### Practical File

### Of

### Problem Solving using Python Programming

### 24CSE0101

#### Submitted

#### in partial fulfillment for the award of the degree of

## BACHELEOR OF ENGINEERING

***in***

COMPUTER SCIENCE & ENGINEERING

****

**CHITKARA UNIVERSITY**

**CHANDIGARH-PATIALA NATIONAL HIGHWAY**

**RAJPURA (PATIALA) PUNJAB-140401 (INDIA)**

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| **Sr. No** | **Practical Name** | **Page Number** | **Teacher Signature** |
| 1. | a) Write a [Python Program to Calculate the Area of a Triangle](https://www.programiz.com/python-programming/examples/area-triangle)  b) Write a [Python Program to Swap Two Variables](https://www.programiz.com/python-programming/examples/swap-variables)  c) Write a [Python Program to Convert Celsius to Fahrenheit](https://www.programiz.com/python-programming/examples/celsius-fahrenheit) |  |  |
| 2. | a.) Write a [Python Program to Check if a Number is Odd or Even](https://www.programiz.com/python-programming/examples/odd-even)  b.) Write a [Python Program to Check if a Number is Positive, Negative or 0](https://www.programiz.com/python-programming/examples/positive-negative-zero)  c.) Write a [Python Program to Check Armstrong Number](https://www.programiz.com/python-programming/examples/armstrong-number) |  |  |
| 3. | a.) Write a Python program to check if a given number is Fibonacci number?  b.) Write a Python program to print cube sum of first n natural numbers.  c.) Write a Python program to print all odd numbers in a range. |  |  |
| 4. | a.) Write a Python Program to Print Pascal Triangle  b.) WAP to Draw the following Pattern for n number:  1 1 1 1 1  2 2 2 2  3 3 3  4 4  5 |  |  |
| 5. | Write a program with a function that accepts a string from keyboard and create a new string after converting character of each word capitalized. For instance, if the sentence is “stop and smell the roses” the output should be “Stop And Smell The Roses” |  |  |

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| 6. | a.) Write a program that accepts a list from user. Your program should reverse the content of list and display it. Do not use reverse () method.  b)  Find and display the largest number of a list without using built-in function  max (). Your program should ask the user to input values in list from keyboard. |  |  |
| 7. | Find the sum of each row of matrix of size m x n. |  |  |

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| 8. | a) Write a program that reads a string from keyboard and display:  \* The number of uppercase letters in the string.  \* The number of lowercase letters in the string.  \* The number of digits in the string.  \* The number of whitespace characters in the string.  b) [Python Program to Find Common Characters in Two Strings](https://www.sanfoundry.com/python-program-check-common-letters-string/).  c) [Python Program to Count the Number of Vowels in a String](https://www.sanfoundry.com/python-program-count-number-vowels-string/). |  |  |
| 9. | a) Write a Python program to check if a specified element presents in a tuple of tuples.  b) Write a Python program to remove an empty tuple(s) from a list of tuples. |  |  |
| 10. | a) Write a Program in Python to Find the Differences Between Two Lists Using Sets. |  |  |
| 11. | a) Write a Python program Remove duplicate values across Dictionary Values.  b) Write a Python program to Count the frequencies in a list using dictionary in Python. |  |  |
| 12. | a) Write a Python Program to Capitalize First Letter of Each Word in a File.  b.) Write a Python Program to Print the Contents of File in Reverse Order. |  |  |
| 13. | Write program to catch an exception and handle it using try and except code blocks. |  |  |
| 14. | Write a Python Program to Append, Delete and Display Elements of a List using Classes. |  |  |
| 15. | Write a [Python Program to Find the Area and Perimeter of the Circle using Class](https://www.sanfoundry.com/python-program-class-compute-area-perimeter-circle/). |  |  |
| 16. | Create an interactive application using Python's Tkinter library for graphics programming. |  |  |

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**Program 1: Write a Python Program to Calculate the Area of a Triangle**

**Solution:**

base = float(input("Enter the base of the triangle: "))

height = float(input("Enter the height of the triangle: "))

area = 0.5 \* base \* height

print(f"The area of the triangle with base {base} and height {height} is: {area}")

**Program 2: Write a Python Program to Swap 2 Variables.**

**Solution:**

a = input("Enter the first variable (a): ")

b = input("Enter the second variable (b): ")

print ("First variable (a) before swapping =", a)

print ("Second variable (b) before swapping =", b)

temp = a

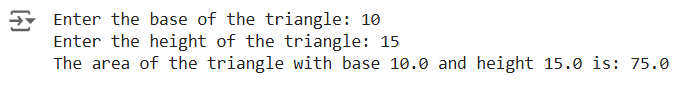
a = b

b = temp

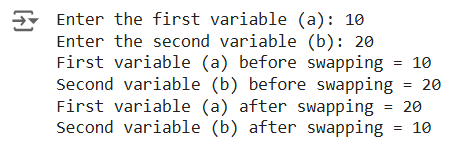
print ("First variable (a) after swapping =", a)

print ("Second variable (b) after swapping =", b)

**OUTPUT: Program 1**

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**Output: Program 2**

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