Programs on MODULE I

1. **Write a Python Program that accepts a input from user a temperature in Fahrenheit and displays the equivalent temperature in Celsius.**

```
#Program that accepts a input from user a temperature in Fahrenheit
#and displays the equivalent temperature in Celsius.
fah=float(input("Enter the temperature in fahrenheit\n"))
cel=(fah-32)*5/9
print("Fahrenhiet temperature is",fah)
print("Equivalent celsius temperature is",cel)
#end
```

OUTPUT:

```
Enter the temperature in fahrenheit
40
Fahrenhiet temperature is 40.0
Equivalent celsius temperature is 4.444444444444445
```

2. **Write a Python Program that accepts a number from user and prints it is even or odd**

```
#Program to check whether the number is odd or even
x=int(input("enter a number\n"))
if   x%2==0 :
   print("even number")
else :
   print("odd number")
#end
```

OUTPUT 1:

```
Enter a number
12
12 is a even number
```

OUTPUT 2:

```
 Enter a number
17
17 is a odd number
```

3. **Program to find largest of two numbers**

#Program to find largest of two numbers

```
n1=int(input("Enter first number\n"))
n2=int(input("Enter second number\n"))
if  n1> n2 :
      print(n1,"is big")
else:
      print(n2,"is big")
```

#end

OUTPUT 1:

Enter first number
12
Enter second number
23
23 is big

OUTPUT 2:

Enter first number
34
Enter second number
1
34 is big

4. Write a program to check whether the entered year is leap year or not

#Program to find whether the entered year is leap year or not

```
yr=int(input("Enter the year\n"))
if yr%400==0:
   print("Leap Year")
elif yr%100!=0 and yr%4==0:
   print("Leap Year")
else:
   print("Not a Leap Year")
```

#end

OUTPUT 1:

Enter the year
2000
Leap Year

OUTPUT 2:
Enter the year
2019
Not a Leap Year

5. Program to check whether a person is eligible to vote or not.

```
# Program to check whether a person is eligible to vote or not.
age=int(input("Enter age\n"))
if age>18 :
  print("you are eligible to vote")
else :
   print("you are not eligible to vote")
#end
```

OUTPUT:
Enter age
43
you are eligible to vote

6. Program to find largest of three numbers

```
# Program to find largest of three numbers
a=int(input("Enter first number\n"))
b=int(input("Enter second number\n"))
c=int(input("Enter third number\n"))
if a>b :
   if a>c :
      big=a
   else :
      big=c
else :
   if b>c :
      big=b
   else :
      big=c
print("Biggest number is ",big)
#end
```

OUTPUT:
Enter first number
12

Enter second number
23
Enter third number
54
Biggest number is 54

7. Program to swap two numbers

 # Program to swap two numbers
```
a=int(input("Enter first number\n"))
b=int(input("Enter second number\n"))
print("Before swapping \n a is",a,"\n b is ",b)
temp=a
a=b
b=temp
print("After swapping\n a is",a,"\nb is",b)
```
#end

OUTPUT:
Enter first number
12
Enter second number
23
Before swapping
a is 12
b is 23
After swapping
a is 23
b is 12

8. Program to check eligibility for marriage based on gender.

#Program to check eligibility for marriage based on gender.
```
gen=input("enter your gender")
age=int(input("enter your age"))
if gen=='M' :
   if age>21 :
      print("eligible for marriage")
   else :
      print("not eligible for marriage")
else :
```

```
    if age>18 :
        print("eligible for marriage")
    else :
        print("not eligible for marriage")
#end
```

OUTPUT 1:
Enter your gender
F
Enter your age
21
Eligible for marriage

OUTPUT 2:
Enter your gender
M
Enter your age
18
Not eligible for marriage

9. Program to assign different grades likeFCD,FC,SC.....based on marks using chained conditionals

```
#Program that accepts a marks from user and prints FCD,FC,...
marks=int(input("Enter marks\n"))
if marks>=80 :
    print("FCD")
elif marks >= 60:
    print("FC")
elif marks >= 35:
    print("SC")
else :
    print("Fail")
#end
```

OUTPUT:
Enter marks
45
SC

10 .Program to check whether a number is positive or negative or zero.

