1. **Write a Python program for demonstrating different ways of taking input from console and displaying the output**

```
#Program for demonstrating different ways of taking input from console and displaying the output
A=input()
print("A Value=",A)
B=input(""Enter B value")
print(B)
C=int(input("Enter C value"))
print("C=",C)
D=float(input("Enter D value"))
print("D=",D)
```

Input and Output:

```
12
A Value=12
Enter B value15
15
Enter C value15
C=15
Enter D value15.9
D=15.9
```

2. **Write a Python program for taking strings as input from console and displaying output**

```
A=input()
print("A Value=",A)
B=input(""enter B string  value")
print(B)
```

Input and Output:

```
12
A Value=12
Enter B string value15
15
```

3. **Write a python program for demonstrating the usage of command line arguments**

```
import sys
#to find number of arguments at command line
l=len(sys.argv)
print("number of arguments=",l)
#To print all the argumnets at command line
for i in range(l):
    print("argument[",i,"]=",argv[i])
```

Input and Output:

```
C:/Users/VIHAN/AppData/Local/Programs/Python/Python37-32/EXAMPLES/LAB/lab3.py avs ramu ranjith

number of arguments= 4
argument[ 0 ]= C:/Users/VIHAN/AppData/Local/Programs/Python/Python37-32/EXAMPLES/LAB/lab3.py
argument[ 1 ]= avs
argument[ 2 ]= ramu
argument[ 3 ]= ranjith
```

4. **Write a Python program for demonstrating different ways of using variables and identifiers.**

```
A=input()
print(“A Value=”,A)
B00M=input(“”Enter B00M value”)
print(B00M)
C_L=int(input(“Enter C_L value”))
print(“C_L=”,C_L)
D123=float(input(“Enter D123 value”))
print(“D123=”,D123)
```

Input and Output:

```
12
A Value=12
Enter B00M value15
15
```

```
Enter C_L value15
C_L=15
Enter D123  value15.9
D123=15.9
```

5. Write a Program to find the area of a triangle

```
A=int(input("Enter A Value")
B=int(input(""Enter B value"))
print("Area=",0.5*A*B)
```

Input and Output:

```
Enter A Value 12
Enter B value15
Area=90.0
```

6. Write a Program to input 5 subject marks and display the average value.

```
a =int(input("enter a value"))
b =int(input("enter b value"))
c =int(input("enter c value"))
d =int(input("enter d value"))

e =int(input("enter e value"))
print("average value=",(a+b+c+d+e)/5)
```

Input and Output:

```
enter a value 1
enter b value 2
enter c value 3
enter d value 4
enter e value 5
average value= 3.0
```

7. Write a Program for demonstrating the use of comparison operators

```
print("5<6 value=",5<6)
print("5<=6 value=",5<=6)
```

```
print(“5>6 value=”,5>6)
print(“5>=6 value=”,5>=6)
print(“5==6 value=”,5==6)
print(“5!=6 value=”,5!=6)
```

Input and Output:

```
5<6 value= True
5<=6 value= True
5>6 value= False
5>=6 value= False
5==6 value= False
5!=6 value= True
```

8. **Write a program that asks the user for a number of seconds and prints out how many minutes and seconds that is. For instance, 200 seconds is 3 minutes and 20 seconds.**
   [Hint: Use the // operator to get minutes and the % operator to get seconds.]

```
x=int(input("Enter time in seconds: "))
m=x//60
s=x%60

 print(x,"seconds is",m," minutes and",s,"seconds")
```

Input and Output:

```
Enter time in seconds: 234

234 seconds is 3  minutes and 54 seconds
```

9. **Write a python program for demonstrating the usage of unary, shift, logical, membership and identity operators.**

```
A=9
print(-A)
print(15<<2)
print(15>>1)
list=[1,2,3,8]
```

```
print(1 in list)
print(0 not in list)
x=8
y=8
print( x is y)
print( x is not y)
```

Input and Output:

```
-9
60
7
True
True
True
False
```

10. Write a program that asks the user to enter a length in centimeters. If the user enters a negative length, the program should tell the user that the entry is invalid. Otherwise, the program should convert the length to inches and print out the result. There are
2.54 centimeters in an inch.

```
l=int(input("Enter length in centimeters"))
if(l<0):
print("Invalid")
else:
print(l,"centimeters=",l/2.54,"inches")
```

