

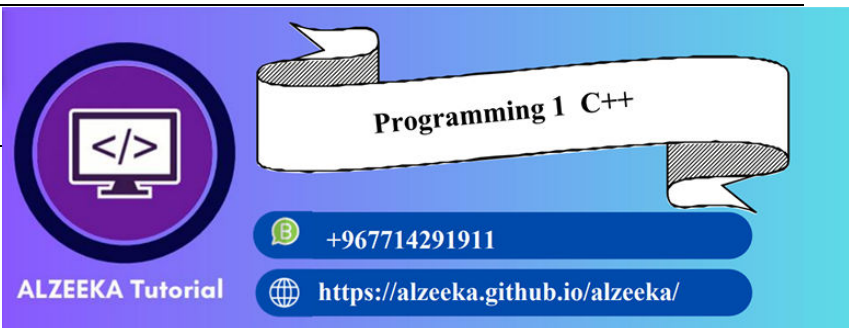
# Control Structure (Switch-Case)

# 5

## KEYWORDS:

Switch case default break continue

## LAB EXERCISE:



ALZEEKA Tutorial

Programming 1 C++

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<https://alzeeka.github.io/alzeeka/>

### Program 1:

Type the following program in the editor of the C++ environment. Compile the program and run it for a=30, b=10 and choice c=2 and c=6 respectively.

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```
#include<iostream>

using namespace std;

int main()
{
    int a,b;
    char c;

    cout <<"enter first number";
    cin >> a;
    cout <<"enter second number";
    cin >> b;

    cout <<"enter your choice"<< endl;
    cout <<" 1 - Addition"<< endl;
    cout <<" 2 - Multiplication"<< endl;
    cout <<" 3 - Subtraction"<< endl;
    cout <<" 4 - Division"<< endl;
    cin >> c;
```

```
switch(c)
{
    case'1':
        cout <<"sum is "<< a+b;
        break;

    case'2':
        cout <<"multiplication is "<< a*b;
        break;

    case'3':
        cout <<"subtraction is "<< a-b;
        break;

    case'4':
        cout <<"division is "<< a/b;
        break;
```

<https://onlinegdb.com/ndWUZSg-y>

```
        default:  
            cout <<"incorrect choice";  
    }  
  
    cout << endl;  
  
    system("PAUSE");  
    return 0;  
}
```

**Output 1 a=30, b=10, c=2:**

multiplication is 300

**Output 2 a=30, b=10, c=6:**

incorrect choice

**Program 2:**

Type the following program in the editor of the C++ environment. Compile the program and run it.

```
#include<iostream>

using namespace std;

int main()
{
    int a=5,b=8,small;
    small= (a<b) ? a : b;
    cout <<"Small = "<< small;

    cout << endl;

    system("PAUSE");
    return 0;
}
```

**Output:**

Small = 5

**ASSIGNMENT:**

**Question 1:** Suppose the input is 5. What is the value of alpha after the following C++ code executes?

