# PYTHON PROGRAMS

Q1.Write a program to print hello and welcome to python

Input:

```
print("hello")
print("welcome to python")
```

output:

```
hello
welcome to python
```

Q2.Write a program to print student address

Input:

```
print("Anwar")
print("Muthoor")
print("Thiruvalla")
print("689107")
```

output:

```
Anwar
Muthoor
Thiruvalla
689107
```

Q3.Write a program to print college address in multiple lines using a single print statement

Input:

```
print("GIT\n Gregorian Nagar\n Kanjirappara\n Kangazha\n Kottayam\n 686555")
```

output:

```
GIT
```

Gregorian Nagar

Kanjirappara P.O

Kangazha, Kottayam

686555

Q4.Write a program to bring business address in a single line using multiple print statements

Input:

```
print("YUSUF AND SONS", end=" ")

print("Muthoor", end=" ")

print("Thiruvalla", end=" ")

print("689107")
```

Output:

YUSUF AND SONS Muthoor Thiruvalla 689107

Q5.Write a program to print your name within “ ”

Input:

```
print("\"Anwar\"")
```

Output:

"Anwar"

Q6.Write a program to print your address in multiple lines by using only one output statement and within the “ ” of each line

Input:

```
print("\"Anwar\" \n \"Muthoor\" \n \"Thiruvalla\" \n \"689107\"")
```

Output:
"Anwar"

"Muthoor"

"Thiruvalla"

"689107"

Q7.Write a program to  perform addition of 2 numbers

Input:

a=5

b=7

c=a+b

print("The sum of two numbers =", c)

Output:

The sum of two numbers = 12

Q8.Write a program to find difference of two numbers

Input:

a=9

b=12

c=a-b

print("The difference of two numbers=", c)

Output:
The difference of two numbers = -3

Q9.Write a program to find product of 2 numbers

Input:
a=8

b=5

c=a*b

print("The product of two numbers =", c)

Output:
The product of two numbers = 40

Q10.Write a program to find division of two  numbers

Input:
a=86

b=430

c=a/b

print("The division of two numbers =", c)

output:
The division of two numbers = 0.2

Q11.Write a program to find modular division of two numbers

Input:
a=30

b=5

c=a%b

print("The modular division of two numbers =", c)

output:
The modular division of two numbers = 0

Q12.Write a program to perform area of a square

Input:
s=6

A=s*s

print("the area of square=", A)

output:
the area of square = 36

Q13.Write a program to perform area of rectangle

Input:
l=8

b=7

A=l*b

print("The area of rectangle=", A)

output:
the area of rectangle= 56

Q14.Write a program to perform area of triangle

Input:
b=9

h=6

A=0.5*b*h

print("The area of triangle =", A)

output:
The area of triangle = 27

Q15.Write a program to perform area of circle

Input:
r=7

A=3.14*r*r

print("The area of circle =", A)

output:
The area of circle = 153.86

Q16.Write a program to perform addition of user given numbers

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

b= int(input("Enter second number"))

c=a+b

print("the sum of user given two numbers=", c)

output:
Enter first number 45

Enter second number26

the sum of user given two numbers= 71

Q17.Write a program to perform subtraction of user given number

Input:

```
a= int(input("enter first number"))

b= int(input("enter second number"))

c=a-b

print("the difference of two numbers=", c)
```

output:

enter first number 49

enter second number 167

the difference of two numbers= -118

Q18.Write a program to perform multiplication of user given numbers

Input:

```
a= int(input("enter first number"))

b= int(input("enter second number"))

c= a*b

print("the product of two numbers =", c)
```

output:

enter first number 27

enter second number 25

the product of two numbers = 675

Q19.Write a program to perform division of user given numbers

Input:

```
a= int(input("enter first number"))

b= int(input("enter second number"))

c=a/b

print("the division of user given two numbers=", c)
```

output:

