1. **Print a Hello message on interactive screen.**

**Ans :- print("Hello!")**

**2. Create a Python program to demonstrate the use of comments(single and multi-line).**

**Ans :-**

**# This is a single-line comment**

**"""**

**This is a**

**multi-line comment**

**"""**

**print("Comments demonstrated.")**

**3. Create a Python program that will have 3 variables which stores integer, float and complex value. Display its value and also demonstrate its datatype class using type().**

**Ans :-**

**integer\_var = 10**

**float\_var = 3.14**

**complex\_var = 2 + 3j**

**print("Integer:", integer\_var, type(integer\_var))**

**print("Float:", float\_var, type(float\_var))**

**print("Complex:", complex\_var, type(complex\_var))**

**4. Create a Python program that will have one string variable =“Welcome to Python”. Perform following operations:**

**• Print whole string**

**• Print only first character of string**

**• Print 3rdcharacter to -1 character of string using slicing operator**

**• Print string from 4thcharacter to the end of string using slicing operator • Print whole string 5 times using appropriate operator.**

**Ans :-**

**string\_var = "Welcome to Python"**

**print("Whole string:", string\_var)**

**print("First character:", string\_var[0])**

**print("3rd to -1 character:", string\_var[2:-1])**

**print("From 4th character to the end:", string\_var[3:])**

**print("String repeated 5 times:", string\_var \* 5)**

**5. Create a Python program that will have one list with values = [‘Navratri’, ‘Diwali’, ‘Holi’, ‘Rakshabandhan’,’Bakri Id’, ‘Muharram’ ]. Perform following operations: • Print whole list • Print only first element of list • Prints elements starting from 2nd till 3 rd • Prints elements starting from 2ndelement till last • Print whole list 4 times using appropriate operator**

**Ans:-**

**my\_list = ['Navratri', 'Diwali', 'Holi', 'Rakshabandhan', 'Bakri Id', 'Muharram']**

**print("Whole list:", my\_list)**

**print("First element:", my\_list[0])**

**print("Elements from 2nd to 3rd:", my\_list[1:3])**

**print("Elements from 2nd to last:", my\_list[1:])**

**print("List repeated 4 times:", my\_list \* 4)**

**6. Create a Python program that will have one fruit dictionary with fruit values. Display keys and values separately.**

**Ans :-**

**fruit\_dict = {'apple': 'red', 'banana': 'yellow', 'orange': 'orange'}**

**print("Keys:", list(fruit\_dict.keys()))**

**print("Values:", list(fruit\_dict.values()))**

**7. Create a Python program that will have one tuple of vegetables with values = (‘Potato’, ‘Brinjal’,‘Tomato’,‘Cabbage’, ‘Cauliflower’). Perform following operations: • Print whole tuple • Print only first element of tuple • Prints elements starting from 2ndtill4 th • Prints elements starting from 2ndelement till last • Print whole tuple twice using appropriate operator**.

**Ans :-**

**vegetables\_tuple = ('Potato', 'Brinjal', 'Tomato', 'Cabbage', 'Cauliflower')**

**print("Whole tuple:", vegetables\_tuple)**

**print("First element:", vegetables\_tuple[0])**

**print("Elements from 2nd to 4th:", vegetables\_tuple[1:4])**

**print("Elements from 2nd to last:", vegetables\_tuple[1:])**

**print("Tuple repeated twice:", vegetables\_tuple \* 2)**

**8. Write a Python program that will demonstrate the use of Sting Functions.**

**Ans:-**

**my\_string = "Python Programming"**

**print("Length:", len(my\_string))**

**print("Upper case:", my\_string.upper())**

**print("Lower case:", my\_string.lower())**

**print("Is title case?", my\_string.istitle())**

**9. Write a Python program that will display numbers from 1 to 20(both inclusive) using range()function.**

**Ans:-**

**for number in range(1, 21):**

**print(number)**

**10. Write a Python program to calculate the area of rectangle and square.**

**Ans:-**

**# Function to calculate the area of a rectangle**

**def rectangle\_area(length, width):**

**return length \* width**

**# Function to calculate the area of a square**

**def square\_area(side):**

**return side \* side**

**# Input for rectangle**

**length\_rect = float(input("Enter the length of the rectangle: "))**

**width\_rect = float(input("Enter the width of the rectangle: "))**

**# Input for square**

**side\_square = float(input("Enter the side length of the square: "))**

**# Calculate and display the area of rectangle and square**

**area\_rect = rectangle\_area(length\_rect, width\_rect)**

**area\_square = square\_area(side\_square)**

**print("Area of Rectangle:", area\_rect)**

**print("Area of Square:", area\_square)**

**11. Write a Python program to swap of two numbers.**

**Ans:-**

**# Input two numbers**

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

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

**# Displaying numbers before swapping**

**print("Before swapping: num1 =", num1, ", num2 =", num2)**

**# Swap using a temporary variable**

**temp = num1**

**num1 = num2**

**num2 = temp**

**# Displaying numbers after swapping**

**print("After swapping: num1 =", num1, ", num2 =", num2)**

**# Input two numbers**

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

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

**# Displaying numbers before swapping**

**print("Before swapping: num1 =", num1, ", num2 =", num2)**

**# Swap without using a temporary variable**

**num1 = num1 + num2**

**num2 = num1 - num2**

**num1 = num1 - num2**

**# Displaying numbers after swapping**

**print("After swapping: num1 =", num1, ", num2 =", num2)**

**12. Write a Python program to calculate the sum of 5 subject and find the percentage.**

**Ans:-**

**# Input marks for 5 subjects**

**subject1 = float(input("Enter marks for subject 1: "))**

**subject2 = float(input("Enter marks for subject 2: "))**

**subject3 = float(input("Enter marks for subject 3: "))**

**subject4 = float(input("Enter marks for subject 4: "))**

**subject5 = float(input("Enter marks for subject 5: "))**

**# Calculate sum of marks**

**total\_marks = subject1 + subject2 + subject3 + subject4 + subject5**

**# Assuming each subject has a maximum of 100 marks**

**max\_marks\_per\_subject = 100**

**total\_max\_marks = 5 \* max\_marks\_per\_subject**

**# Calculate percentage**

**percentage = (total\_marks / total\_max\_marks) \* 100**

**# Display the result**

**print("\nTotal Marks:", total\_marks)**

**print("Total Maximum Marks:", total\_max\_marks)**

**print("Percentage:", round(percentage, 2), "%")**

**13. Write a Python program to find length of string.**

**Ans:-**

**# Input a string from the user**

**user\_input = input("Enter a string: ")**

**# Calculate and display the length of the string**

**length\_of\_string = len(user\_input)**

**print("Length of the string:", length\_of\_string)**

**14. Write a Python program that will perform following conversions using appropriate method: 1. string to integer 2. integer to float 3. tuple to list 4. string to list 5. list to tuple**

