HomeWork 04

IM/2019/020

https://github.com/ishan27596/INTE-11223-Programming-Concepts/tree/master/HomeWork04

Question 01

```cpp
#include <iostream>
using std::cin;
using std::cout;
using std::endl;

int main()
{
    int count = 0;
    int total = 0;
    int size;
    int inputNumber;
    double average;

    std::cout << "enter max input size" << endl;
    cin >> size;

    while (true)
    {
        if (count >= size)
            break;
        cout << "Enter Number " << count + 1 << endl;
        cin >> inputNumber;
        total += inputNumber;
        count++;
    }
    average = (double)total / (double)size;
    cout << "average : " << average << endl;

    return 0;
}
```

Question 02

```cpp
#include <iostream>
using std::cin;
using std::cout;
using std::endl;

int main()
{
    int count = 0;
    int total = 0;
    int size;
    int inputNumber;
    double average;

    std::cout << "enter max input size" << endl;
    cin >> size;

    while (true)
    {
        if (count >= size)
            break;

        cout << "Enter Number " << count + 1 << endl;
        cin >> inputNumber;
        if (inputNumber < 10)
        {
            count++;
            continue;
        }

        total += inputNumber;
        count++;
    }
    average = (double)total / (double)size;
    cout << "average : " << average << endl;

    return 0;
}
```

Question 03

```cpp
#include <iostream>
using std::cin;
using std::cout;
using std::endl;

int main()
{
    int count = 0;
    int size;
    int inputNumber;
    int smallNumber;
    int largeNumber;

    std::cout << "enter max input size" << endl;
    cin >> size;

    while (true)
    {
        if (count >= size)
            break;

        cout << "Enter Number " << count + 1 << endl;
        cin >> inputNumber;

        if (count == 0)
        {
            smallNumber = inputNumber;
            largeNumber = inputNumber;
            count++;
            continue;
        }

        if (inputNumber < smallNumber)
            smallNumber = inputNumber;

        if (inputNumber > largeNumber)
            largeNumber = inputNumber;

        count++;
    }

    cout << "small number : " << smallNumber << endl;
    cout << "Large number : " << largeNumber << endl;

    return 0;
}
```

Question 04

```cpp
#include <iostream>
#include <algorithm>
using std::cin;
using std::cout;
using std::endl;
using std::sort;

int main()
{

    int size;
    int count = 0;
    int inputNumber;

    while (true)
    {
        std::cout << "enter max input size ,must be bigger than 3" << endl;
        cin >> size;

        if (size > 3)
        {
            break;
        }
        else
        {
            cout << "Enter Number Bigger Than 3" << endl;
        }
    }

    int numberList[size];

    while (true)
    {
        if (count >= size)
            break;

        cout << "Enter Number " << count + 1 << endl;
        cin >> inputNumber;
        numberList[count] = inputNumber;
        count++;
    }
    sort(numberList, numberList + size);

    cout << "third smallest number  is : " << numberList[2] << endl;

    return 0;
}
```

Question 04

```cpp
#include <iostream>
using namespace std;

int main()
{
    int count = 0;
    int lowestNumber;
    int secondLowestNumber;
    int thirdLowerstNumber;
    int noOfElements;
    int userInputNumber;

    cout << "Input No of Element" << endl;
    cin >> noOfElements;

    cout << "EnterNumber" << endl;
    cin >> userInputNumber;
    lowestNumber = userInputNumber;
    secondLowestNumber = userInputNumber;
    thirdLowerstNumber = userInputNumber;
    count++;

    while (count < noOfElements)
    {

        cout << "Enter Number" << endl;
        cin >> userInputNumber;

        if (userInputNumber < lowestNumber)
        {
            thirdLowerstNumber = secondLowestNumber;
            secondLowestNumber = lowestNumber;
            lowestNumber = userInputNumber;
        }

        else if (userInputNumber < secondLowestNumber && userInputNumber > lowestNumber || count == 1)
        {
            thirdLowerstNumber = secondLowestNumber;
            secondLowestNumber = userInputNumber;
        }
        else if (userInputNumber < thirdLowerstNumber && userInputNumber > secondLowestNumber || count == 2)
        {
            thirdLowerstNumber = userInputNumber;
        }
        count++;
    }

    cout << "Third Lowest Number " << thirdLowerstNumber << endl;
}
```