Input and Output:

```
Enter length in centimeters200
200 centimeters= 78.74015748031496 inches
```

11. Write a python program for reading two strings from console. Find whether to strings are equal or not.

```
s=input("enter a first string")
t=input("enter a second string")
if(s==t):
    print("Equal")
else:
```

```
    print("not equal")
```

Input and Output:

enter a first stringanand

enter a second stringanand

Equal

12. Write a python program to find whether given number is positive or not.

```
n=int(input("enter a number"))
if(n>0):
    print(n,"is a positive number")
else:
    print(n,"is not a positive number")
```

Input and Output:
enter a number7
7 is a positive number

13. Ask the user to enter a temperature in Celsius. The program should print a message based on the temperature:

- **If the temperature is less than -273.15, print that the temperature is invalid because it is below absolute zero.**
- **If it is exactly -273.15, print that the temperature is absolute 0.**
- **If the temperature is between -273.15 and 0, print that the temperature is below freezing.**
- **If it is 0, print that the temperature is at the freezing point.**
- **If it is between 0 and 100, print that the temperature is in the normal range.**
- **If it is 100, print that the temperature is at the boiling point.**

If it is above 100, print that the temperature is above the boiling point.

```
t=float(input("enter a temperature in Celsius"))
if(t<-273.15):
        print("The temperature is invalid")
elif(t==-273.15):
        print("The temperature is absolute 0")
elif(t>-273.15 and t<0):
        print("The temperature is below freezing")
elif(t==0):
        print("The temperature is at freezing point")
elif(t>0 and t<100):
        print("The temperature is in the normal range")
elif(t==100):
        print("The temperature is at boiling point")
else:
        print("The temperature is at boiling point")
```

Input and Output:

enter a temperature in Celsius-5

The temperature is below freezing

14. The GCD (greatest common divisor) of two numbers is the largest number that both are divisible by. For instance, gcd (18, 42) is 6 because the largest number that both 18 and 42 are divisible by is 6. Write a program that asks the user for two numbers and computes their gcd.

Shown below is a way to compute the GCD, called Euclid's Algorithm.

- **First compute the remainder of dividing the larger number by the smaller number**
- **Next, replace the larger number with the smaller number and the smaller number with the remainder.**
- **Repeat this process until the smaller number is 0. The GCD is the last value of the larger number.**

```
x=int(input("enter a number"))
y=int(input("enter y value"))
m,n=x,y
while(n!=0):
```

```
    m,n=n,m%n
print("gcd of ",x,"and",y,"=",m)
```

Input and Output:

```
enter a number18
enter y value42
gcd of  18 and 42 = 6
```

15. Write a python program to display all prime numbers between o to n.

```
n=int(input("enter a number"))
for i in range(n+1):
    n=i
    c=0
    for i in range(1,n+1):
        if(n%i==0):
            c=c+1

    if(c==2):
        print(n,"is a prime number")
```

Input and Output:

```
enter a number50

2 is a prime number

3 is a prime number

5 is a prime number

7 is a prime number

11 is a prime number

13 is a prime number

17 is a prime number

19 is a prime number

23 is a prime number

29 is a prime number
```

31 is a prime number

37 is a prime number

41 is a prime number

43 is a prime number

47 is a prime number

16. Write a program to print all Armstrong numbers between given range using for loop.

```
n=int(input("enter ending value"))
for i in range(1,n+1):
    n=i
    l=len(str(n))
    t=n
    sum=0
    while(n!=0):
        d=n%10
        sum=sum+d**l
        n=n//10



    if(sum==t):
        print(t,"is a armstrong number")
```

Input and Output:

enter ending value1000

1 is a armstrong number

2 is a armstrong number

3 is a armstrong number

4 is a armstrong number

5 is a armstrong number

6 is a armstrong number

7 is a armstrong number

8 is a armstrong number

9 is a armstrong number

153 is a armstrong number

370 is a armstrong number

371 is a armstrong number

407 is a armstrong number