#Program that accepts a marks from user and prints FCD,FC,...

```
x=int(input("Enter a number\n"))
if x==0:
   print("Zero")
elif x>0:
   print("Positive")
else:
   print("Negative")
```

#end

OUTPUT:

Enter a number

-4

Negative

11. Program to simulate simple calculator.

#Program to simulate simple calculator

```
a=float(input("Enter the first operand\n"))
b=float(input("Enter the second operand\n"))
op=input("Enter the operator\n")
if op=='+':
   res=a+b
elif op=='-':
   res=a-b
elif op=='*':
   res=a*b
elif op=='/':
   res=a/b
else:
   print("Invalid Operator\n")
print("****** RESULT *******")
print(a,op,b,"=",res)
```

#end

OUTPUT 1:

Enter the first operand

12

Enter the second operand

23

Enter the operator

+
******** RESULT *********
12.0 + 23.0 = 35.0

OUTPUT 2:
Enter the first operand
12
Enter the second operand
23
Enter the operator
-
******** RESULT *********
12.0 - 23.0 = -11.0

12.Program to find the best of two tests average marks out of three test marks accepted from the user.

#Program to find the best of two test avg marks

```
t1=int(input("Enter first test marks\n"))
t2=int(input("Enter second test marks\n"))
t3=int(input("Enter third test marks\n"))
if t1<t2 and t1<t3 :
   avg=(t2+t3)/2
elif t2<t1 and t2<t3 :
   avg=(t1+t3)/2
else:
   avg=(t1+t2)/2
print("Average is",avg)
```

#end

OUTPUT:
Enter first test marks
12
Enter second test marks
23
Enter third test marks
24
Average is 23.5

13. Program to read two points in a co-ordinate and check in which quadrant it lies

 # Program to read two points in a co-ordinate and check in which quadrant it lies

```
x=int(input("Enter the value for x-coordinate\n"))
x=int(input("Enter the value for y-coordinate\n"))
if x>0 and y>0:
   print("Point lies in I Quadrant")
elif x>0 and y<0:
   print("Point lies in II Quadrant")
elif x<0 and y<0:
     print("Point lies in III Quadrant")
elif x>0 and y<0:
     print("Point lies in IV Quadrant")
else:
     print("Point is Origin")
#end
```

OUTPUT:

```
Enter the value for x-coordinate
2
Enter the value for y-coordinate
-4
Point lies in II Quadrant
```

14. Program to find the type of triangle

```
#Program to find the type of triangle
x=int(input("Enter the side1\n"))
y=int(input("Enter the side2\n"))
z=int(input("Enter the side3\n"))
if x==y and y==z and x==z:
   print("Equilateral Triangle")
elif x==y or y==z or x==z:
   print("Isosceless Triangle")
else:
   print("Scalene Triangle")
#end
```

OUTPUT:

```
Enter the side1
12
Enter the side2
23
Enter the side3
```

34
Scalene Triangle

15. Program to check whether the entered character is vowel or not

#Program to check whether the entered character is vowel or not

```
ch=input("Enter the character\n")
if ch=='a' or ch=='e' or ch=='i' or ch=='o' or ch=='u':
   print(ch, "is an vowel")
else:
   print(ch,"is an consonant")
```

#end

OUTPUT 1:
Enter the character
e
e is an vowel

OUTPUT 2:
Enter the character
g
g is an consonant

16.Write a python program to read n value from the user and display the number $F_n=2^{2n}+1$.

