ASSIGNMENT 1-

Q1- Write a Python program to take two numbers as input and print their sum.

A1-

x=int(input("enter 1st no : "))

y=int(input("enter 2nd no : "))

z=x+y

print("the sum of 2 numbers are",z)

2. Write a Python program to take two numbers as input and print their difference.

A2-

x=int(input("enter 1st no : "))

y=int(input("enter 2nd no : "))

z=x-y

print("the diff of 2 numbers are",z)

3 Write a Python program to take two numbers as input and print their product.

x=int(input("enter 1st no : "))

y=int(input("enter 2nd no : "))

z=x\*y

print("the product of 2 numbers are",z)

4 Write a Python program to take two numbers as input and print their quotient

x=int(input("enter 1st no : "))

y=int(input("enter 2nd no : "))

z=x/y

print("the quotient of 2 numbers are",z)

5 Write a Python program to take two numbers as input and print their remainder

x=int(input("enter 1st no : "))

y=int(input("enter 2nd no : "))

z=x%y

print("the remainder of 2 numbers are",z)

6. Write a Python program to take two numbers as input and print their power

x=int(input("enter 1st no : "))

y=int(input("enter the power : "))

z=x\*\*y

print("the power of 2 numbers are",z)

7.Write a Python program to take two numbers as input and print their average

x=int(input("enter 1st no : "))

y=int(input("enter 2nd no : "))

z=(x+y)/2

print("the average of 2 numbers are",z)

8. Write a Python program to take a number as input and print its square root

import math

x=int(input("enter the  no : "))

if x<0:

  print("error in input")

else:

  z=math.sqrt(x)

  print("the square root of a number is ",z)

9. Write a Python program to take a number as input and print its cube root.

x=int(input("enter the  no : "))

z=x\*\*(1/3)

print("the cube root of a number is ",z)

10. Write a Python program to take a number as input and print its absolute value.

x=int(input("enter the  no : "))

z=abs(x)

print("the absolute number is ",z)

11. Write a Python program to take a number as input and print its floor value.

import math

x=float(input("enter the floor value : "))

z=math.floor(x)

print("the floor value is ",z)

12. Write a Python program to take a number as input and print its ceiling value.

import math

x=float(input("enter value : "))

z=math.ceil(x)

print("the ceiling value is ",z)

ASSIGNMENT 2-

**1. Write a Python program that takes two numbers as input and calculates their**

**sum.**

A1-

x=int(input("enter 1st no : "))

y=int(input("enter 2nd no : "))

z=x+y

print("the sum of 2 numbers are",z)

2. **Write a Python program that checks if a given number is even or odd and**

**prints an appropriate message.**

x=int(input("enter value : "))

if x%2==0:

  print("the number you have enter is even",x)

else:

  print("the number you have enter is odd",x)

**3. Write a Python program that takes a user's age as input and prints "You are a**

**minor" if the age is less than 18, "You are an adult" if the age is 18 or older but**

**less than 65, and "You are a senior" if the age is 65 or older.**

x=int(input("enter age : "))

if x>=65:

  print("you are senior citizen")

elif x>=18 and x<65:

  print ("You are adult")

else:

  print ("You are minor")

**4.Write a Python program that calculates the area of a rectangle. It should take**

**the length and width as input from the user.**

x=int(input("enter length of rectangle : "))

y=int(input("enter width of the rectangle : "))

z=x\*y

print("the area of the rectangle is",z)

**5. Write a Python program that checks if a given year is a leap year. A leap year is**

**a year that is divisible by 4 but not divisible by 100, except if it is also divisible**

**by 400.**

x=int(input("enter the year:"))

if(x%4==0 and x%100!=0) or (x%400==0):

  print(x,"year is a leap year ")

else:

  print(x,"year is not a leap year ")

**6. Write a Python program that takes a user's score as input and assigns a letter**

**grade based on the following grading scale:**

**- A: 90-100**

**- B: 80-89**

**- C: 70-79**

**- D: 60-69**

**- F: Below 60**

a=int(input("enter the score :"))

if a<60:

  print("Your final grade for score is F for", a)

elif a>=60 and a<=69:

  print("Your final grade for score is D for",a)

elif a>=70 and a<=79:

  print("Your final grade for score is C for",a)

elif a>=80 and a<=89:

  print("Your final grade for score is B for",a)

else:

  print("Your final grade for score is A for",a)