enter first number 35

enter second number 7

the division of user given two numbers= 5.0

Q20.Write a program to perform modular division of user given numbers

Input:

```
a= int(input("enter first number"))

b= int(input("enter second number"))

c=a%b

print("the modular division of user given two numbers=", c)
```

output:
enter first number 34

enter second number 68

the modular division of user given two numbers= 34

Q21.Write a program to find area of square with user given value

Input:

```
s= int(input("enter side measurement"))

A=s*s

print("area of square with user given measurement =", A)
```

output:
enter side measurement 3

area of square with user given measurement = 9

Q22.Write a program to find area of rectangle with user given value

Input:

```
l= int(input("enter length"))

b= int(input("enter breadth"))

A= l*b
```

print("the area of rectangle with user given sides=", A)

output:
enter length 7

enter breadth 12

the area of rectangle with user given sides= 84

Q23.Write a program to find area of triangle with user given value

Input:
b= int(input("enter base"))

h= int(input("enter height"))

A= 0.5*b*h

print("the area of triangle with user given sides =", A )

output:
enter base 10

enter height 12

the area of triangle with user given sides = 60.0

Q24.Write a program to find area of circle with user given value

Input:
r= float(input("enter radius"))

A= 3.14*r*r

print("the area of circle with user given radius=", A)

output:
enter radius 6

the area of circle with user given radius= 113.03999999999999

Q25.Write a program to read and bring an electricity bill

Input:
cid= int(input("Enter customer ID"))

cname= input("Enter customer name")

cadd= input("Enter customer address")

```
p= int(input("Enter previous reading"))
c= int(input("Enter current reading"))
x= c-p
cost= x*3
stax= (cost/100)*3
ctax= (cost/100)*10
tcost= stax+ctax+cost
print("Customer ID=", cid)
print("Customer Name", cname)
print("Customer Address", cadd)
print("previous reading", p)
print("current reading", c)
print("x", x)
print("cost", cost)
print("state tax", stax)
print("central tax", ctax)
print("total cost", tcost)
```

output:

```
Enter customer ID 270402
Enter customer name Jake Stone
Enter customer address 973 Sunshine Drive,Los Angeles,CA,90001
Enter previous reading 5600
Enter current reading 7800
Customer ID= 270402
Customer Name  Jake Stone
Customer Address  973 Sunshine Drive,Los Angeles,CA,90001
```

previous reading 5600

current reading 7800

x 2200

cost 6600

state tax 198.0

central tax 660.0

total cost 7458.0

Q26.A bus is travelling from stage 1 to 10. The cost of adult passengers is 10ruppees per stage. Cost of children is 5ruppees per stage. Then a state tax of 15% and central tax of 12% is also applicable on the ticket. Print the bus ticket for the given data.

Input:

```
name= input("Enter service name")

f= int(input("Enter from stage"))

to= int(input("Enter to stage"))

adults= int(input("Number of adults"))

child= int(input("Number of  children"))

stages= to-f

acost= 10*adults*stages

ccost= 5*child*stages

cost= acost + ccost

stax= (cost/100)*15

ctax= (cost/100)*12

tcost= cost+ctax+stax

print("Service name", sname)

print("From", f)

print("To", to)

print("Number of adults", adults)
```

```
print("Number of children", child)
print("stages", stages)
print("cost of adults", acost)
print("cost of children", ccost)
print("cost", cost)
print("state tax", stax)
print("central tax", ctax)
print("total cost", tcost)
```

output:

```
Enter service name KSRTC
Enter from stage 4
Enter to stage 10
Number of adults 12
Number of  children 24
Service name  KSRTC
From 4
To 10
Number of adults 12
Number of children 24
stages 6
cost of adults 720
cost of children 720
cost 1440
state tax 216.0
central tax 172.8
total cost 1828.8
```

Q27.Write the program to find the value of given expression for the given x and y values

