**CYCLE-1**

1. **Write a program to demonstrate basic data type in python.**

**CODE**

a=5

print("the value of",a,"is of the type",type(a))

b="hello"

print("the value of",b,"is of the type",type(b))

c=6.14

print("the value of",c,"is of the type",type(c))

d=2j

print("the value of",d,"is of the type",type(d))

e={"ads","web","python"}

print("the value of",e,"is of the type",type(e))

f=("ads","web","python")

print("the value of",f,"is of the type",type(f))

g=["ads","web","python"]

print("the value of",g,"is of the type",type(g))

h=range(5)

print("the value of",h,"is of the type",type(h))

i=True

print("the value of",i,"is of the type",type(i))

**OUTPUT**

the value of 5 is of the type <class 'int'>

the value of hello is of the type <class 'str'>

the value of 6.14 is of the type <class 'float'>

the value of 2j is of the type <class 'complex'>

the value of {'ads', 'web', 'python'} is of the type <class 'set'>

the value of ('ads', 'web', 'python') is of the type <class 'tuple'>

the value of ['ads', 'web', 'python'] is of the type <class 'list'>

the value of range(0, 5) is of the type <class 'range'>

the value of True is of the type <class 'bool'>

1. **“Hello , World !” program.**

**CODE**

print("Hello, World !")

**OUTPUT**

Hello, World !

1. **Program to print an integer(entered by the user).**

**CODE**

x=int(input("enter a integer value :"))

print(x)

**OUTPUT**

enter a integer value :8

8

1. **Program to add two integers.**

**CODE**

x=int(input("enter the value of first integer :"))

y=int(input("enter the value of second integer :"))

z=x+y

print("sum :",z)

**OUTPUT**

enter the value of first integer :4

enter the value of second integer :3

sum : 7

1. **Program to multiply two floating point numbers.**

**CODE**

x=float(input("enter the first float value :"))

y=float(input("enter the second float value :"))

z=x\*y

print("product :",z)

**OUTPUT**

enter the first float value :1.0

enter the second float value :3.0

product : 3.0

1. **Program to compute quotient and remainder.**

**CODE**

a=int(input("enter the first value :"))

b=int(input("enter the second value :"))

q=a//b

print("quotient :",q)

r=a%b

print("remainder :",r)

**OUTPUT**

enter the first value :11

enter the second value :2

quotient : 5

remainder : 1

1. **Program to swap two numbers.**

**CODE**

x=float(input("enter the first number :"))

y=float(input("enter the second number :"))

print("value of the first number before swapping :",x)

print("value of the second number before swapping :",y)

z=x

x=y

y=z

print("value of the first number after swapping :",x)

print("value of the second number after swapping :",y)

**OUTPUT**

enter the first number :1.0

enter the second number :2.0

value of the first number before swapping : 1.0

value of the second number before swapping : 2.0

value of the first number after swapping : 2.0

value of the second number after swapping : 1.0

1. **Program to check whether a number is even or odd.**

**CODE**

x=int(input("enter any number :"))

y = x%2

if y==0:

  print(x,"is an even number.")

else:

    print(x,"is an odd number.")

**OUTPUT**

enter any number :8

8 is an even number.

1. **Program to check whether a character is vowel or consonant.**

**CODE**

ch=input("enter any character :")

if (ch=='A'or ch=='E' or ch=='I' or ch=='O' or ch=='U'or ch=='a' or ch=='e' or ch=='i' or ch=='o' or ch=='u'):

  print(ch,"is a vowel.")

else:

  print(ch,"is a consonant.")

**OUTPUT**

enter any character :b

b is a consonant.

1. **Program to find the largest among three numbers.**

**CODE**

a=float(input("enter the first number :"))

b=float(input("enter the second number :"))

c=float(input("enter the third number :"))

if (a>b) and (a>c):

  print(a,"is largest number.")

elif (b>a) and (b>c):

  print(b,"is the largest number.")

else:

  print(c,"is the largest number.")

**OUTPUT**

enter the first number :3.0

enter the second number :6.0

enter the third number :10.0

10.0 is the largest number.