**7.Write a Python program that asks the user for their name and age. If the user's**

**age is less than 13, print "Sorry, you are not eligible for this service."**

**Otherwise, print a greeting message with their name.**

x=int(input("enter age : "))

y=str(input("enter name :"))

if x>=13:

  print("HELLO AND WELCOME DEAR ",y)

else:

  print ("Sorry, you are not eligible for this service",y)

**8. Write a Python program that takes a number as input and checks if it is**

**positive, negative, or zero. Print an appropriate message based on the input.**

a=int(input("enter a number :"))

if a>0:

  print(a,"NUMBER IS POSITIVE")

elif a<0:

  print(a,"NUBER IS NEGAIVE")

else:

  print(a,"NUMBER IS ZERO")

**9. Write a Python program that calculates the factorial of a given number. The**

**factorial of a non-negative integer n is the product of all positive integers less**

**than or equal to n.**

**10. Write a Python program that checks if a given string is a palindrome. A**

**palindrome is a word, phrase, number, or other sequence of characters that**

**reads the same forward and backward (ignoring spaces, punctuation, and**

**capitalization).**

ASSIGNMENT-3-

1. Declare an integer variable x with the value 5. Print the value of x.

x = 5

print(x)

1. 2. Create a floating-point variable y with the value 3.14. Print the value of y.

y = 3.14

print(y)

1. Convert the string "123" to an integer and store it in a variable num.

num = int("123")

print(num)

4. Convert the integer 42 to a string and store it in a variable str\_num.

str\_num = str(42)

print(str\_num)

print(type(str\_num))

5. Write a Python program that checks if a number entered by the user is both positive and even using the and operator.

a=int(input("enter a number :"))

if a>0 and a%2==0:

  print(a,"NUMBER IS EVEN AND POSITIVE")

else:

  print(a,"NUMBER IS ODD AND POSITIVE")

6.Create a Python program that checks if a character entered by the user is either an uppercase letter or a digit using the or operator.

a=input("Enter the character :")

if a.isupper() or a.isdigit():

  print("The character is either upppercase and digit ")

else:

  print("The character is neither lower case and digit ")

7. Write a Python program that checks if a user-entered string is not empty using the not operator.

8. Create a Python program that checks if a number entered by the user is divisible by either 3 or 5 but not both.

9. Write a Python program that checks if a student's score is between 0 and 100 (inclusive) using logical operators. If it is, print "Valid score," otherwise, print "Invalid score."

a=int(input("Enter score of the student"))

if a>0 and a<=100:

  print("Valid score",a)

else:

  print("Invalid Score",a)

10. Create a Python program that asks the user for their age. If their age is between 18 and 65 (inclusive), print "You are eligible for work," otherwise, print "You are not eligible for work."

x=int(input("enter age : "))

if x>=18 and x<65:

  print ("You are eligible for work")

else:

  print ("You are not elgible for work")

11.Write a Python program that takes a number as input from the user and doubles it using the \*= assignment operator. Print the result.

a=int(input("enter the number : "))

a\*=2

print(a)

12. Write a Python program to swap the values of two variables x and y without using a temporary variable, using assignment operators.

13. Implement a Python program that keeps doubling a number x until it reaches or exceeds 100, using assignment operators.

14. Create a Python program that calculates and prints the average of three numbers entered by the user using the /= assignment operator.

a=int(input("enter first no"))

b=int(input("enter second no"))

c=int(input("enter third no"))

d=(a+b+c)/3

print("Average of number is ",d)

15. Write a Python program that calculates and prints the square of a number entered by the user using the \*\*= assignment operator.

a=int(input("enter the number : "))

a\*\*=2

print(a)

16 Create a Python program that compares the lengths of two strings entered by the user and prints whether they have the same length, different lengths, or if one is longer than the other.

x=input("enter the first string")

y=input("enter the second string")

if len (x)==len(y):

  print("FIRST STRING",x ,"IS EQUAL TO THE LENGTH OF",y)

elif len(x)>len(y):

  print("FIRST STRING",x ,"IS GREATER IN LENGTH FROM",y)

else:

  print("FIRST STRING",x ,"IS LESSER IN LENGTH FROM",y)

17. Write a Python program that checks if a given year is a leap year or not, using comparison operators to check divisibility.