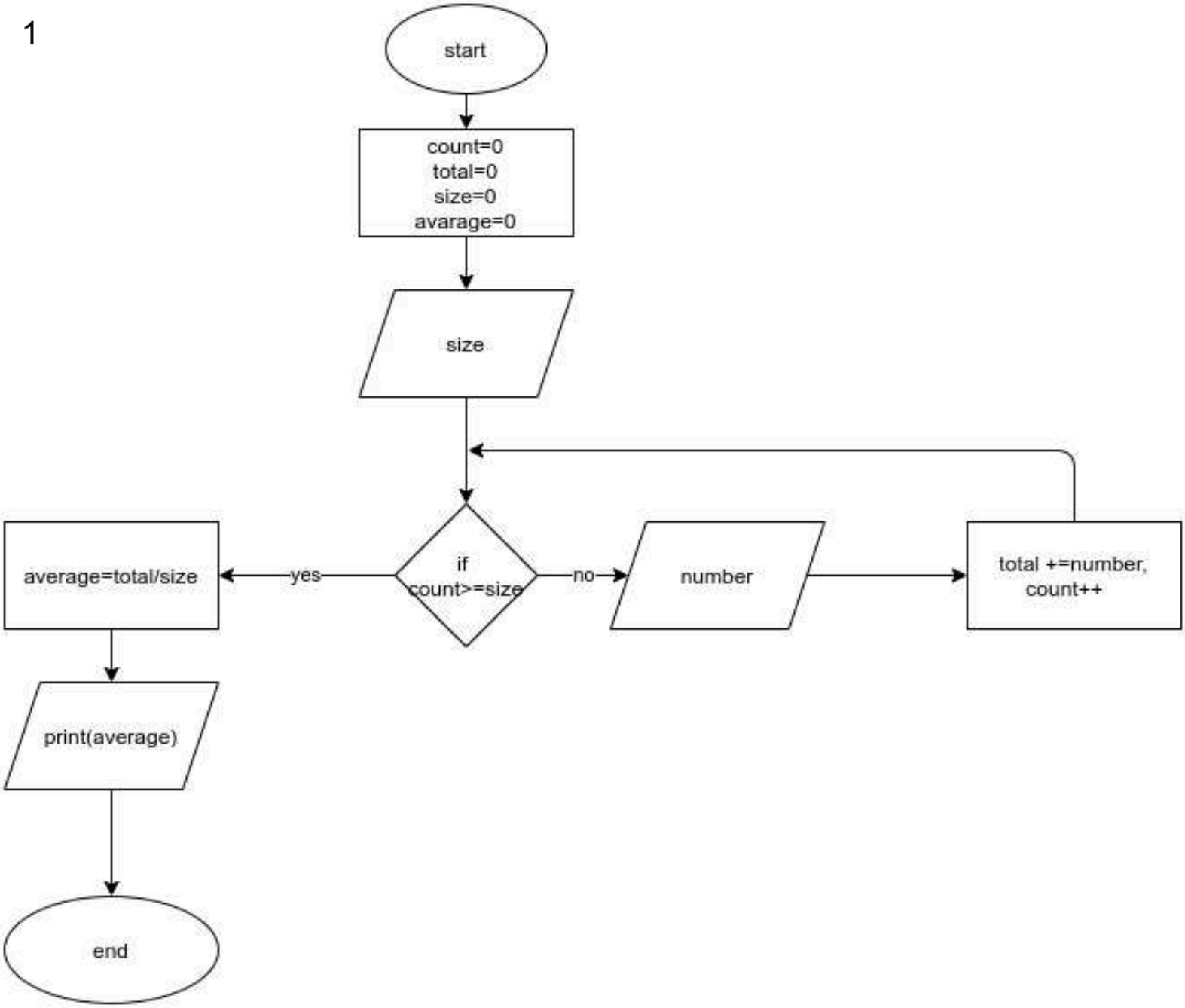
Question 05

```cpp
#include <iostream>
using std::cin;
using std::cout;
using std::endl;

int greatestCommonDivisor(int numberOne, int NumberTwo);

int main()
{
   int numberOne;
   int numberTwo;
   cout << "Enter Number One" << endl;
   cin >> numberOne;
   cout << "Enter Number Two" << endl;
   cin >> numberTwo;
   cout << "GCD of " << numberOne << " and " << numberTwo << " is " << greatestCommonDivisor(numberOne, numberTwo)
<< endl;
   return 0;
}

int greatestCommonDivisor(int numberOne, int numberTwo)
{
   if (numberOne == 0)
      return 0;

   if (numberTwo == 0)
      return 0;

   if (numberOne == numberTwo)
      return numberOne;

   if (numberOne > numberTwo)
      return greatestCommonDivisor(numberOne - numberTwo, numberTwo);
   return greatestCommonDivisor(numberOne, numberTwo - numberOne);
}
```