1. **Program to check leap year.**

**CODE**

yr=int(input("enter a year :"))

if ((yr%400==0) or ((yr%4==0) and (yr%100!=0))):

 print(yr,"is a leap year.")

else:

  print(yr,"is not a leap year.")

**OUTPUT**

enter a year :2020

2020 is a leap year.

1. **Program to check whether a number is positive or negative.**

**CODE**

x=int(input("enter any number:"))

if x>0:

  print(x,"is a positive number.")

else:

  print(x,"is a negative number.")

**OUTPUT**

enter any number:-6

-6 is a negative number.

1. **Program to calculate the sum of natural numbers.**

**CODE**

n=int(input("enter  any number :"))

if n<0:

  print("enter a positive number.")

else:

  sum=0

  while (n>0):

    sum+=n

    n-=1

print("sum of natural numbers is",sum)

**OUTPUT**

enter any number :5

sum of natural numbers is 15

1. **Program to find the factorial of a number.**

**CODE**

n=int(input("enter any number :"))

fact=1

for i in range(1,n+1):

  fact=fact\*i

print("factorial of",n,"is",fact)

**OUTPUT**

enter any number :4

factorial of 4 is 24

1. **Program to generate multiplication tables.**

**CODE**

x=int(input("show the multiplication table of ?"))

for i in range(1,11):

  print(x,'x',i,'=',x\*i)

**OUTPUT**

show the multiplication table of ?2

2 x 1 = 2

2 x 2 = 4

2 x 3 = 6

2 x 4 = 8

2 x 5 = 10

2 x 6 = 12

2 x 7 = 14

2 x 8 = 16

2 x 9 = 18

2 x 10 = 20

1. **Program to display fibonacci sequence.**

**CODE**

n=int(input("enter any number :"))

x,y =0,1

count=0

if n<=0:

  print("enter a positive number.")

elif n==1:

  print("fibonacci sequence upto",n,":")

  print(x)

else:

  print("fibonacci sequence :")

  while count<n:

    print(x)

    z=x+y

    x=y

    y=z

    count+=1

**OUTPUT**

enter any number :2

fibonacci sequence :

0

1

1. **Program to find the LCM of two numbers.**

**CODE**

def find\_lcm(x, y):

   if x > y:

       greater = x

   else:

       greater = y

   while(True):

       if((greater % x == 0) and (greater % y == 0)):

           lcm = greater

           break

       greater += 1

   return lcm

a=int(input("enter the value of first number :"))

b=int(input("enter the value of second number :"))

print("the L.C.M. is", find\_lcm(a,b))

**OUTPUT**

enter the value of first number :54

enter the value of second number :24

the L.C.M. is 216

1. **Program to count number of digits in an integer.**

**CODE**

n=int(input("enter any number :"))

count=0

while (n>0):

    count=count+1

    n=n//10

print("the number of digits in the given number is/are :",count)

**OUTPUT**

enter any number :100000

the number of digits in the given number is/are : 6

1. **Program to reverse a number.**

**CODE**

x=int(input("enter any number to be reversed :"))

rev=0

while x>0:

  rev=(rev\*10)+(x%10)

  x=x//10

print("reverse is",rev)

**OUTPUT**

enter any number to be reversed :17

reverse is 71

1. **Program to calculate the power of a number.**

**CODE**

n=int(input("enter any positive number :"))

e=int(input("enter the value of exponent :"))

p=1

for i in range(1,e+1):

  p=p\*n

print("the power of",n,"^",e,"is",p)

**OUTPUT**

enter any positive number :2

enter the value of exponent :3

the power of 2 ^ 3 is 8

1. **Program to check whether a number is palindrome.**

**CODE**

n=int(input("enter any number :"))

rev=0

temp=n

while (temp > 0):

    r=temp%10

    rev=(rev\*10)+r

    temp=temp//10

print("reverse of this given number is",rev)

if (n==rev):

    print(n,"is a palindrome number")

else:

    print(n,"is not a palindrome number")

**OUTPUT**

enter any number :121

reverse of this given number is 121

121 is a palindrome number