Python program to read n value from the user and display the number $F_n=2^{2n}+1$.

```
n=int(input("Enter a number\n"))
res=2**(2*n)+1
print("Result is ",res)
```

#end

OUTPUT:
Enter a number 4
Result is 257

17. Program to add two numbers using functions

 # Program to add two numbers using functions

```
def sum(a,b):
      return a+b
```

```
x=int(input("Enter a number:"))
y=int(input("Enter another number:"))
s=sum(x,y)
print("Sum of two numbers:",s)
#end
```

OUTPUT:
Enter a number:12
Enter another number:23
Sum of two numbers: 35

18. Write a function named solve that returns reminder and quotient of two numbers on division

```
#Write a function named solve that returns reminder and quotient of two numbers on division
def solve(a,b):
    quotient=a//b
    remainder=a%b
    return   (quotient,remainder)
#end of function
a=int(input("Enter the first number: "))
b=int(input("Enter the second number: "))
q,r=solve(a,b)
print("Quotient is:",q)
print("Remainder is:",r)
#end
```

OUTPUT:
Enter the first number: 23
Enter the second number: 12
Quotient is: 1
Remainder is: 11

19. Write a function that finds a square of a number

```
#Write a function that finds a square of a number
def square(a):
    return a*a
#end of function
x=int(input("Enter a number:"))
s=square(x)
print("Square is :",s)
#end
```

OUTPUT:
Enter a number:5
Square is : 25

20. Write a function that finds whether a number is odd or even

#Write a function that finds whether a number is odd or even

```
def   odd_even(n):
   if  n%2==0:
      print(n,"is even")
   else:
      print(n,"is odd")
#end of function
n=int(input("Enter a number\n"))
odd_even(n)
```

#end
OUTPUT:
Enter a number
27
27 is odd

21. Predict the output and justify the answer

1. 7.7//7
Ans :1.0
Since one of the operand for // is float ,the result will be truncated float value.

2. (200-70)*10/5
Ans:260.0
Since () has higher precedence 200-70 will be evaluated first ,then among * and / operators have same precedence hence they are evaluated from left to right that is 130*10=1300, and 1300/5=260.0

3. 5*12**
Ans: 5
Since ** operator has highest precedence compared to * operator, 1**2 is evaluated to 1 and ten 5*1 is evaluated to 5

4. not "False"
Ans: False

5. -10%3

Ans:2

✓ Wkt., In Python, the below formula is used by modulus operator, to compute remainder:a%b

Remainder= a-(⌊a/b⌋*b)

Here -10%3

(-10)-(⌊-10/3⌋*3)

(-10)-(⌊-3.33⌋*3)

(-10)-(-4*3)

(-10)-(-12)

-10+12

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Programs on MODULE I

1. Program to find sum of digits of a number

```
#Program to find sum of digits of a number
n=int(input("Enter a number\n"))
org,sum=n,0
while n>0:
   digit=n%10
   sum+=digit
   n=n//10
print("Sum of digits of",org,"is",sum)
#end
```

OUTPUT:

```
Enter a number
153
Sum of digits of 153 is 9
```

2. Program to find whether a number is a palindrome or not

```
#Program to find whether a number is a palindrome or not
n=int(input("Enter a number\n"))
org,rev=n,0
```

```
while n>0:
    digit=n%10
    rev=rev*10+digit
    n=n//10
print("Reverse is",rev)
if(org==rev):
    print(org,"is a palindrome")
else:
    print(org,"is not a palindrome")
#end
```

OUTPUT:

Enter a number

134

Reverse is 431

134 is not a palindrome

3. Program to find sum of odd numbers and even numbers in the series 1 to n

```
#Program to find sum of odd numbers and even numbers in the series 1 to n
n=int(input("Enter a number\n"))
o_sum,e_sum,i=0,0,1
while i<=n:
    if(i%2==0):
        e_sum+=i
    else:
        o_sum+=i
    i=i+1
print("Sum of odd numbers",o_sum)
print("Sum of even numbers",e_sum)
#end
```

OUTPUT:

Enter a number

5

Sum of odd numbers 9

Sum of even numbers 6

4. Program to find factorial of a number

#Program to find factorial of a number

```
n=int(input("Enter a number\n"))
fact,i=1,1
while i<=n:
    fact=fact*i
    i=i+1
print("Factorial of",n,"=",fact)
```