```
cin >> alpha;
switch (alpha)
{
    case 1:
    case 2:
        alpha = alpha + 2;
        break;
    case 4:
        alpha++;
    case 5:
        alpha = 2 * alpha;
    case 6:
        alpha = alpha + 5;
        break;
    default:
        alpha--;
}
```

alpha = .....15.....

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<https://onlinegdb.com/3hkrvavOa>

**Question 2:** Write a program that mimics a calculator. The program should take as input two integers and the operation to be performed. It should then output the numbers, the operator, and the result. (For division, if the denominator is zero, output an appropriate message.)  
Some sample output are as follows:

$3 + 4 = 7$   
 $13 * 5 = 65$

**Input and Output:**

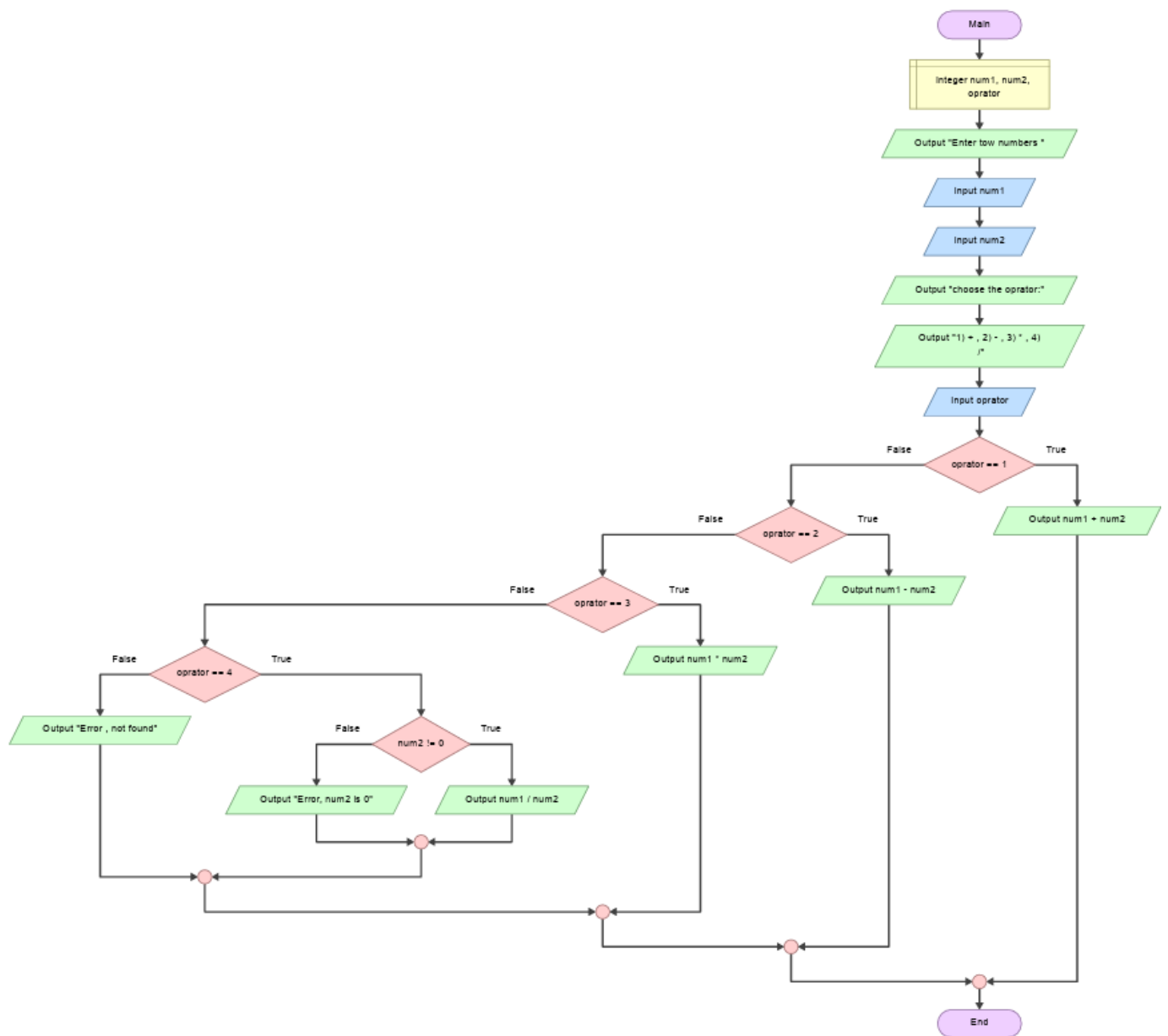
output: Enter tow numbers :  
input : 10 20  
output: choose the oprator:  
input : +  
output: 10 + 20 = 30

output: Enter tow numbers :  
input : 10 0  
output: choose the oprator:  
input : /  
output: Error, num2 is 0

**Constants and Variables:**

```
int num1;  
int num2;  
int oprator;
```

## Flowchart:



**Code:**

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[https://onlinegdb.com/\\_eXJ3PNQ6](https://onlinegdb.com/_eXJ3PNQ6)

```
#include<iostream>
using namespace std;
int main(){

    int num1,num2,oprator;
    cout<<"Enter tow numbers :";
    cin>>num1>>num2;

    cout<<"choose the oprator:"<<endl;
    cout<<"1) + "<<endl<<"2) - "<<endl<<"3) * "<<endl<<"4) / "<<endl;
    cin>>oprator;

    switch(oprator){
        case 1:{cout<<num1+num2;}
        break;
        case 2:{cout<<num1-num2;}
        break;
        case 3:{cout<<num1*num2;}
        break;
        case 4:{
            if(num2 != 0)
                cout<<num1/num2;
            else
                cout<<"Error, the num2 is 0";
            }

        break;
        default:{cout<<"Error not found";}

    }

    return 0;}
```

**Question 3:** Write a program that determines whether an integer is even or odd and negative or positive. Make use of modulo operator.

**Input and Output:**

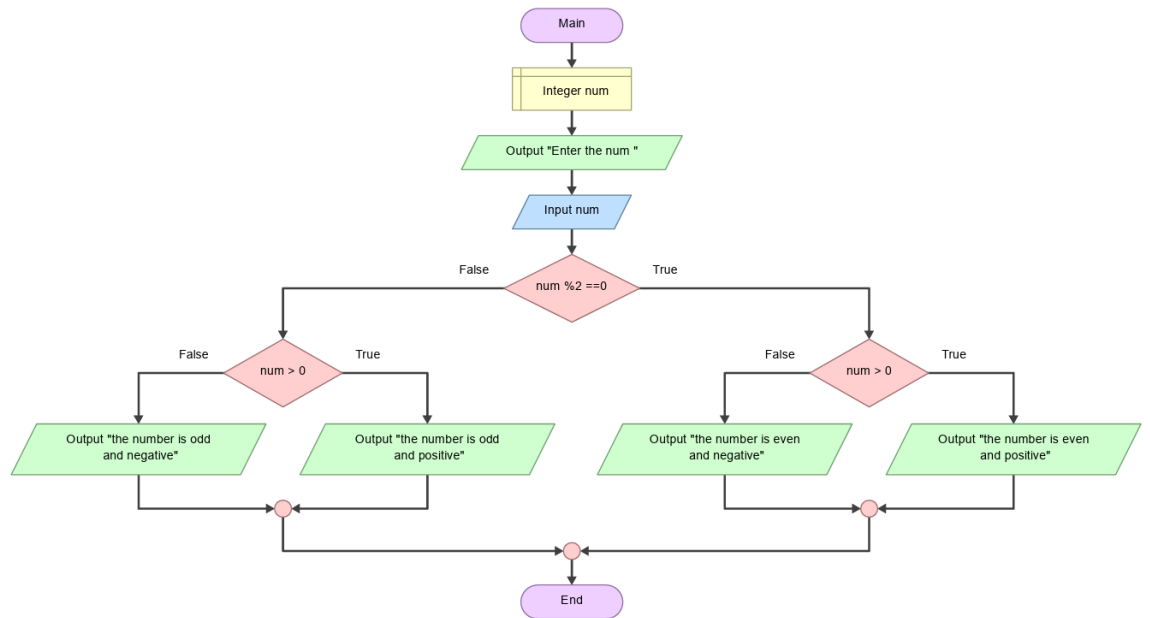
output: Enter the number :  
input: 10  
output: the number is even and positive

output: Enter the number :  
input: -11  
output: the number is odd and negative

**Constants and Variables:**

```
int num;
```

## Flowchart:





Code:

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<https://onlinegdb.com/TpzJ7TuEp>

```
#include<iostream>
using namespace std;
int main(){
    int num;
    cout<<"Enter the number :";
    cin>>num;

    if(num %2 == 0){

        if(num > 0)
            cout<<"the number is even and positive";
        else
            cout<<"the number is even and negative";

    }
    else{

        if(num > 0)
            cout<<"the number is odd and positive";
        else
            cout<<"the number is odd and negative";