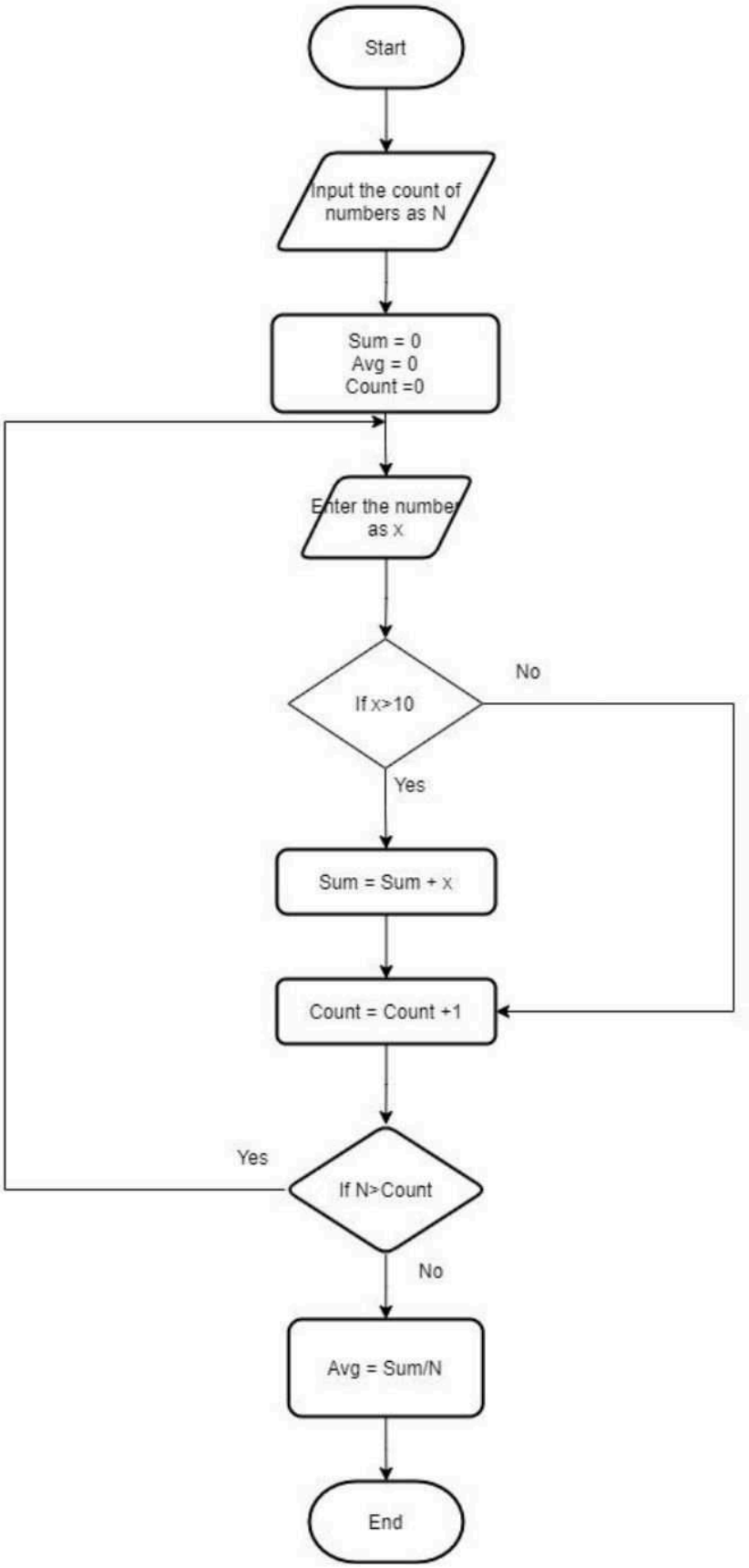
Question 06

```cpp
#include <iostream>
using std::cin;
using std::cout;
using std::endl;

int getLCF(int number1, int number2);

int main()
{
    int number1, number2;
    cout << "Enter Number 1" << endl;
    cin >> number1;
    cout << "Enter Number 2" << endl;
    cin >> number2;

    cout << "LCF of " << number1 << " and " << number2 << " is " << getLCF(number1, number2) << endl;

    return 0;
}

int getLCF(int number1, int number2)
{
    int max;

    if (number1 > number2)
        max = number1;
    else
        max = number2;

    while (true)
    {
        if (max % number1 == 0 && max % number2 == 0)
        {

            return max;
        }
        max++;
    }
}
```

