1. **Write a Python program to perform the following operations:**
   1. Add, subtract, multiply, and divide two numbers (input by the user).
   2. Use the modulus operator to find the remainder of their division.
   3. Use the exponentiation operator to raise the first number to the power of the second number.
   4. Perform floor division on the two numbers.

```
# user = int(input("Enter a number:"))
user1 = int(input("Enter a number:"))
print()
add = user + user1
sub = user - user1
mul = user * user1user
div = user / user1
mod = user % user1
expo = user ** user1
fd = user // user1

print(f"Addition:{add}\nSubstraction:{sub}\nMultiplication:{mul}\nDivision:{div}\nModulus:{
mod}\nExponent:{expo}\nFloor Division:{fd}")
```

2) Write a Python program that asks for two numbers and checks:
1. If the first number is greater than the second.
2. If the first number is equal to the second.
3. If the first number is less than or equal to the second. Print the results

```
f_num = int(input("Enter a number:"))
s_num = int(input("Enter a number:"))

if f_num > s_num:
   print("First number is greater")
else:
   print("Second number is greater")

if f_num == s_num:
   print("first number equal to second number")
else:
   print("Both are not equal")

if f_num <= s_num:
   print("First number less than equal to second number")
else:
   print("First number is not equal to second number")
```

3) Write a Python program that:
1. Takes three boolean values (True or False) as input
2. Uses and, or, and not operators to return the result of combining them.

```
first = bool(int(input("Enter a number:")))
sec = bool(int(input("Enter a number:")))
print()

r1 = first and sec

r2 = first or sec

r3 =  not first
r4 = not sec

print("And:",r1,"OR:",r2,"Not:",r3,"Not:",r4)
```

4) 1. Take a string input from the user.
2. Display the following: o The length of the string.
o The first and last character.

o The string in reverse order.

o The string in uppercase and lowercase

```
user = str(input("Enter a txt:"))
print(len(user))
first_char = user[0]
second_char = user[-1]
print("First charcter:",first_char)
print("Last charcter:",second_char)
print("Reverse:",user[::-1])
upper_str = user.upper()
lower_str = user.lower()
print("Uppercase and lowercase:",upper_str,"&",lower_str)
```

5) **Write a program that asks for the user's name and age, and displays the message in this format**:

```
name = str(input("Enter a name:"))
age = int(input("Enter a age:"))
print(f"Hello {name} You are {age} Years old")
```

6) Write a Python program that:
1. Asks for a sentence input from the user.
2. Asks for a word to search in the sentence.
3. Outputs whether the word exists in the sentence and, if it does, at which position (index)

```
sen = input("Enter a Sentence:")
search = input("Enter a word to search:")
if search in sen:
   position = sen.index(search)
   print(search,position )
else:
   print(search)
```

7) Write a Python program that:
1. Creates a list of 5 numbers (input from the user).
2. Displays the sum of all the numbers in the list.
3. Finds the largest and smallest number in the list.

```
li=list(map(int(input().split())))


total_sum = sum(li)
print(total_sum)


largest = max(li)
smallest = min(li)

print("Largest Number:",largest)
print("Smallest Number:",smallest)
```

8) 1. Create a list of 5 of your favorite fruits.
2. Perform the following:
o Add one more fruit to the list.
o Remove the second fruit from the list.
o Print the updated list.

```
fruits = ["Banana","Appele","Kiwi","Avocado","Grapes"]
fruits.insert(5,"Mango")
print(fruits)
```

9) Write a Python program that:
1. Asks the user to input a list of 5 numbers.
2. Sorts the list in ascending order and displays it.
3. Sorts the list in descending order and displays it.

```
# num = list(map(int(input().split())))
num = [22,44,66,55,33]
descending = sorted(num,reverse=True)
ascending = sorted(num,reverse=False)

print("Ascending_Order:",ascending)
print("Descending_Order:",descending)
```

10) Given the list numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10], perform the following:
1. Print the first 5 elements.
2. Print the last 5 elements.
3. Print the elements from index 2 to index 7.

```
num = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
print("First 5 elements:",num[:5])
print("last 5 elements:",num[-5::])
print("Index 2 to index 7:",num[2:8])
```

11) Write a Python program that:
1. Takes input of 3 students' names and their respective scores in 3 subjects.
2. Stores them in a nested list.
3. Prints each student's name and their average score

```
student_names = ["Uditha","swaroop","vignesh"]
student_marks = [85,89,91]
add = student_names+student_marks
print(add)
```