**Ans:-**

**# 1. String to Integer**

**string\_num = "123"**

**integer\_num = int(string\_num)**

**# 2. Integer to Float**

**integer\_value = 123**

**float\_value = float(integer\_value)**

**# 3. Tuple to List**

**my\_tuple = (1, 2, 3, 4, 5)**

**my\_list = list(my\_tuple)**

**# 4. String to List**

**string\_text = "Python"**

**list\_text = list(string\_text)**

**# 5. List to Tuple**

**my\_list\_of\_numbers = [10, 20, 30, 40, 50]**

**my\_tuple\_of\_numbers = tuple(my\_list\_of\_numbers)**

**# Displaying the results**

**print("1. String to Integer:", integer\_num)**

**print("2. Integer to Float:", float\_value)**

**print("3. Tuple to List:", my\_list)**

**print("4. String to List:", list\_text)**

**print("5. List to Tuple:", my\_tuple\_of\_numbers)**

**15. Write a Python program that will demonstrate the use of Arithmetic Operators**.

**Ans:-**

**# Input two numbers**

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

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

**# Arithmetic operations**

**sum\_result = num1 + num2**

**difference\_result = num1 - num2**

**product\_result = num1 \* num2**

**quotient\_result = num1 / num2**

**remainder\_result = num1 % num2**

**power\_result = num1 \*\* num2**

**# Displaying the results**

**print("Sum:", sum\_result)**

**print("Difference:", difference\_result)**

**print("Product:", product\_result)**

**print("Quotient:", quotient\_result)**

**print("Remainder:", remainder\_result)**

**print("Power:", power\_result)**

**16. Write a Python program that will demonstrate the use of Comparison Operators.**

**Ans:-**

**# Input two numbers**

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

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

**# Comparison operations**

**equal\_result = num1 == num2**

**not\_equal\_result = num1 != num2**

**greater\_than\_result = num1 > num2**

**less\_than\_result = num1 < num2**

**greater\_than\_equal\_result = num1 >= num2**

**less\_than\_equal\_result = num1 <= num2**

**# Displaying the results**

**print("Equal:", equal\_result)**

**print("Not Equal:", not\_equal\_result)**

**print("Greater Than:", greater\_than\_result)**

**print("Less Than:", less\_than\_result)**

**print("Greater Than or Equal:", greater\_than\_equal\_result)**

**print("Less Than or Equal:", less\_than\_equal\_result)**

**17. Write a Python program that will demonstrate the use of Bit wise Operators.**

**Ans:-**

**# Input two integers**

**num1 = int(input("Enter the first integer: "))**

**num2 = int(input("Enter the second integer: "))**

**# Bitwise AND**

**bitwise\_and\_result = num1 & num2**

**# Bitwise OR**

**bitwise\_or\_result = num1 | num2**

**# Bitwise XOR**

**bitwise\_xor\_result = num1 ^ num2**

**# Bitwise NOT**

**bitwise\_not\_result\_num1 = ~num1**

**bitwise\_not\_result\_num2 = ~num2**

**# Bitwise Left Shift**

**bitwise\_left\_shift\_result = num1 << 1**

**# Bitwise Right Shift**

**bitwise\_right\_shift\_result = num1 >> 1**

**# Displaying the results**

**print("Bitwise AND:", bitwise\_and\_result)**

**print("Bitwise OR:", bitwise\_or\_result)**

**print("Bitwise XOR:", bitwise\_xor\_result)**

**print("Bitwise NOT (num1):", bitwise\_not\_result\_num1)**

**print("Bitwise NOT (num2):", bitwise\_not**

**18. Write a Python program that will demonstrate the use of Assignment Operators.**

**Ans:-**

**# Initializing variables**

**a = 5**

**b = 3**

**# Assignment Operators**

**# Basic Assignment**

**result = a**

**print("Basic Assignment - result =", result)**

**# Add and Assign**

**result += b**

**print("Add and Assign - result =", result)**

**# Subtract and Assign**

**result -= b**

**print("Subtract and Assign - result =", result)**

**# Multiply and Assign**

**result \*= b**

**print("Multiply and Assign - result =", result)**

**# Divide and Assign**

**result /= b**

**print("Divide and Assign - result =", result)**

**# Modulus and Assign**

**result %= b**

**print("Modulus and Assign - result =", result)**

**# Exponent and Assign**

**result \*\*= b**

**print("Exponent and Assign - result =", result)**

**# Floor Division and Assign**

**result //= b**

**print("Floor Division and Assign - result =", result)**

**19. Write a Python program that will demonstrate the use of Logical Operators.**

**Ans:-**

**# Input two boolean values**

**bool1 = bool(int(input("Enter 0 or 1 for the first boolean value: ")))**

**bool2 = bool(int(input("Enter 0 or 1 for the second boolean value: ")))**

**# Logical Operators**

**# Logical AND**

**logical\_and\_result = bool1 and bool2**

**# Logical OR**

**logical\_or\_result = bool1 or bool2**

**# Logical NOT**

**logical\_not\_result\_bool1 = not bool1**

**logical\_not\_result\_bool2 = not bool2**

**# Displaying the results**

**print("Logical AND:", logical\_and\_result)**

**print("Logical OR:", logical\_or\_result)**

**print("Logical NOT (bool1):", logical\_not\_result\_bool1)**

**print("Logical NOT (bool2):", logical\_not\_result\_bool2)**

**20. Write a Python program that will demonstrate the use of Identity Operators**

**Ans:-**

**# Input two objects**

**obj1 = input("Enter the first object: ")**

**obj2 = input("Enter the second object: ")**

**# Identity Operators**

**# is operator**

**is\_result = obj1 is obj2**

**# is not operator**

**is\_not\_result = obj1 is not obj2**

**# Displaying the results**

**print("is Operator:", is\_result)**

**print("is not Operator:", is\_not\_result)**

**21. Write a Python program that will demonstrate the use of Membership Operators.**

**Ans:-**

**# Input a sequence (string or list)**

**sequence = input("Enter a sequence (string or list): ")**

**# Membership Operators**

**# in operator**

**in\_result = 'a' in sequence**

**# not in operator**

**not\_in\_result = 'z' not in sequence**

**# Displaying the results**

**print("'a' in Sequence:", in\_result)**

**print("'z' not in Sequence:", not\_in\_result)**

**22. Write a Python program which have string str = “Hello World”,count how many times ‘l’ is repeated in str using count()function.**

**Ans:-**

**# Given string**

**str\_text = "Hello World"**

**# Count how many times 'l' is repeated in str**

**count\_of\_l = str\_text.count('l')**

**# Display the result**

**print("The character 'l' is repeated", count\_of\_l, "times in the string.")**

**23. Write a Python program which asks the user to input a string. Convert that string into opposite case than inputted by user. F o r e x a m p l e : s t r = “ P y t H o n ” t h a n o u t p u t = “ p Y T h O N ”**

**ANS:-**

**# Input a string from the user**

**user\_input = input("Enter a string: ")**

**# Convert the string into the opposite case**

**opposite\_case\_string = user\_input.swapcase()**

**# Display the result**

**print("Original String:", user\_input)**

**print("Opposite Case String:", opposite\_case\_string)**

**24. Write a Python program which asks the user to input a string. Convert that string into title case**.

**Ans:-**

**# Input a string from the user**

**user\_input = input("Enter a string: ")**

**# Convert the string into title case**

**title\_case\_string = user\_input.title()**

**# Display the result**

**print("Original String:", user\_input)**

**print("Title Case String:", title\_case\_string)**

**25. Write a Python program which asks the user to input a string. Find the sub-string in given string. (Hint: Welcome in GLS University, Find the position of ‘Uni’ from given string)**

