Write a python program to swap two numbers without using third variable

Ans:

```
# Input: Getting two numbers from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
```

```
# Swapping without using a third variable
num1 = num1 + num2
num2 = num1 - num2
num1 = num1 - num2
```

```
# Output: Displaying the swapped numbers
print("After swapping:")
print("First number:", num1)
print("Second number:", num2)
```

3. Write a python program to read two numbers and find the sum of their cubes

Ans:

```
# Input: Getting two numbers from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
```

```
# Calculating the sum of their cubes
sum_of_cubes = num1**3 + num2**3
```

```
# Output: Displaying the result
print("The sum of the cubes of", num1, "and", num2, "is:", sum_of_cubes)
```

4. Write a python program to read three numbers and if any two variables are equal, print that number

Ans:

```
# Input: Getting three numbers from the user
```

```
num1 = float(input("Enter the first number: "))
```

```
num2 = float(input("Enter the second number: "))
```

```
num3 = float(input("Enter the third number: "))
```

```
# Checking if any two numbers are equal and printing that number
```

```
if num1 == num2:
```

```
    print(f"The common number is: {num1}")
```

```
elif num1 == num3:
```

```
    print(f"The common number is: {num1}")
```

```
elif num2 == num3:
```

```
    print(f"The common number is: {num2}")
```

```
else:
```

```
    print("No two numbers are equal.")
```

4. Write a python program to read three numbers and find the smallest among them

Ans:

```
# Input: Getting three numbers from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))
```

```
# Finding the smallest number
smallest = num1
```

```
if num2 < smallest:
    smallest = num2
if num3 < smallest:
    smallest = num3
```

```
# Output: Displaying the smallest number
print("The smallest number among", num1, ",", num2, "and", num3, "is:", smallest)
```

5. Write a python program to read three numbers and print them in ascending order (without using sort function)

Ans:

```
# Input: Getting three numbers from the user
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))
num3 = float(input("Enter the third number: "))
```

```
# Finding the smallest, middle, and largest number
```

```
if num1 <= num2 and num1 <= num3:
```

```
    smallest = num1
    if num2 <= num3:
        middle = num2
        largest = num3
```

```
    else:
        middle = num3
        largest = num2
```

```
elif num2 <= num1 and num2 <= num3:
```

```
    smallest = num2
    if num1 <= num3:
        middle = num1
        largest = num3
```

```
    else:
        middle = num3
        largest = num1
```

```
else:
```

```
    smallest = num3
    if num1 <= num2:
        middle = num1
```

```
        largest = num2
    else:
        middle = num2
        largest = num1
```

```
# Output: Displaying the numbers in ascending order
print("The numbers in ascending order are:", smallest, middle, largest)
```

6. Write a python program to read radius of a circle and print the area

Ans:

```
import math
```

```
# Input: Getting the radius of the circle from the user
```

```
radius = float(input("Enter the radius of the circle: "))
```

```
# Calculating the area of the circle using the formula: area =  $\pi$  * radius2
```

```
area = math.pi * radius ** 2
```

```
# Output: Displaying the area
```

```
print(f"The area of the circle with radius {radius} is: {area:.2f}")
```

7. Write a python program to read a number, if it is an even number , print the square of that number and if it is odd number print cube of that number

Ans:

```
# Input: Getting a number from the user
```

```
num = int(input("Enter a number: "))
```

```
# Checking if the number is even or odd
```

```
if num % 2 == 0:
```

```
    # If the number is even, print the square
```

```
    result = num ** 2
```

```
    print(f"The number is even. The square of {num} is {result}.")
```

```
else:
```

```
    # If the number is odd, print the cube
```

```
    result = num ** 3
```

```
    print(f"The number is odd. The cube of {num} is {result}.")
```