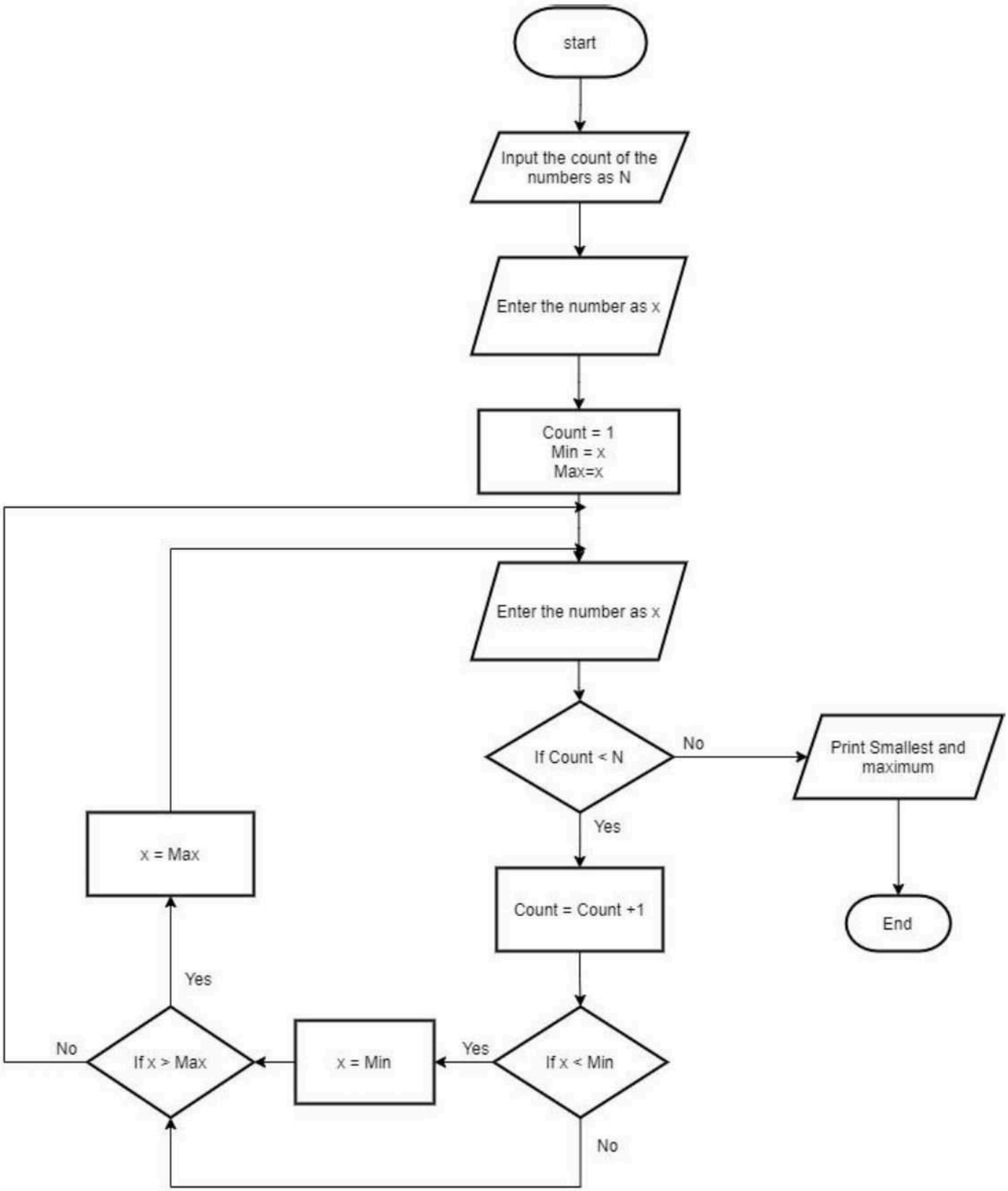
1


start
count=0
total=0
size=0
avarage=0
size
if
count>=size
yes
no
number
total +=number,
count++
average=total/size
print(average)
end