Input:

```
import math as m

x= int(input("Enter value of x"))

y= int(input("Enter value of y"))

z= (m.pow(x,4)+m.log(y)/m.sqrt(x+y))

print(z)
```

output:

```
Enter value of x 3

Enter value of y 5

81.56902223089044
```

Q28.Write the program to find the value of given expression for the given x and y values

Input:

```
import math as m

x= int(input("Enter value of x"))

y= int(input("Enter value of y"))

z= (m.sqrt(x)+m.sqrt(m.pow(y,3)))/(m.exp(x)+m.log10(y))

print(z)
```

output:

```
Enter value of x 5

Enter value of y 7

0.13906317514563224
```

Q29.Write the program to find the value of given expression  for the given x and y values

Input:

```
import math as m

x= int(input("Enter value of x"))

y= int(input("Enter value of y"))
```

z= (m.sin(m.exp(x)+m.cos(m.pow(x,y))))/(m.tan(x)+m.log2(m.pow(x,y)))

print(z)

output:
Enter value of x 5

Enter value of y 8

-0.06581075889712452

Q30.Write a program to find the value of given expression for the given x and y values

Input:
import math as m

x= int(input("Enter value of x"))

y= int(input("Enter value of y"))

z= m.sqrt(m.exp(x)+m.log(m.pow(x,y))+m.log10(m.pow(y,x)))

print(z)

output:
Enter value of x 9

Enter value of y 7

90.14471910199103

Q31.Write a program to find the value of given expression for the given x and y values

Input:
import math as m

x= int(input("Enter value of x"))

y= int(input("Enter  value of y"))

z= m.sqrt((m.log10(m.exp(x))+m.log2(m.pow(x,y)))/(m.sin(pow(x,y))+m.tan(pow(y,x))))

print(z)

output:
Enter value of x 8

Enter  value of y 6

2.9966928795991463

Q32. Write a program to find the value of given expression for the given x and y values

Input:

```
a= int(input("enter value of a"))

b= int(input("enter value of b"))

c= int(input("enter value of c"))

d= b*b - 4*a*c

root1= (-b + d**0.5)/2*a

root2= (-b - d**0.5)/2*a

print("Two  real roots of a quadratic equation", root1, "and", root2)
```

output:

```
enter value of a 2

enter value of b 7

enter value of c 3

Two  real roots of a quadratic equation -2.0 and -12.0
```

Q33.Write a program to find a is less than b or not

Input:

```
a= int(input("Enter value of a"))

b= int(input("Enter value of b"))

print(a<b)
```

output:

```
Enter value of a 12

Enter value of b 46

True
```

Q34.You will be given 3 values a, b and c. Print true if a is the smallest value.

Input:

```
a= int(input("Enter value of a"))
```

```
b= int(input("Enter value of b"))

c= int(input("Enter value of c"))

print(a<b)and(a<c)
```

output:
Enter value of a 4

Enter value of b 8

Enter value of c 19

True

Q35.You will be given a positive integer. Print true if it is a power of 2 else print false.

Input:

```
a= int(input("Enter value of a"))

print(a&(a-1)==0)
```

output:
Enter value of a 46

False

Q36.Write a program to check given number is positive or not

Input:

```
n= int(input("Enter any number n"))

if n> 0:

   print("it is a positive number")

   print("the given number =", n)

   print("End of program")
```

output:
Enter any number n 57

it is a positive number

the given number = 57

End of program

Q37.Write a program to check given number is positive or negative

Input:

```
n= int(input("enter any number n"))
if n>0:
   print("it is a positive num")
   print("the given num=",n)
else:
   print("it is a negative num")
   print("the given num=",n)
   print("end of program")
```

output:

enter any number n -47

it is a negative num

the given num= -47

end of program

Q38.Write a program to check given number is even or not

Input:

```
n= int(input("enter value of n"))
if n%2==0:
   print("it is an even num")
   print("the given num=",n)
   print("end of program ")
```

output:

