Conditional Statement:

1) Check the given number positive or negative using if statement.

```
num = float(input("Enter any number: "))
if num > 0 or num == 0:
   print("It is positive number")

else:
   print("It is a negative number")
```

O/P:

Enter any number: -5

It is a negative number

2) Find the biggest of 4 numbers using nested if.

```
a=int(input("Enter a value:"))
b=int(input("Enter b value:"))
c=int(input("Enter c value:"))
d=int(input("Enter d value:"))
if(a>b and a>c and a>d):
    print(a," is greater ")
 if (b > a and b > c and b > d):
        print(b, " is greater ")
    if (c > a and c> b and c > d):
        print(c, " is greater ")
else:
    print(d,"is greater")
```

O/P:

Enter value:4

Enter value:3

Enter value:6

Enter value:8

8 is greater

3) Get the input and write the program for leap year or not.

```
year=int(input("Enter any year: "))
if(year%4==0):
   print(year,"leap year")
else:
   print(year,"Not a leap year")
```

O/P:

Enter any year: 2000

2000 leap year

4) Swap two string variable without using the third variable.

```
a=(input("Enter a value: "))
b=(input("Enter b value: "))
print("Before Swaping:", a,b)
a,b=b,a
print("After Swaping:", a,b)
```

O/P:

Enter a value: sysway

Enter b value: tech

Before Swaping: sysway tech

After Swaping: tech sysway

5) **Write a program discount calculation on bill amount. The bill amount is Rs.5000 and give discount (500 to 100) using multiple if statement without else statement.**

```
If(amt>0):
    If amt<=5000:
        disc = amt*0.10
    elif amt<=15000:
        disc=amt*0.15
    elif amt<=25000:
        disc=0.20*amt
    elif:
        disc=0.5*amt
        print(“Discount Amount:”,disc)
        print("To be paid by Customer : ",amt-disc)
  print(“Invalid Discount)
```

6) **Write a program for assigning grade (A, B, C) based on marks obtained by a student. If the percentage is above 90, assign A grade. If the percentage is above 70, assign grade B. If the percentage is above 65, assign C grade.**

```
Percentage = float(input("Enter the percentage: "))
if(Percentage>90):
   print("A Grade")
elif(Percentage>70):
   print("B Grade")
elif(Percentage>65):
   print("C Grade")
```

O/P:

Enter the percentage: 78.8

B Grade

7) **Write a program for area of rectangle.**

```
len=int(input("Enter Length of rectangle:"))
bre=int(input("Enter Breadth of rectangle:"))
area=len*bre
print("Area of Rectangle:", area)
```

O/P:

Enter Length of rectangle:5

Enter Breadth of rectangle:4

Area of Rectangle: 20

8) **Write a program for area of equilateral triangle**.

```
import math
side=int(input("Enter Length of side:"))
area=(math.sqrt(3)*(side**2))/4
print("Area of equilateral triangle:",area)
```

O/P:

Enter Length of side:5

Area of equilateral triangle: 10.825317547305483

9) **Write a program for perimeter of triangle.**

```
a = int(input("Enter the Length of First Side: "))
b = int(input("Enter the Length of Second Side: "))
```

```
c = int(input("Enter the Length of Third Side: "))
perimeter = a+b+c
print("Perimeter = ", perimeter)
```

O/P:

```
Enter the Length of First Side: 3
Enter the Length of Second Side: 4
Enter the Length of Third Side: 5
Perimeter =  12
```

10. **Write a program to check whether a person is eligible for voting or not. Get the value from user.**

```
age=int(input("Enter your age:"))
if(age>=18):
   print("Eligible for voting")
else:
   print("Not eligible for voting")
```

O/P:

```
Enter your age:19
Eligible for voting
```

Looping:

1) **Write a program for prime number using while loop**.

```
x=2
ch=0
n=int(input("enter any values:"))
if(n<=1):
   ch=1
while x<=n/2:
   if n%x==0:
      ch=1
      break
   else:
      x+=1
if ch==0:
   print(n,"is a prime number")
else:
   print(n,"is NOT a prime number")
```

O/P:

enter any values:7

7 is a prime number

2) Write a palindrome program for string and number using while loop.
   String Palindrome:

```
x = "malayalam"
w = ""
for i in x:
    w = i + w
if (x == w):
  print("Yes")
else:
    print("No")
```

o/p: Yes

Number Palindrome

```
n=int(input("Enter number:"))
temp=n
rev=0
while(n>0):
    dig=n%10
    rev=rev*10+dig
    n=n//10
if(temp==rev):
    print("The number is a palindrome!")
else:
    print("The number isn't a palindrome!")
```

o/p:101 The Numbers is a palindrome

3) **Write a program for Amstrong number using while loop and check the number is Amstrong or not.**

```
num = int(input("Enter a number: "))
sum = 0
n1 = len(str(num))
temp = num
while temp > 0:
   digit = temp % 10
   sum += digit ** n1
   temp //= 10
if num == sum:
   print(num,"is an Armstrong number")
else:
   print(num,"is not an Armstrong number")
```