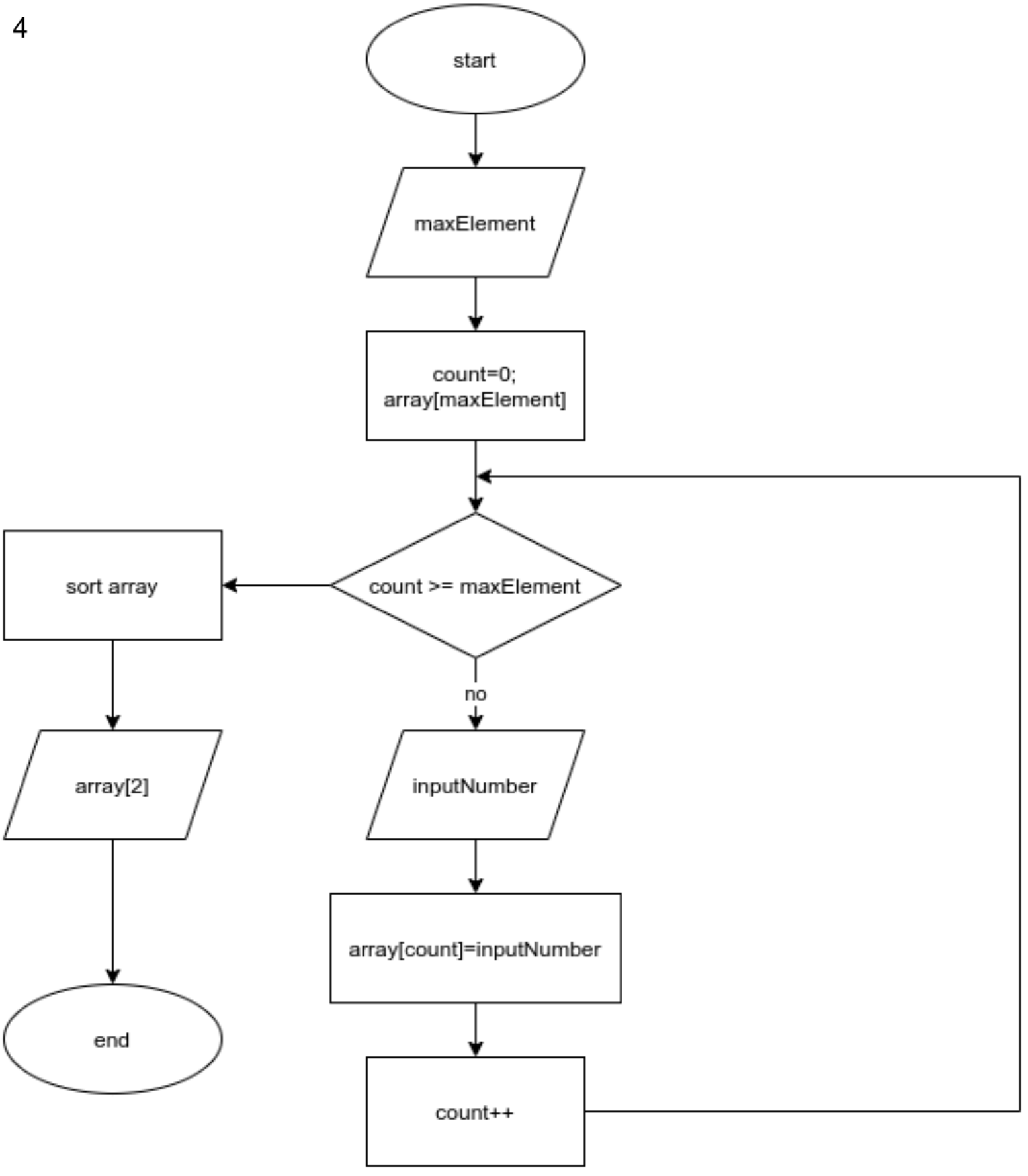
2


Start
Input the count of numbers as N
Sum = 0
Avg = 0
Count =0
Enter the number as x
If x>10
No
Yes
Sum = Sum + x
Count = Count +1
If N>Count
Yes
No
Avg = Sum/N
End