enter value of n 36

it is an even num

the given num= 36

end of program

Q39.Write a program to check given  number is even or odd

Input:

```
n= int(input("enter value of n"))

if n%2==0:

   print("it is an even num")

   print("the given num=",n)

else:

   print("it is an odd num")

   print("the given num=",n)

   print("end of program")
```

output:

enter value of n 35

it is an odd num

the given num= 35

end of program

Q40.Write a program to find minimum of 2 given numbers

Input:

```
a= int(input("enter value of a"))

b= int(input("enter value of b"))

if a<b:

   print("a is min")

   print("the value of a=", a)

else:

   print("b is min")

   print("the value of b=", b)

   print("end of program")
```

output:
enter value of a 25

enter value of b45

a is min

the value of a= 25

Q41.Write a program to find maximum of given two numbers

Input:

```
a= int(input("enter value of a"))
b= int(input("enter value of b"))
if a>b:
   print("a is maximum")
   print("the value of a=", a)
else:
   print("b is maximum")
   print("the value of b=", b)
   print("end of program")
```

output:
enter value of a 89

enter value of b 98

b is maximum

the value of b= 98

end of program

Q42.Write a program to check given number is positive even or not

Input:

```
n= int(input("enter value of n"))
if n>0 and n%2==0:
   print("it is a positive even number")
```

```
   print("the given number=", n)

   print("end of program")
```

output:
enter value of n 26

it is a positive even number

the given number= 26

end of program

Q43.Write a program to check given character is vowel or not a vowel

Input:

```
a= input("enter any character")

if a == ('a','e','i','o','u'):

   print("it is a vowel")

   print("the given character=", a)

else:

   print("it is not a vowel")

   print("the given character=", a)

   print("end of program")
```

output:
enter any character o

it is a vowel

the given character=  o

end of program

Q44.Write a program to demonstrate ATM operation using nested if else

Input:
pin= 1234

bal= 50000

cash= 45000

```
p= int(input("Enter your PIN no:"))
if p==pin:
   a= int(input("Enter amount"))
   if a%100==0:
      if a<=bal:
         if a <=cash:
            print("withdrawal successful")
            bal=bal-a
            print("updated bal=",bal)
         else:
            print("cash not available")
      else:
         print("insufficient funds")
   else:
      print("invalid amount")
else:
   print("invalid PIN no:")
```

output:

Enter your PIN no: 1234

Enter amount 35000

withdrawal successful

updated bal= 15000

Q45.Write a program to display grade of a student

Input:

```
avg= float(input("enter Avg:"))
if avg>90:
```

```
   print("Grade-A+")
elif avg>80:
   print("Grade-A")
elif avg>70:
   print("Grade-B+")
elif avg>60:
   print("Grade-B")
elif avg>50:
   print("Grade-C")
elif avg>40:
   print("Grade-D")
elif avg>35:
   print("Grade-E")
else:
   print("Grade-F")
```

output:

enter Avg: 77.8

Grade-B

Q46.Write  a program to print day as per user give input

Input:

```
n= int(input("enter any number"))
match n:
   case 1:
      print("Monday")
   case 2:
      print("Tuesday")
```

```
  case 3:
    print("Wednesday")
  case 4:
    print("Thursday")
  case 5:
    print("Friday")
  case 6:
    print("Saturday")
  case 7:
    print("Sunday")
  case _:
    print("invalid day")
```

output:
enter any number 7

Sunday

Q47.Write a program to perform arithmetic operations based on user selection

Input:

```
print("choose any one of the following")
print("1.add\n2.sub\n3.multi\n4.div")
opt= int(input("enter your option"))
match opt:
  case 1:
    a=int(input("enter first number"))
    b=int(input("enter second number"))
    c=a+b
    print("the add of 2 numbers=", c)
  case 2:
```

```
        a=int(input("enter first number"))
        b=int(input("enter second number"))
        c=a-b
        print("the sub of 2 numbers=", c)
    case 3:
        a=int(input("enter first number"))
        b=int(input("enter second number"))
        c=a*b
        print("the multi of 2 numbers=", c)
    case 4:
        a=int(input("enter first number"))
        b=int(input("enter second number"))
        c=a/b
        print("the div of 2 numbers=", c)
    case _:
        print("invalid option")
```

output:

```
choose any one of the following
1.add
2.sub
3.multi
4.div
enter your option 4
enter first number 68
enter second number 5
the div of 2 numbers= 13.6
```