    }

    return 0;}
```

**Question 4:** Write a Mark Sheet program that accepts the marks of the different subjects from the user. Calculate total marks, percentage and grade.

If per<60 and per >50 then Grade is “C”  
If per<70 and per >60 then Grade is “B”  
If per<80 and per >70 then Grade is “A”  
If per >80 then Grade is “A-1”  
If per<50 then prints FAIL.

**Input and Output:**

output: Enter 5 subject marks :

input: 90 80 88 93 94

output: A-1

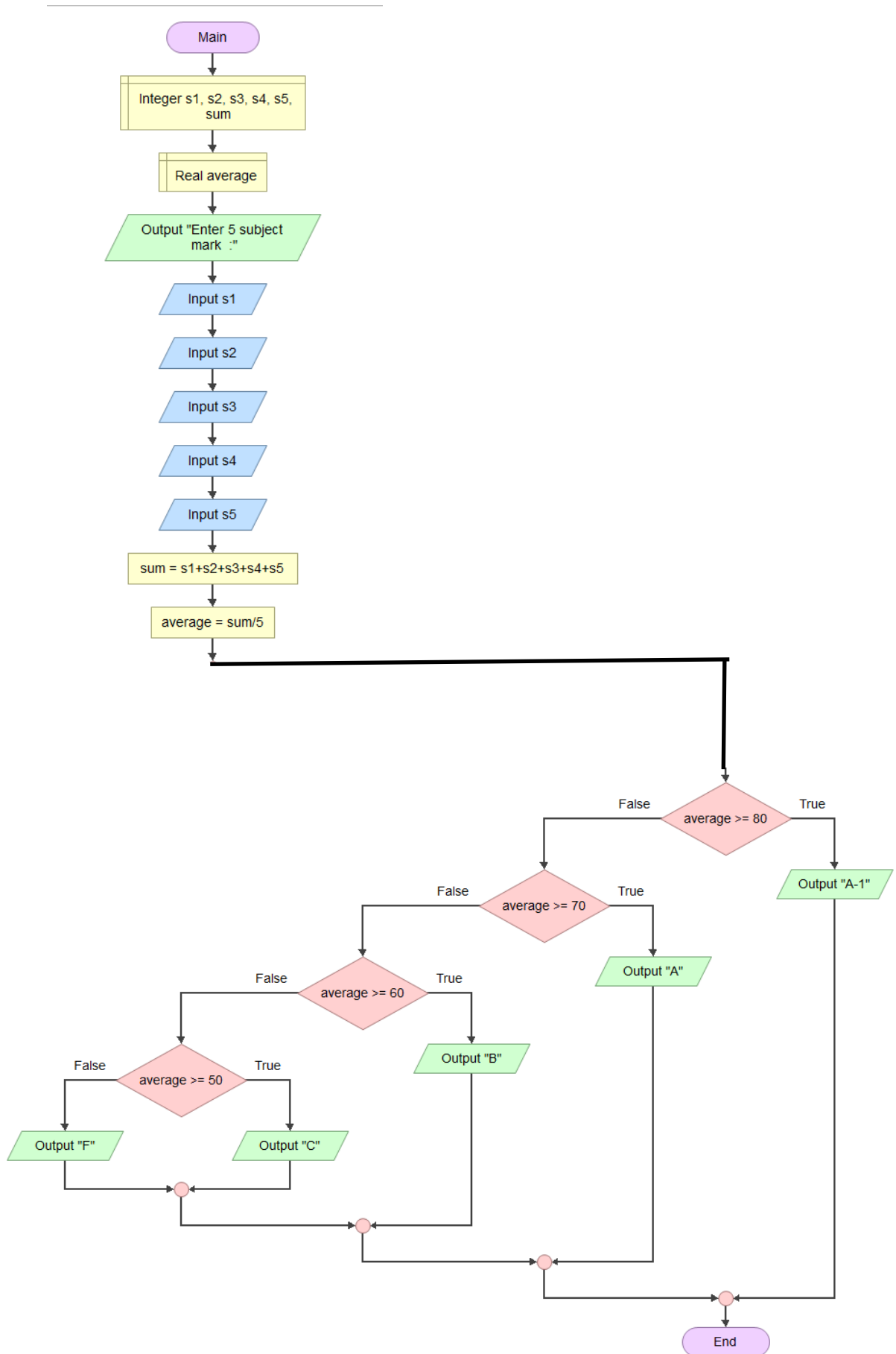
**Constants and Variables:**

int s1,s2,s3,s4,s5;

int sum ;

double average;

## Flowchart:



**Code:**

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<https://onlinegdb.com/uT2UI3cF7U>

```
#include<iostream>
using namespace std;
int main(){
    int s1,s2,s3,s4,s5;
    int sum;
    double average;
    cout<<"Enter 5 subject marks ";
    cin>>s1>>s2>>s3>>s4>>s5;
    sum = s1+s2+s3+s4+s5;
    average = sum/5;

    if(average >= 80)
        cout<<"A-1";
    else if(average >= 70)
        cout<<"A";
    else if(average >= 60 )
        cout<<"B";
    else if(average >= 50 )
        cout<<"C";
    else
        cout<<"F";

