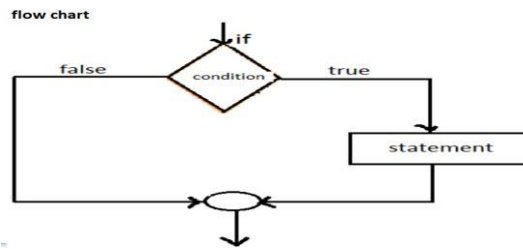## DECISION MAKING

- In JavaScript, we can take decisions using keyword **if** can take decision.

SIMPLE IF

Syntax :
```
if (condition)
{
        Statement;
}
```


flow chart

If condition is true then statement get execute otherwise skip/bypass these statement

e.g..
Write a JavaScript, to input a number and find absolute value of the give number
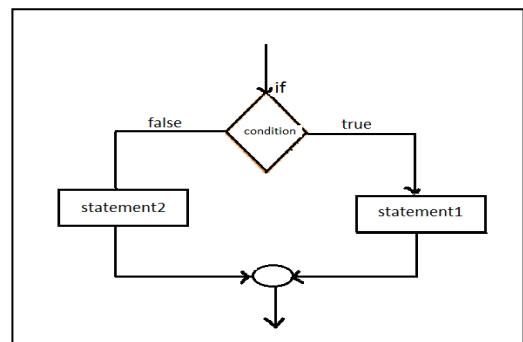e.g.
```
<html>
  <body>
    <script>
    var num = prompt("Enter a number");
    if ( num < 0 ){
       num = -num ;
    }
    document.write("absolute number is " + num );
    </script>
  </body>
</html>
```

IF ... ELSE FORMAT

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


If condition is true then statement1 will be execute otherwise statement 2.

/*write a script to input a number and check whether the given number is positive or negative.*/

e.g.
```
<html>
  <body>
    <script>
    var num = prompt("Enter a number");
    if ( num < 0 ){
       document.write("negative number");
```

```
        }
        else{
           document.write("positive number");
        }
        </script>
     </body>
</html>
```

Body/block of "if" and "else" contains only one statement, then you can left the pair of curly brackets.

NESTED IF

When an "if" contains another simple "if" or if … else format in its true part or false part then Inner "if" is said to nested if.

- Problems with nested if
  1. Care every pair of curly braces.
  2. Care of else with respective if
  3. Need code indentation.

```
if ( condition1 )
    if ( condition2 )
        statement1;
else
    statement2;
```

- 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

Logical AND operator: &&
- Logical AND operator allow us to form composite condition using two more conditions.
        e.g.1
        per < 60.0f && per >= 50.0
- It returns true(1) only then all conditions are true simultaneously
    e.g.2

Logical OR operator: ||
- Logical OR operator allow us to form composite condition using two more conditions.

  e.g.

   ch == 'a' || ch =='b'

- It returns true (1) when any one condition is true.

```
if ( ch == 'a')
{                                    if ( ch == 'a' || ch == 'e')
    document.write("Vowel");         {
}                          →             document.write("Vowel");
if ( ch == 'e')                      }
{
    document.write("Vowel");
}
```

- Write a program to input a character and find out whether the character is vowel or consonant.

  e.g.

```
<html>
  <body>
    <script>
    var ch= prompt("Enter character");
    if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' ||
    ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')
    document.write("<b>"+ch+"</b>" + " is a Vowel");
    else
       document.write("<b>"+ch+"</b>" + " is a Consonant");
    </script>
  </body>
</html>
```

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 a script 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
e.g.

```html
<html>
  <body>
    <script>
    var a = parseInt(prompt("Enter marks of english"));
    var b = parseInt(prompt("Enter marks of hindi"));
    var c = parseInt(prompt("Enter a chamistry"));
    var d = parseInt(prompt("Enter a physics"));
    var e = parseInt(prompt("Enter a math"));
    var sum = a + b + c + d + e;
    var per = sum * 100.0/ 500;
    if ( per >= 60.0 ){
      document.write("first division");
    }
    else if ( per < 60.0 && per >= 50.0 ){
      document.write("second division");
    }
    else if ( per < 50.0 && per >= 30.0 ){
      document.write("third division");
    }
    else {
      document.write("fail");
    }
    </script>
  </body>
</html>
```

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