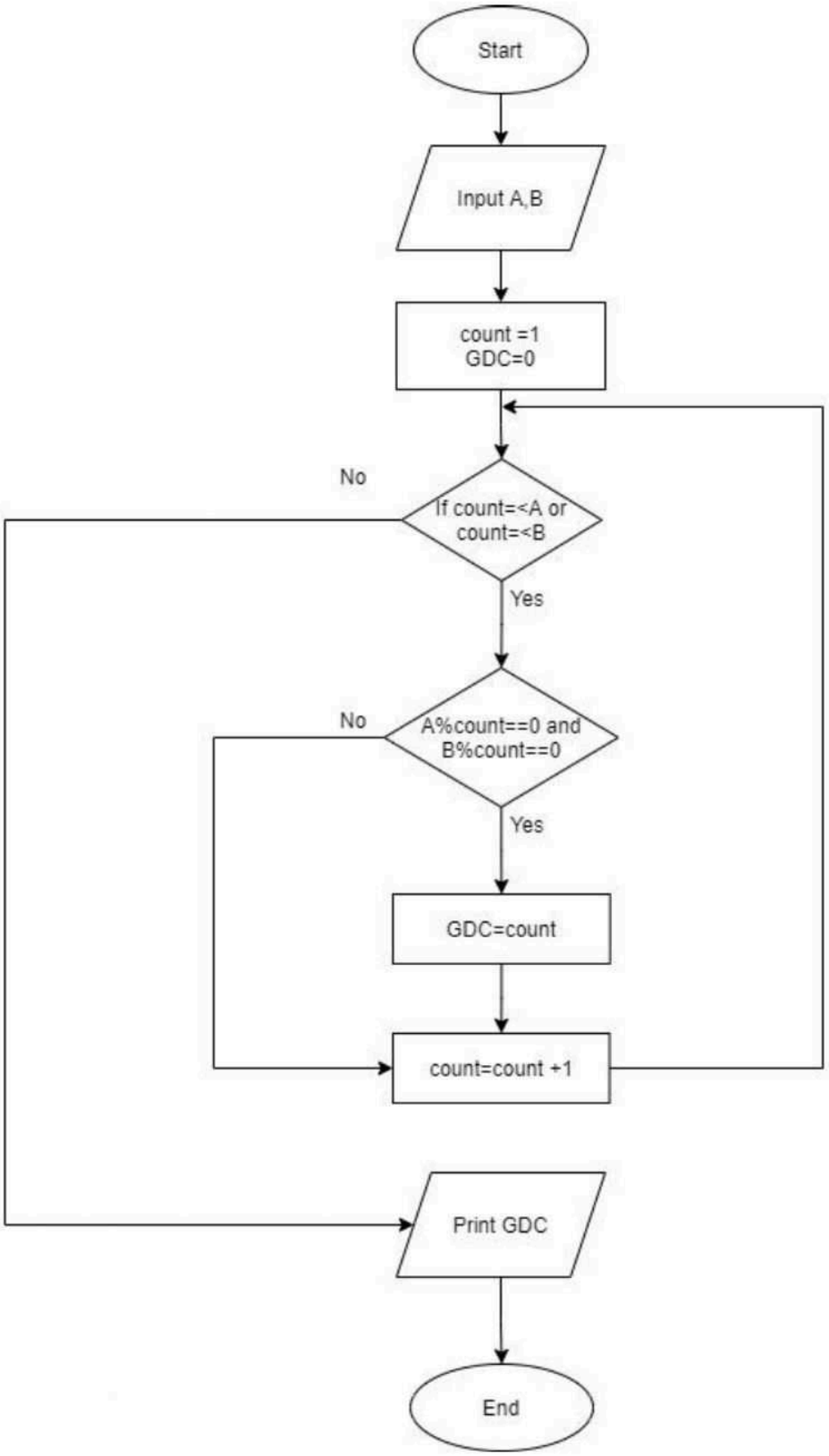
3


start
Input the count of the numbers as N
Enter the number as x
Count = 1
Min = x
Max=x
Enter the number as x
If Count < N
No
Print Smallest and maximum
End
Yes
Count = Count +1
If x < Min
Yes
x = Min
If x > Max
No
Yes
x = Max
No

