1.To accept an object mass in kilogram and velocity in meter per second and display its momentum.Momentum is calculated as e=m*v where m is the mass of the object and v is its velocity

```
In [6]:  mass=float(input("enter mass in kilogram:"))
         velocity=float(input("Enter velocity in meters per second:"))
         momentum=mass*velocity
         print(f"the momentum of the object is:{momentum}")
```

```
the momentum of the object is:50.0
```

2.Write a python program for following condition.If n is single digit print square of it.If n is two digit print square root of it.If n is three digit print cube root of it.

```
In [15]:  import math
          n=int(input("Enter a number :"))
          if 0<=n<10:
              print(f"square of {n}:{n**2}")
          elif 10<=n<100:
              print(f"Square root of {n}:{math.sqrt(n):.2f}")
          elif  100<=n<1000:
              print(f"Cube root of {n}:{n**(1/3):.2f}")
          else:
              print("Please enter a number between 0 and 999.")
```

```
Cube root of 125:5.00
```

3.Read the birth date and salary in rupees of employees.Perform data trnasformation for birthdate to age and also salary which is in rupees to salary n dollars using functions.

```
In [10]:  from datetime import datetime
          def calculate_age(birthdate):
              today = datetime.now()
              birthdate = datetime.strptime(birthdate,"%Y-%m-%d")
```

```
    return today.year - birthdate.year - ((today.month,today.day) < (birthdate.mont
def salary_in_dollars(salary_in_rupees,conversion_rate=82.5):
    return salary_in_rupees/conversion_rate
birthdate=input("Enter the birthdate (YYYY-MM-DD):")
salary=float(input("Enter salary in rupees:"))

age = calculate_age(birthdate)
salary_usd=salary_in_dollars(salary)

print(f"age:{age}years")
print(f"salary in USD:${salary_usd:.2f}")
```

```
age:18years
salary in USD:$606.06
```

4.Print the reverse number of given number

```
In [12]:  number = int(input("Enter the number:"))
          reverse_number=int(str(number)[::-1])
          print(f"Reversed number:{reverse_number}")
```

```
Reversed number:1291
```

5.Print multiplication table of number n

```
In [16]:  n=int(input("Enter a number:"))
          for i in range(1,11):
              print(f"{n} x {i}={n*i}")
```

```
7 x 1=7
7 x 2=14
7 x 3=21
7 x 4=28
7 x 5=35
7 x 6=42
7 x 7=49
7 x 8=56
7 x 9=63
7 x 10=70
```

6.To accept students five courses marks and compute hihs/her result.Student is passing if he/she scores marks equal to and above 40 in each course . If student scorers aggrregate greater than 75 percentage,then the grade is distinction.Of

aggregate is greater than or equal to 60 and less than 75 then the grade is first division.If aggregate is greater than or eqaul to 50 and less than 60,then the grade is second division.if aggregate percentage is greater than or equal to 40 and less than 50,then the grade is third division.

```python
In [44]: def compute_grade(marks):
             if any(mark < 40 for mark in marks):
                 return "Fail"

             aggregate = sum(marks) / len(marks)

             if aggregate > 75:
                 return "Distinction"
             elif 60 <= aggregate <= 75:
                 return "First Division"
             elif 50 <= aggregate < 60:
                 return "Second Division"
             elif 40 <= aggregate < 50:
                 return "Third Division"
             else:
                 return "Fail"


         marks = []
         for i in range(5):
             mark = int(input(f"Enter marks for subject {i+1}: "))
             marks.append(mark)


         grade = compute_grade(marks)

         print("\nStudent's Result:")
         print(f"Marks: {marks}")
         print(f"Aggregate Percentage: {sum(marks)/5:.2f}%")
         print(f"Grade: {grade}")
```

```
Student's Result:
Marks: [68, 90, 78, 98, 78]
Aggregate Percentage: 82.40%
Grade: Distinction
```

7.Write the fibonacci sequence using recursive function in python

In [42]:
```python
def fibonacci(n):
    if n <= 1:
        return n
    return fibonacci(n-1) + fibonacci(n-2)
terms = int(input("Enter the number of terms:"))
for i in range(terms):
    print(fibonacci(i),end=" ")
```

0 1 1 2 3 5 8 13

In [ ]: