

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 like FCD, 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"))
y=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
```


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 then 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: $a\%b$

$$\text{Remainder} = a - (\lfloor a/b \rfloor * b)$$

Here

$$\begin{aligned} & -10\%3 \\ & (-10) - (\lfloor -10/3 \rfloor * 3) \\ & (-10) - (\lfloor -3.33 \rfloor * 3) \\ & (-10) - (-4 * 3) \\ & (-10) - (-12) \\ & -10 + 12 \\ & 2 \end{aligned}$$

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")
```

SVT