Control statement

- **These are those statements that allow us to control the execution of the statement(s).**
- **These are four types:**
- **Sequence control statement (Normal way of execution)**
  - **All the statements are executed in the order in which they are placed.**
  - **It gets executed only one time.**
  - **This is the default nature of the execution.**
- **Selection control statement**
  - **While execution of application there is need to take decision.**
  - **These decision applications take by using selection control statement.**
- **Loop control statement**
- **Case control statement**

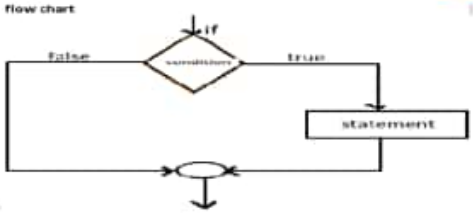
Selection control statement

- An application required to take decision while execution.
- **When application wants to take decision need these statements,**
- In this technology using the keyword **if** you can take decision
- **If** has its several forms
  - **Plain/Simple if**
  - ***If…else pair***
  - **Nested if**
  - **else if ladder**

Simple if

- ***Simple if***
  Syntax:
  if(condition)
  {
  Statement;
  }

flow chart



- **If condition is true then statement will be execute** otherwise skip all the statement from execution.

e.g.

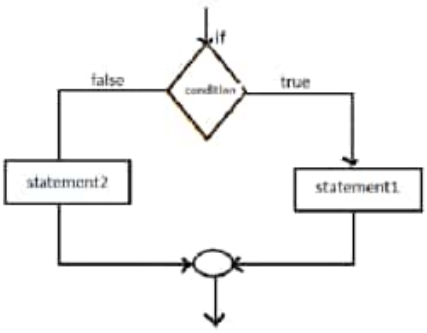
```
/*Write a program to input a number
  and find out absolute value of the given
  number
*/
#include<iostream>
using namespace std;
main()
{
        int n ;
        cout << "Enter a number";
        cin >> n ;
        if ( n < 0 )
        {
                n = n * -1 ;
        }
        cout << endl << "absolute value is " << n ;
}
```


if … else format

- **If ... else format**

Syntax :

```
if ( condition )
{
        statement 1;
}
else
{
        statement2;
}
```

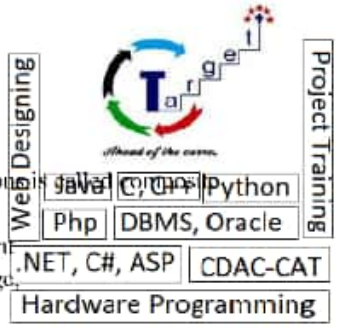


- If condition is true then statement1 will be execute but if condition is false then else statement2 execute.

e.g.

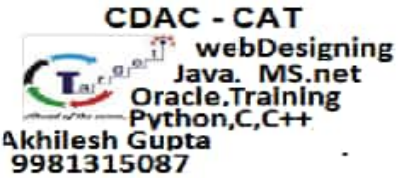
```
/*Write a program to input a number and find out whether the given number is
  negative number or positive number
*/
#include<iostream>
using namespace std;
main()
{
        int n ;
        cout << "Enter a number";
```

```
    cin >> n :
    if ( n < 0 )
    {
            cout << endl << "negative number";
    }
    else
    {
            cout << endl << "positive number";
    }
}
```

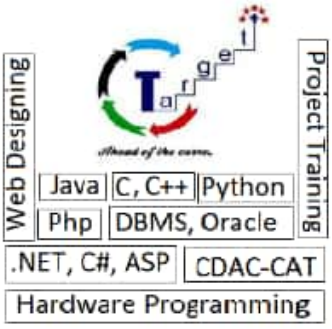


- **Composite condition**
  - A condition can be made from two or more condition is called composite condition.

```
/*Write program to input 5 subject's marks of student
  input from the keyboard and find out the percentage;
  if each subject is of 100 marks then
  print division of the student.

    If percentage >= 60 then first division
    if percentage < 60 and per >=50 then second division
    if percentage < 50 and >=30 then third division
    otherwise fail
*/
#include <iostream>
using namespace std;
main()
{
        int a, b, c, d,e, sum ;
        float per;
        cout << "\nEnter marks of english";
        cin >> a ;
        cout << "\nEnter marks of hindi";
        cin >> b ;
        cout << "\nEnter marks of physics";
        cin >> c ;
        cout << "\nEnter marks of chemistry";
        cin >> d ;
        cout << "\nEnter marks of math";
        cin >> e ;
        sum = a + b + c + d + e;
        per = sum * 100.0F/ 500;
        if ( per >= 60.0f)
        {
```



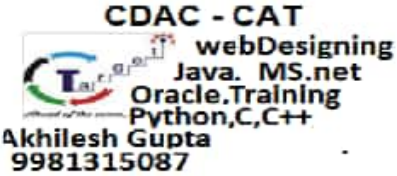
```
        cout << endl << "first division";
    }

    if ( per < 60.0f   &&  per > 50.0f)
    {
        cout << endl <<"second division";
    }

    if ( per < 50.0f   &&  per > 30.0f)
    {
        cout << endl <<"third division";
    }

    if ( per < 30 )
    {
        cout << endl << "fail";
    }
}
```



- **else if ladder:**

Syntax:

```
if ( condition 1)
{
    Statement1;
}
else if ( condition 2)
{
    Statement 2;
}
else if (condition 3)
{
    Statement 3;
```



```
}
....
....
else
{
        StatementElse;
}
```

If condition1 is true then statement1 get execute otherwise only condition2 will be check if it is true then statement 2 get execute otherwise only condition 3 will be test and its statement3 get execute and so on. But else execute only when all the condition are false.

e.g.

```
/*Write program to input 5 subject's marks of student
  input from the keyboard and find out the percentage,
  if each subject is of 100 marks then
  print division of the student.

   If percentage >= 60 then first division
   if percentage < 60 and per >=50 then second division
   if percentage < 50 and >=30 then third division
   otherwise fail
*/
#include <iostream>
using namespace std;
main()
{
        int a, b, c, d,e, sum ;
        float per;
        cout << "\nEnter marks of english";
        cin >> a ;
        cout << "\nEnter marks of hindi";
        cin >> b ;
        cout << "\nEnter marks of physics";
        cin >> c ;
        cout << "\nEnter marks of chemistry";
        cin >> d ;
        cout << "\nEnter marks of math";
        cin >> e ;
        sum = a + b + c + d + e;
        per = sum * 100.0F/ 500;
        if ( per >= 60.0f)
        {
                cout << endl << "first division";
        }
```

```
else if ( per < 60.0f   &&  per > 50.0f)
{
        cout << endl <<"second division";
}
else if ( per < 50.0f   &&  per > 30.0f)
{
        cout << endl <<"third division";
}
else if ( per < 30 )
{
        cout << endl << "fail";
}
}
```