18. Calculate the result of 7 divided by 2 and assign it to a variable result.

x=7/2

print(x)

19. Calculate the remainder when 17 is divided by 5 and store it in a variable remainder.

x=17%5

print(x)

20. Write a Python program that calculates the sum of all even numbers between 1 and 50 using arithmetic operators and loops.

x=0

for i in range(1,51):

  if i%2==0:

    x=x+i

print("the sum of numbers between 1 and 50 is ",x)

21. Write a Python program that takes two numbers as input from the user and prints their sum.

22. Write a Python program that takes two numbers as input from the user, but with a twist. The program should only accept input if the sum of the two numbers is less than 100. If the sum is 100 or greater, the program should ask the user to re-enter both numbers until the sum is less than 100, and then it should print the sum. Using Loop

23. Write a program that calculates and prints the area of a rectangle given its length and width (inputs from the user).

24. Take two number inputs from user.

1. Find out the square of the given two numbers and store the value in different two variables

2. Find out the average of the numbers

3. Find out the datatype of the average value

4. Now find out the remainder of the Average value when the value is divided by 2

5. Print the final outcome in Integer Format

6. Write a Python program that calculates and prints the square root of a given positive number. If the number is negative, print an error message.

25. What is the result of 10 / 3 and 10//3 in Python, and why?

| **Operator** | **Description** | **Example** | **Result** |
| --- | --- | --- | --- |
| / | Floating-point division | 10 / 3 | 3.3333333333333335 |
| // | Floor division (integer part) | 10 // 3 | 3 |

26 Explain the difference between = and == in Python

| **Feature** | **= (Assignment)** | **== (Equality Check)** |
| --- | --- | --- |

|  |  |  |
| --- | --- | --- |
| Purpose | Assigns a value to a variable | Compares two values for equality |

|  |  |  |
| --- | --- | --- |
| Returns Value? | No | Yes (True or False) |

|  |  |  |
| --- | --- | --- |
| Used in | Variable assignment | Conditional statements, comparisons |

|  |  |  |
| --- | --- | --- |
| Example | x = 20 | x == 20 |

ASSIGNMENT-4-

1. Declare an integer variable `age` with the value 25.

age=25

print(age)

print(type(age))

2. Create a string variable `name` with your name as its value.

name="ROBIN"

print(name)

print(type(name))

3. Declare a list variable `fruits` containing three fruit names ofyour choice.

fruit=["apple","banana","cherry"]

print(fruit)

4. Write code to swap the values of two variables, `a` and `b`,

without using a temporary variable.a=20

b=34

a,b=b,a

print("a:",a)

print("b:",b)

5. Create a float variable `price` with the value 19.99.

price=19.99

print(price)

print(type(price))

6. Define a boolean variable `is\_student` and set it to `True`.

is\_student = True

print(is\_student)

7. Create a tuple variable `coordinates` that stores the latitude and longitude of a location (e.g., (40.7128, -74.0060)).

coordinates = (40.7128, -74.0060)

print(coordinates)

8. Declare a dictionary variable `student` with keys "name" and

"age" and set their values accordingly.

student = {"name":"sharmistha","age":27}

print(student)

9. Write a Python program that calculates the area of a circle with a given radius. Use a variable `radius` to store the radius value.

10. Create a list variable `numbers` containing integers from 1 to 10 using list comprehension.

numbers = [x for x in range(1, 11)]

print(numbers)

11. Define a variable `is\_valid` and set it to `False`. Then write code to toggle its value to `True`.

is\_valid = False

is\_valid = not is\_valid

print(is\_valid)

12. Declare a string variable `sentence` with a sentence of your

choice.

sentence="Rose is my favourite flower"

print(sentence)

13. Write a program that calculates the sum of all numbers from 1 to 100 using a variable `total\_sum`.

total\_sum = 0

for number in range(1, 101):

    total\_sum += number

print(total\_sum)

14. Create a list variable `grades` containing five test scores as floating-point numbers.

grades = [56.6,78.2,45.3,90.5,99.2]

print(grades)

15. Define a variable `greeting` and assign it the value "Hello,

World!".

greeting = "Hello, World!"

print(greeting)

16. Declare a tuple variable `months` containing the names of the twelve months of the year.

months = ("January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December")

print(months)

17. Write code that increments an integer variable `counter` by 1 and then prints its value.

counter=67

counter+=1

print(counter)

18. Create a dictionary variable `book` with keys "title", "author",and "year" to store information about a book.

b book={"title":"HARRY POTTER","author":"JK ROWLING","year":1970}

print(book)

19. Define a variable `pi` and assign it the value of the

mathematical constant π (pi).