Q48.Write a program to find area of square, rectangle, triangle and circle as per user selection

Input:

```
print("choose any of the following")
print("1.square\n2.rectangle\n3.triangle\n4.circle")
opt=int(input("enter your option"))
match opt:
  case 1:
    a=int(input("enter value of side"))
    c=a*a
    print("the area of square=",c)
  case 2:
    l=int(input("enter value of length"))
    b=int(input("enter value of breadth"))
    c=l*b
    print("the area of rectangle=",c)
  case 3:
    b=int(input("enter value of base"))
    h=int(input("enter value of height"))
    c=0.5*b*h
    print("the area of triangle=",c)
  case 4:
    r=int(input("enter value of radius"))
    c=3.14*r*r
    print("the area of circle=",c)
  case _:
    print("invalid option")
```

output:

choose any of the following

1.square

2.rectangle

3.triangle

4.circle

enter your option 3

enter value of base 78

enter value of height 97

the area of triangle= 3783.0

Q49.Write a program to perform banking operations based on user selection

Input:

```
pin=1234
cash=45000
bal=65000
print("choose any of the following")
print("1.Deposit\n2.Withdrawal\n3.Balance Enquiry\n4.PIN change")
opt=int(input("Enter your option"))
match opt:
  case 1:
    p=int(input("Enter PIN"))
    if p==pin:
      a=int(input("Enter Amount"))
      if a%100==0:
        bal=bal+a
        print("updated balance=",bal)
```

```
        else:
            print("invalid amount")
    else:
        print("PIN is incorrect")
case 2:
    p=int(input("enter your pin"))
    if p==pin:
        a=int(input("enter amount"))
        if a%100==0:
            if a<=bal:
                if a<=cash:
                    bal=bal-a
                    print("updated bal=",bal)
                else:
                    print("insufficient balance")
            else:
                print("invalid amount")
        else:
            print("incorrect PIN")
case 3:
    p=int(input("enter your PIN"))
    if p==pin:
        print("balance=",bal)
    else:
        print("incorrect PIN")
case 4:
```

```
        p=int(input("enter your current pin"))
        if p==pin:
            p1=int(input("enter new pin"))
            p2=int(input("confirm new pin"))
            if p1==p2:
                pin=p1
                print("PIN changed successfully")
            else:
                print("pin does not match")
        else:
            print("incorrect PIN")
    case _:
        print("Invalid Option")
```

output:

choose any of the following

1.Deposit

2.Withdrawal

3.Balance Enquiry

4.PIN change

Enter your option 2

enter your pin 1234

enter amount 36000

updated bal= 29000

Q50.Write a program to print numbers from 1 to n using while loop

Input:

```
n=int(input("enter any number"))
i=1
```

```
while i<=n:
   print(i)
   i=i+1
```

output:

enter any number 12

1

2

3

4

5

6

7

8

9

10

11

12

Q51.Write a program to print numbers from 1 to n using for loop

Input:

```
n=int(input("enter any number"))
for i in range(1,n+1):
   print(i)
```

output:

enter any number 11

1

2

3

4

5

6

7

8

9

10

11

Q52.Write a program to print your name for n times

Input:

```
n=int(input("enter any number"))
for i in range (1,n+1):
   print("Anwar")
```

output:

enter any number 7

Anwar

Anwar

Anwar

Anwar

Anwar

Anwar

Anwar

Q53.Write a program to print numbers in user given range

Input:

```
s=int(input("enter starting value"))
```

```
e=int(input("enter ending value"))
for i in range(s,e+1):
   print(i)
```