#end

OUTPUT:

Enter a number

5

Factorial of 5 = 120

5. Program to find GCD of two numbers.

#Program to find GCD of two numbers.

```
m=int(input("Enter first number\n"))
n=int(input("Enter second number\n"))
while n!=0:
    m,n=n,m%n
#end of while
gcd=m
print("GCD is",gcd)
```

#end

OUTPUT:

Enter first number

12

Enter second number

16

GCD is 4

6. Program to find whether a 3-digit number is armstrong number or not

#Program to find whether a 3-digit number is armstrong number or not.

```
num = int(input("Enter a number: "))
org,sum=num,0
while num > 0:
   digit = num % 10
   sum += digit ** 3
   num //= 10
#end of while
if org == sum:
   print(org,"is an Armstrong number")
else:
  print(org,"is not an Armstrong number")
```

#end

OUTPUT:

Enter a number: 153

153 is an Armstrong number

7 .Program to print svit 5 times

```
for i in range(5) :
   print("SVIT\n")
```

OUTPUT:

SVIT

SVIT

SVIT

SVIT

SVIT

8. Program to find sum of n natural numbers.

```
n=int(input("enter n value"))
sum=0
for i in range(n+1):
    sum=sum+i
print("sum is ",sum)
```

OUTPUT:

```
enter n value 4
sum is  10
```

9 . Program to find reverse of a number.

```
n=int(input("enter a number"))
rev=0
while n!=0:
    dig=n%10
    rev=rev*10+dig
    n=n//10
print("reverse of number is",rev)
```

OUTPUT:

```
enter a number 345
reverse of number is 543
```

10. Program to find whether a 3-digit number is armstrong number or not.

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

```
sum = 0
temp = num
while temp > 0:
        digit = temp % 10
        sum += digit ** 3
        temp //= 10
if num == sum:
        print(num,"is an Armstrong number")
else:
         print(num,"is not an Armstrong number")
```

OUTPUT:

Enter a number

153

153 is an Armstrong number #153 = 1*1*1 + 5*5*5 + 3*3*3

10. Program to find generate fibonacci series upto the given limit n.

```
nterms = int(input("How many terms? "))
n1 = 0
n2 = 1
count = 0
if nterms <= 0:
   print("Please enter a positive integer")
elif nterms == 1:
   print("Fibonacci sequence upto",nterms,":")
   print(n1)
else:
   print("Fibonacci sequence upto",nterms,":")
   while count < nterms:
      print(n1,end=' , ')
      nextno=n1 + n2
```

```
    # update values
    n1 = n2
    n2 = nextno
    count += 1
```

OUTPUT:

How many terms? 5

Fibonacci sequence upto 5 :

0 , 1 , 1 , 2 , 3

11. Program to find factorial of number

```
n=int(input("enter a number"))
fact=1
for i in range(1,n+1):
   fact=fact*i
print("factorial of number is ",fact)
```

OUTPUT:

enter a number 4

factorial of number is 24

11. Program that reads number from user and computes only the sum of even numbers and terminates after reading five numbers.

```
 sum=0
for i in range(5):
        n=int(input("enter number"))
         if n%2!=0:
                continue
        else:
                sum=sum+n
print("sum is ",sum)
```

OUTPUT:

enter number 4

enter number 5

enter number 6

enter number 7

enter number 8

sum is 18

12. Program to compute only even numbers sum within the given natural number using continue statement.

```
n=int(input("enter number"))
sum=0
for i in range(n+1):
    if n%2!=0:
        continue
   else:
        sum=sum+n
print("sum is ",sum)
```

OUTPUT:

Enter number

6

Sum is 12

13.Write a python program to check whether a number is prime or not

```
num = int(input("Enter a number: "))
for i in range(2,num):
     if (num % i) == 0:
        print(num,"is not a prime number")
        break
print(num,"is a prime number")
```