**Ans:-**

**# Input a string from the user**

**user\_input = input("Enter a string: ")**

**# Find the position of 'Uni' in the given string**

**substring = 'Uni'**

**position = user\_input.find(substring)**

**# Display the result**

**if position != -1:**

**print(f"The position of '{substring}' in the string is: {position}")**

**else:**

**print(f"The sub-string '{substring}' is not found in the given string.")**

**26. Write a Python program which asks the user to input a string and perform lstrip and rstrip function on input string.**

**Ans:-**

**# Input a string from the user**

**user\_input = input("Enter a string: ")**

**# Perform lstrip() on the input string**

**lstripped\_string = user\_input.lstrip()**

**# Perform rstrip() on the input string**

**rstriped\_string = user\_input.rstrip()**

**# Display the results**

**print("Original String:", user\_input)**

**print("After lstrip():", lstripped\_string)**

**print("After rstrip():", rstriped\_string)**

**27. Write a Python program which asks the user to input a string. Perform the following operations: • Slicing operation • Concatenate by using + and , operator**

**Ans:-**

**# Input a string from the user**

**user\_input = input("Enter a string: ")**

**# Slicing operation**

**sliced\_portion = user\_input[1:5]**

**# Concatenate using + operator**

**concatenated\_with\_plus = user\_input + " Concatenated with +"**

**# Concatenate using , operator**

**concatenated\_with\_comma = user\_input, " Concatenated with ,"**

**# Display the results**

**print("Original String:", user\_input)**

**print("Sliced Portion (2nd to 5th character):", sliced\_portion)**

**print("Concatenated with + Operator:", concatenated\_with\_plus)**

**print("Concatenated with , Operator:", concatenated\_with\_comma)**

**28. Write a Python program which asks the user to input a string. Use endswith and startwith operations on input string.**

**Ans:-**

**# Input a string from the user**

**user\_input = input("Enter a string: ")**

**# Using endswith() to check if the string ends with 'World'**

**ends\_with\_world = user\_input.endswith('World')**

**# Using startswith() to check if the string starts with 'Hello'**

**starts\_with\_hello = user\_input.startswith('Hello')**

**# Display the results**

**print("Original String:", user\_input)**

**print("Ends with 'World':", ends\_with\_world)**

**print("Starts with 'Hello':", starts\_with\_hello)**

**29. Write a program to accept a filename from the user print the extension of that.**

**Ans:-**

**# Input a filename from the user**

**filename = input("Enter a filename: ")**

**# Find the index of the last dot in the filename**

**dot\_index = filename.rfind('.')**

**# Check if a dot is found and print the extension**

**if dot\_index != -1:**

**extension = filename[dot\_index + 1:]**

**print(f"The extension of the file is: {extension}")**

**else:**

**print("No extension found in the filename.")**

**30. Write a program to convert the temperature from degree centigrade to Fahrenheit.[C = ((F32)\*5)/9]**

**Ans:-**

**# Input temperature in Celsius from the user**

**celsius = float(input("Enter temperature in Celsius: "))**

**# Convert Celsius to Fahrenheit**

**fahrenheit = (celsius \* 9/5) + 32**

**# Display the result**

**print(f"{celsius} degrees Celsius is equal to {fahrenheit} degrees Fahrenheit.")**

**31. Write a program to calculate the sum of 5 subject and find the percentage.**

**Ans:-**

**# Input marks for 5 subjects**

**subject1 = float(input("Enter marks for subject 1: "))**

**subject2 = float(input("Enter marks for subject 2: "))**

**subject3 = float(input("Enter marks for subject 3: "))**

**subject4 = float(input("Enter marks for subject 4: "))**

**subject5 = float(input("Enter marks for subject 5: "))**

**# Calculate sum of marks**

**total\_marks = subject1 + subject2 + subject3 + subject4 + subject5**

**# Assuming each subject has a maximum of 100 marks**

**max\_marks\_per\_subject = 100**

**total\_max\_marks = 5 \* max\_marks\_per\_subject**

**# Calculate percentage**

**percentage = (total\_marks / total\_max\_marks) \* 100**

**# Display the result**

**print("\nTotal Marks:", total\_marks)**

**print("Total Maximum Marks:", total\_max\_marks)**

**print("Percentage:", round(percentage, 2), "%")**

**32. Write a program to get the Python version**

**Ans:-**

**import sys**

**# Get Python version**

**python\_version = sys.version**

**# Display the Python version**

**print("Python Version:", python\_version)**