    return 0;}
```

**Question 5:** Write a program that finds the greatest number from three input numbers?

**Input and Output:**

output: Enter three numbers:

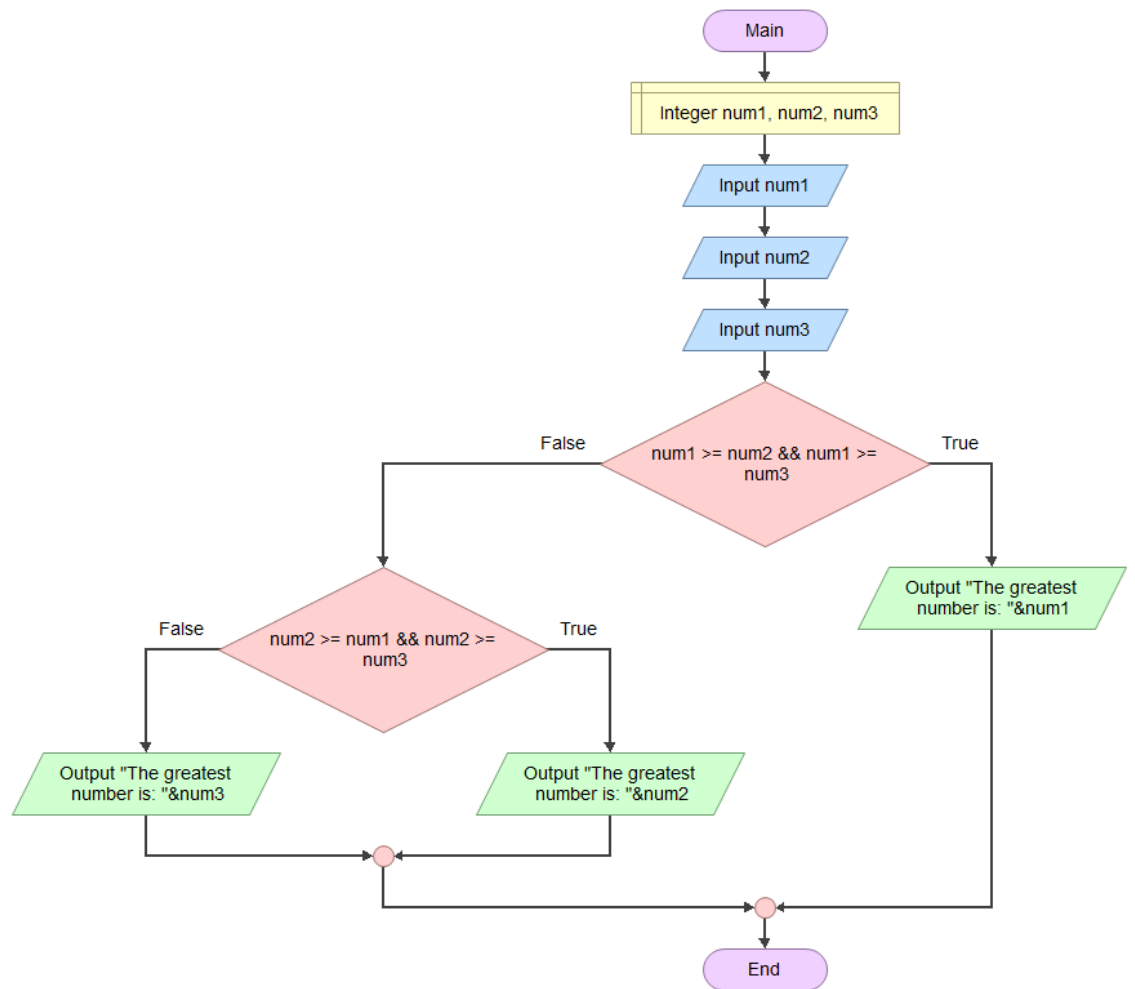
input: 9 4 8

output: The greatest number is: 9

**Constants and Variables:**

```
int num1, num2, num3;
```

## Flowchart:



Code:

جرب الكود اونلاين من هنا

<https://onlinegdb.com/GKXAeK-S5N>

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

int main() {
    int num1, num2, num3;

    cout << "Enter three numbers: ";
    cin >> num1 >> num2 >> num3;

    if (num1 >= num2 && num1 >= num3) {
        cout << "The greatest number is: " << num1 ;
    }

    else if (num2 >= num1 && num2 >= num3) {
        cout << "The greatest number is: " << num2 ;
    }

    else {
        cout << "The greatest number is: " << num3 ;
    }

    return 0;
}
```



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