O/P:

Enter a number: 371

371 is an Armstrong number

4) Write a program for Evil-odious number using while loop.

```
n=int(input("enter a number:"))
count=0
while n!=0:
    if(n%2==1):
        count+=1
    n=n//2
if (count%2==0):
    print("Evil Number")
else:
    print("Odious Number")
```

O/P:

enter a number:7

Odious Number

5) Write a program to count the digit in a number using while loop.

```
num=int(input("Enter a number:"))
count=0
while(num>0):
    num=num//10
    count+=1
print("Total digit in the number is:",count)
```

O/P:

Enter a number:4567

Total digit in the number is: 4

6) Write a program for LCM using if condition and while loop.

```
a=int(input("Enter a first no:"))
b=int(input("Enter a second no:"))
if(a>b):
   min=a
else:
   min=b
while(1):
   if(min % a==0 and min % b==0):
      print("LCM is:",min)
      break
   min=min+1
```

O/P:

Enter a first no:5

Enter a second no:2

LCM is: 10

7) Calculate the sum of first ten numbers using while loop.

```
num = int(input("Enter a number: "))
if num < 0:
   print("Please enter a positive number")
else:
   sum = 0
   while (num > 0):
      sum += num
      num -= 1
   print("The result is", sum)
```

O/P:

Enter a number: 10

The result is 55

8) Write a Fibonacci series program using for loop.

```
a=0
b=1
n=int(input("Enter how many times generate series: "))
print("FIBONACCI SERIES")
print(" ",a," ",b,end="")
for i in range(n):
    c=a+b
    a=b
    b=c
    print(" ",c,end="
```

O/P:

Enter how many times generate series: 8

FIBONACCI SERIES

0 1 1 2 3 5 8 13 21 34

9) Write a program for prime number between 1 to n using for loop.

```
upto = int(input("Find prime numbers upto : "))
print("\nAll prime numbers upto", upto, "are : ")
for num in range(2, upto + 1):
    i = 2
    for i in range(2, num):
        if(num % i == 0):
            i = num
            break;
    if(i != num):
        print(num, end=" ")
```

O/P:

Find prime numbers upto : 10

All prime numbers upto 10 are :

3 5 7

10) Write a program for random number generator using for loop.

```
import random
num=int(input("Enter the number of random no. you want "))
max=int(input("Enter the maximum random no. you want "))
print(num,"random number between 0 to ",max)
for i in range(num):
    print(random.randint(0,max))
```

O/P:

Enter the number of random no. you want 5

Enter the maximum random no. you want 6

5 random number between 0 to 6

4

0

0

1

0

11) Write a program for first 5 multiplies of 6 in while loop using break.

```
i = 1
while i <= 10:
    print('6 * ',(i), '=',6 * i)
    if i >= 5:
```

```
        break
    i = i + 1
```

O/P:

```
6 *  1 = 6
6 *  2 = 12
6 *  3 = 18
6 *  4 = 24
6 *  5 = 30
```

12) Write a program to display only those numbers from a list that satisfy the following conditions.

- **The number must be divisible by 5.**
- **If the number is greater than 150, then skip it and move to the next number.**
- **If the number is greater than 500, then stop the loop.**

```
a = [12, 75, 150, 180, 145, 525, 50]
b = []
for i in a:
    if i > 150:
        if i > 500:
            break
        continue
    if i % 5 == 0:
        b.append(i)
```

```
print(b)
```

o/p: [75, 150, 145]

13) Write a program to print list in reverse order using a for loop.

```
mylist=["one","two","three"]
print("List: ",mylist)
mylist.reverse()
print("List(reverse):",mylist)
```

O/P:

List: ['one', 'two', 'three']

List(reverse): ['three', 'two', 'one']

14) Use a for loop to display elements for a given list present at odd index positions.

```
arr = [1, 2, 3, 4, 5]
print("Elements of given array present on odd position: ")
for i in range(0, len(arr), 2):
    print(arr[i])
```

O/P:

Elements of given array present on odd position:

1

3

5

15) Python program to convert the month name to a number of days.

```
   month_name = input("Input the name of Month: ")

if month_name == "February":
   print("No. of days: 28/29 days")
elif month_name in ("April", "June", "September", "November"):
   print("No. of days: 30 days")
elif month_name in ("January", "March", "May", "July", "August", "October",
"December"):
   print("No. of days: 31 day")
else:
   print("Wrong month name")
```

O/P:

Input the name of Month: March

No. of days: 31 day