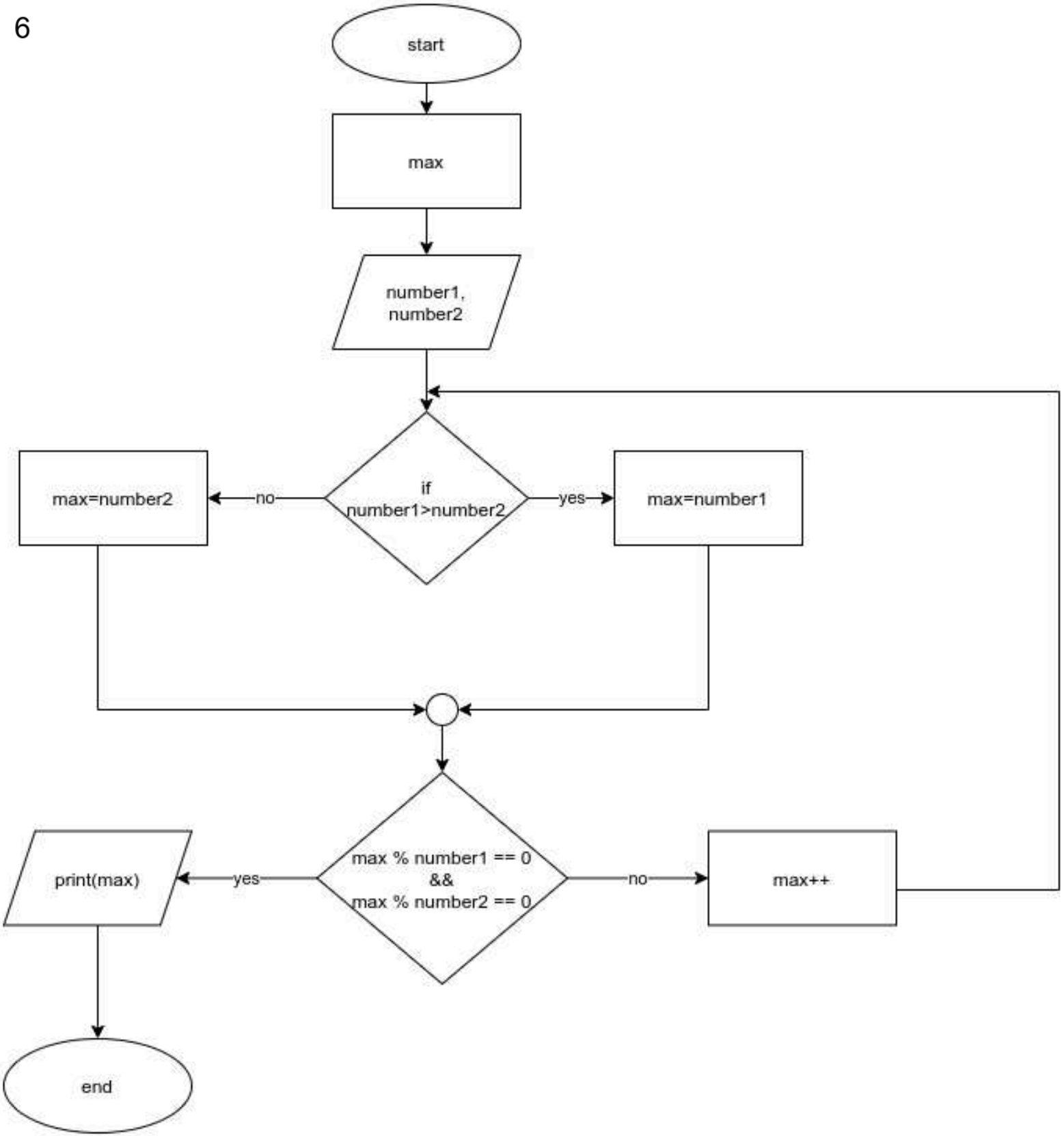
4


start
maxElement
count=0;
array[maxElement]
count >= maxElement
sort array
array[2]
end
no
inputNumber
array[count]=inputNumber
count++

5


Start
Input A,B
count =1
GDC=0
No
If count=<A or
count=<B
Yes
No
A%count==0 and
B%count==0
Yes
GDC=count
count=count +1
Print GDC
End

6


start
max
number1,
number2
if
number1>number2
no
max=number2
yes
max=number1
max % number1 == 0
&&
max % number2 == 0
yes
print(max)
no
max++
end