20. Declare a list variable `colors` containing the names of five different colors.

colour=["red","Blue","green","white","black"]

print(colour)

21. Write a program that calculates the area of a rectangle using variables `length` and `width`.

length = 34

width = 10

area = length \* width

print("the area of the rectangle is:",area)

22. Create a dictionary variable `person` with keys "first\_name"

and "last\_name" to store a person's name.

person={"name":"Robin","surname":"Biswas"}

print(person)

23. Define a variable `temperature` and assign it a value in

Celsius. Convert it to Fahrenheit and store the result in another

variable.

a=int(input("enter the temperature in celsius : "))

b=((a\*9/5)+32)

print("The temperature in faherinite is :",b)

24. Write code that appends a new item to a list named

'shopping\_list'.

shopping\_list=["fish","chicken","mutton"]

i="daal"

shopping\_list.append(i)

print(shopping\_list)

25. Declare a variable `is\_raining` and set it to `True`. Then write code to change its value to `False`.

is\_raining = True

print("Is it raining?", is\_raining)

is\_raining = False

print("Is it raining?", is\_raining)

TYPE CASTING

1. Write a Python program that takes an integer as input and

converts it to a float.

a=int(input("enter a number :"))

b=float(a)

print("integer to float value is :", b)

2. Create a program that prompts the user for their age as a

string, converts it to an integer, and then checks if they are

eligible to vote (18 or older).

a=str(input("Enter the age :"))

a=int(a)

if a>=18:

  print(a,"Eligible for vote")

else:

  print(a,"Not eligible for vote")

3.Write code to convert a float to an integer and round it to the

nearest whole number.

a=float(input("enter the number :"))

b=round(a)

print("The whole number is :",'b)

4. Create a program that takes a user-provided string, converts it to lowercase, and checks if it contains the word "python."

a=str(input("Enter the string :"))

b=a.lower()

print(b)

5.Write a program that takes a user-provided string containing a number (e.g., "42") and converts it to an integer.

a=(input("Enter a number"))

b=[int(num) for num in a]

print("The integer value is :",b)

6. Create a Python script that converts a list of integers into a list of strings.

a=[3,5,7]

b=[str(num)for num in a]

print(b)

9. Write code that converts a list of strings representing numbers (e.g., ["3", "5", "7"]) into a list of integers.

a=["3","5","7"]

b=[int(num)for num in a]

print(b)

8. Create a program that takes a user-provided number in string

format and converts it to a binary number in integer form.

7. Write a program that calculates the area of a triangle using

user-provided string inputs for the base and height. Convert these strings to floats for the calculation

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

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

c=float(a)

d=float(b)

e=0.5\*c\*d

print("The area of triangle is :",e)

ASSIGNMENT-5

1. Write a Python program to print the first 10 natural numbers using a while loop.

for i in range(1,11):

  print(i)

2. Write a Python program to calculate the sum of all numbers from 1 to a given number using a for loop.

a=int(input("Enter a number"))

s=0

for i in range(1,a+1):

  s=s+i

print("the sum of entered numbers are :",s)

3. Write a Python program to print the multiplication table of a given number using a for loop.

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

s=1

for i in range (1,a+1):

  s=s\*i

print(s)

4. Write a Python program to count the total number of digits in a number using a while loop.

5. Write a Python program to display numbers from -10 to -1 using a for loop.

for i in range (-10,0):

  print(i)

6. Write a Python program to use the else block to display a message “Done” after successful execution of a for loop.

7.Write a Python program to display all prime numbers within a range using a for loop.

8. Write a Python program to display the Fibonacci series up to 10 terms using a for loop

9. Write a Python program to find the factorial of a given number using a for loop.

10. Write a Python program to reverse a given integer number using a while loop.

11.Write a Python program to calculate the cube of all numbers from 1 to a given number using a for loop

ASSIGNMENT-6:

1. Write a Python program to sum all the items in a list.

a=[2,56,32,55]

n=sum(a)

print("The sum of all items are",n)

2. Write a Python program to find the largest number in a list.

a=[32,34,2,43,455]

n=max(a)

print("The largest number is", n)

3. Write a Python program to find the smallest number in a list.

a=[32,34,2,43,455]

n=min(a)

print("The smallest number is", n)

4. Write a Python program to count the number of elements in a list.

a=[32,34,2,43,455]

n=len(a)

print("The length is ", n)

5. Write a Python program to remove duplicates from a list.

a=[32,34,32,2,43,455]

n=list(set(a))

print("The list without duplicate is ", n)

