Review

1.By using Flowchart, write algorithm to compute the value of this equation.

$y = \frac{x+3}{x}$ $(x \neq 0)$

Then write the code.

```
x=int(input('enter x:'))
while x==0:
    x = int(input('enter x:'))
y=(x+3)/x
print(f'y={y}')
```

2.By using Flowchart, write algorithm to compute the value of this equation.

$y = \frac{x}{x-4}$ $(x \neq 4)$

Then write the code.

```
x=int(input('enter x:'))
while x==4:
    x = int(input('enter x:'))
y=x/(x-4)
print(f'y={y}')
```

3. By using Flowchart, write algorithm to ask user to enter age and sex (M or F) then using the following rules to print the place of service.

- If employee is female, she will work only in Mukalla.

- If employee is male and his age between 20 – 40, he may work in anywhere

```
age=int(input('Enter your age:'))
sex=input('Enter your gender(F/M):')
if sex=='F':
    print('You'll work only in Mukalla')
elif sex=='M' and 20<age<40:
    print('You may work in anywhere')
```

4. A student will not be allowed to sit in exam if his/her attendant is less than 75% Take the following input from user :
- Number of classes held.
- Number of classes attendant.
Then print: percentage of classes attendant.
Is student allowed to sit in exam or not?
- Percentage = (No of classes attendant /No of classes held) * 100

```
Class_h=int(input('Enter number of class held:'))
Class_at=int(input('Enter number of class attendant:'))
per=(class_at/class_h)*100
if per>=75:
    print(f' percentage:{per}\nThe student is allowed to sit in exam')
else:
    print(f' percentage:{per}\nThe student is not allowed to sit in exam')
```

5. A company decided to give bonus of 10% to employee if her/his years of service is more than 5 year. Ask user for their salary and year of service and print bonus.

```
salary=int(input('Enter your salary:'))
years=int(input('Enter years of service:'))
if years>5:
    bouns=salary*(10/100)
    fsalary=salary-bouns
    print(f'Your salary is {fsalary}')
else:
    print(f'Your salary is {salary}')
```

6. By using Flowchart, write algorithm to swap three numbers? Then write the code.
Note:
Print (f"Num1 = {Num1}")
Print (f"Num2 = {Num2}")
Print (f"Num3 = {Num3}")

```
num1=int(input('Enter num1:'))
num2=int(input('Enter num2:'))
num3=int(input('Enter num3:'))
n=num1
num1=num2
num2=num3
num3=n
print(f'num1={num1}\nnum2={num2}\nnum3={num3}')
```

7. A shop decided to give discount of 10% if the cost of purchased quantity is more than 10,000.
- Ask user for quantity.
- Suppose, one piece will cost 1000.
Print the total cost for user

```
qty=int(input('Enter number of quantity:'))
cost=qty*1000
if cost>=10000:
    total=cost-cost*(10/100)
    print(f'The Total Cost:{total}')
else:
    print(f'The Total Cost:{cost}')
```

Lists

1. Write a python program to read a list of numbers from the user and print the largest number in the list.

```
n=int(input('How many elements in the list:'))
list=[]
for i in range(n):
    num=int(input(f'Enter num {i+1}:'))
    list.append(num)
print(f'The largest number is {max(list)}')
```

2. Create a list of temperatures in degrees Celsius with the values: 25.2, 16.8, 31.4, 23.9, 28, 22.5, and 19.6, and assign it to a variable called temps_in_celsius. Then, convert all the values from temps_in_celsius into Fahrenheit, and store the converted values in a new list temps_in_fahrenheit. The list temps_in_celsius should remain unchanged. (Note: F = 9/5(C) + 32)

```
tempsICelsius=[25.2, 16.8, 31.4, 23.9, 28, 22.5,19.6]
tempsInFahrenheit=[]
for i in tempsICelsius:
    f=9/5*i+32
    tempsInFahrenheit.append(f)
print(tempsInFahrenheit)
```

3. Write a program that insert numbers to a list then found the square and summation of this numbers.

```
List,square=[],[]
n=int(input("Enter the length of the list : "))
for i in range(n):
    num = int(input(f"Enter num {i+1}: "))
    list.append(num)
    j = num**2
    square.append(j)
print(f'square={square}\nThe summation of square numbers:
{sum(square)}')
```

4. Write a program to get the intersection between two lists .

```
inter=[]
list1=[]
list2=[]
num1=int(input('Enter the length of the list1 :'))
for c in range(num1):
   elist1=int(input(f'Enter the element num{c+1} of list1:'))
   list1.append(elist1)
num2=int(input('Enter the length of the list2 :'))
for p in range(num2):
   elist2=int(input(f'Enter ther element num{p+1} of list2:'))
   list2.append(elist2)
for i in list1:
   if i in list2 and i not in inter : :
     inter.append(i)
print(inter)
```

5. Write a python program to get the frequency of the elements in a list.

```
list1=[1,3,4,5,1,3,1]
n=[]
for i in list1:
   if i not in n:
     m=list1.count(i)
     n.append(i)
     print(f"{i} --> {m}")
```

6. Write a python program to print all the strings from a list. #Ex: li=[“red”,56,“blue”,“green”,3.6]
#Output: red, blue , green

```
list=['red',56,'blue','green',3.6]
string=[]
for i in list:
  if type(i) == str:
    string.append(i)
print(string)
```

7. Write a python program to read a list from user and remove the duplicate items from the original list.

```
num=int(input("Enter the length of the list : "))
list=[]
m=[]
for i in range(num):
    elist=int(input(f"Enter the element num{i+1} of the list:
"))
    list.append(elist)
for i in list:
    if i not in m:
        m.append(i)
print(m)
```

8. Write a python program to read a list of numbers from the user and move all zero digits to end of list.

```
num=int(input("Enter the length of the list : "))
list=[]
zero=[]
for i in range(num):
    elist=int(input(f"Enter the element num{i+1} of the list:
"))
    if elist==0:
        zero.append(elist)
    else:
        list.append(elist)
list.extend(zero)
print(list)
```

9. Write a Python program to convert a list of characters into a string.

```
num=int(input("Enter the length of the list : "))
list=[]
for i in range(num):
    elist=input(f"Enter character num{i+1} of the list: ")
    list.append(elist)
string=''
for i in list:
    string+=i
print(string)
```