output:

enter starting value 5

enter ending value 12

5

6

7

8

9

10

11

12

Q54.Write a program to print even numbers in user given range

Input:

```
s=int(input("enter starting value"))
e=int(input("enter ending value"))
for i in range(s,e+1):
   if i%2==0:
      print(i)
```

output:

enter starting value 8

enter ending value 19

8

10

12

14

16

18

Q55.Write a program to find sum of numbers in user given range

Input:

```
s=int(input("enter starting value"))
e=int(input("enter ending value"))
sum=0
while s<=e:
   sum=sum+s
   s=s+1
   print(sum)
```

output:

enter starting value 6

enter ending value 12

6

13

21

30

40

51

63

Q56.Write a program to find sum of even numbers in user given range

Input:

```
s=int(input("enter starting value of range"))
e=int(input("enter ending value of range"))
```

```
sum=0
for i in range (s,e+1):
   if s%2==0:
      sum=sum+i
      print(sum)
```

output:

```
enter starting value of range 8
enter ending value of range 19
8
17
27
38
50
63
77
92
108
125
143
162
```

Q57.Write a program to count number of digits in a given number

Input:

```
n=int(input("enter any number"))
d=0
while n>0:
   d=d+1
```

```
    n=n//10
    print(d)
```

output:

enter any number 100

1

2

3

Q58.Write a program to find sum of digits a given number

Input:

```
n=int(input("enter any number"))
sum=0
while n>0:
    rem=n%10
    sum=sum+rem
    n=n//10
    print("the sum of digits=",sum)
```

output:

enter any number 270402

the sum of digits= 2

the sum of digits= 2

the sum of digits= 6

the sum of digits= 6

the sum of digits= 13

the sum of digits= 15

Q59.Write a program to find reverse of given number

Input:

```
n=int(input("enter any number"))
```

```
rev=0
while n>0:
   rem=n%10
   rev=rev*10+rem
   n=n//10
   print("the reverse of given number=",rev)
```

output:

```
enter any number 270402
the reverse of given number= 2
the reverse of given number= 20
the reverse of given number= 204
the reverse of given number= 2040
the reverse of given number= 20407
the reverse of given number= 204072
```

Q60.Write a program to check if given number is palindrome number or not

Input:

```
n=int(input("enter any number"))
a=n
rev=0
while n>0:
   rem=n%10
   rev=rev*10+rem
   n=n//10
   if rev==a:
      print("given number is palindrome number")
   else:
```

```
    print("given number is not a palindrome number")
```

output:

enter any number 7227

given number is not a palindrome number

given number is not a palindrome number

given number is not a palindrome number

given number is palindrome number

Q61.Write a program to check given number is prime or not(logic1: using n divisions)

Input:

```
n=int(input("enter any number"))
c=0
for i in range(1,n+1):
  if n%i==0:
    c=c+1
    if c==2:
      print("given number is a prime number")
    else:
      print("given number is not a prime number")
```

output:

enter any number 89

given number is not a prime number

given number is a prime number

Q62.Write a program to check if given number is prime or not (logic 2: using n/2 divisions)

Input:

```
n=int(input("enter any number"))
c=0
for i in range(2,n//2+1):
```

```
    if n%i==0:
        c=c+1
if c==0:
    print("given number is a prime number")
else:
    print("given number is not a prime number")
```

output:
enter any number 79

given number is a prime number

Q63.Write a program to check if given number is prime or not(logic 3: using sqrt(n) divisions)

Input:

```
import math as m
n=int(input("enter any number"))
c=0
x=int(m.sqrt(n))
for i in range(2,x+1):
    if n%i==0:
        c=c+1
if c==0:
    print("given number is a prime number")
else:
    print("given number is not a prime number")
```

output:
enter any number 67

given number is a prime number