6. Write a Python program to check if a list is empty or not.

a=[]

if not a:

  print("LIST IS EMPTY")

else:

  print("LIST IS NOT EMPTY ")

7. Write a Python program to find the length of a tuple.

a=(32,34,2,43,455)

n=len(a)

print("The length is ", n)

8. Write a Python program to find the largest number in a tuple.

9. Write a Python program to find the smallest number in a tuple.

10. Write a Python program to count the number of elements in a tuple.

a=(32,34,2,43,455)

n=max(a)

o=min(a)

p=len(a)

print("The largest number is", n)

print("The smalest number is", o)

print("tuple count is ",p)

11. Write a Python program to check if a tuple is empty or not.

a=()

if not a:

  print("LIST IS EMPTY")

else:

  print("LIST IS NOT EMPTY ")

12. Write a Python program to check if a given element exists in a list.

l=[20,30,50,60]

a=int(input("Enter an alement to check"))

if a in l:

  print("Element is in the list ",a)

else:

  print("Element is not in the list",a)

13. Write a Python program to check if a given element exists in a tuple.

l=(20,30,50,60)

a=int(input("Enter an alement to check"))

if a in l:

  print("Element is in the tuple ",a)

else:

  print("Element is not in the tuple",a)

14. Write a Python program to check if a given key exists in a dictionary.

l={20,30,50,60}

a=int(input("Enter an alement to check"))

if a in l:

  print("Element is in the dictionary ",a)

else:

  print("Element is not in the dictionary",a)

15. Write a Python program to find the sum of all even numbers in a list.

16. Write a Python program to find the sum of all odd numbers in a list.

s=0

n=0

l=[22,33,4,65,11,10,5]

for i in l:

  if i%2==0:

    s=s+1

  else:

    n=n+1

print("sum of even numbers are :", s)

print("sum of odd numbers are :",n)

17. Write a Python program to find the factorial of a number using recursion.

18. Write a Python program to find the factorial of a number using a loop.

19. Write a Python program to check if a number is prime or not.

20. Write a Python program to find the Fibonacci series up to n terms.

21. Write a Python program to find the GCD of two numbers.

22. Write a Python program to find the LCM of two numbers.

23. Write a Python program to reverse a list.

a=[24,34,11,22,45,29,1]

print("Original list is",a)

a.reverse()

print("Reverse order of list is",a)

24. Write a Python program to sort a list in ascending order.

a=[24,34,11,22,45,29,1]

print("Original list is",a)

a.sort()

print("Ascending order of list is",a)

25. Write a Python program to sort a list in descending order.

a=[24,34,11,22,45,29,1]

print("Original list is",a)

a.sort(reverse=True)

print("Descending order of list is",a)

Assignment-7

1: Write a Python program that prints the numbers from 1 to 10 using a for loop.

for i in range(1,11):

  print(i)

2.Write a Python program that prints the sum of the first n natural numbers, where n is given by the user.

n=int(input("Enter the range"))

for i in range(1,n+1):

  print(i)

Write a Python program that prints the factorial of a given number n, where n is given by the user.

n=int(input("Enter the range"))

fact=1

for i in range(1,n+1):

  fact=fact\*i

print(fact)

4.Write a Python program that prints all the even numbers from 2 to 20 using a for loop.

for i in range(1,21):

  if i%2==0:

    print(i)

5.Write a Python program that prints the multiplication table of a given number n, where n is given by the user.

n=int(input("Enter the multiplication number "))

for i in range(1,9):

  a=1

  a=n\*i

  print(a)

6.Write a Python program that prints the Fibonacci sequence up to a given number n, where n is given by the user.

n=int(input("Enter the range"))

a,b=0,1

for i in range(n):

  print(a,end=' ')

  a,b=b,a+b

7.Write a Python program that prints the number of vowels in a given string s, where s is given by the user.

s=input("Enter a string : ")

vowels='aeiouAEIOU'

count=0

for i in s:

  if i in vowels:

    count=count+1

print(count)

8. Write a Python program that prints the reverse of a given string s, where s is given by the user.

s=input("Enter a string: ")

reverse=''

for i in s:

  reverse=i+reverse

print("Reversed string is :",reverse)

9.Write a Python program that prints whether a given string s, where s is given by the user, is a palindrome or not

10 Write a Python program that prints the number of words in a given sentence s, where s is given by the user.

s=input("Enter a sentence: ")

i=s.split()

print("Number of words :",len(i))