Looping

- Loop

  - A control structure which causes a sequence of statements to be executed repeatedly

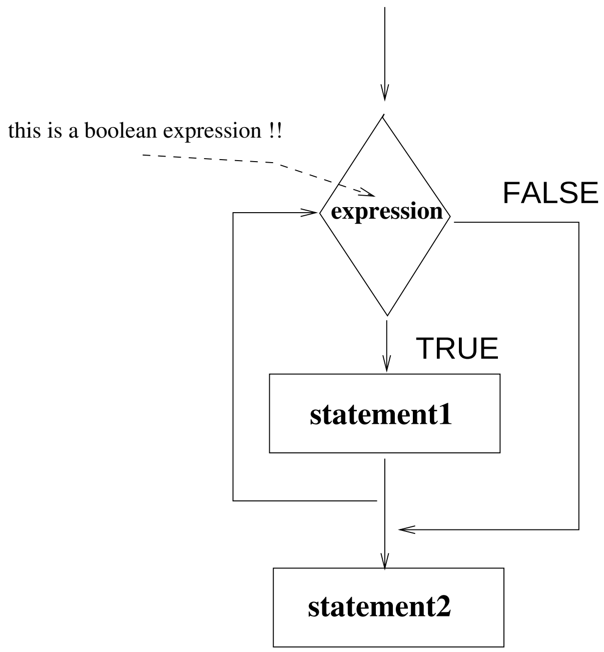
- The *while* statement

```
    while (Expression)
      Statement
```

  - The expression in the parentheses is a logical (Boolean) expression

  - If the value of the expression is *true*, execute Statement and then go back and test the expression again

  - If the value of the expression is *false*, Statement is skipped and execution continues at the statement immediately following the loop



- Blocks (compound statements)

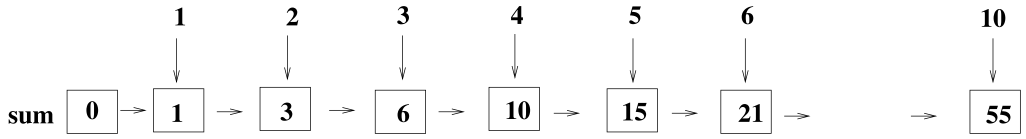
  - The body of the loop can be a block of statements

  - Block of statements must be enclosed in { }

```
// Computes the sum 1+2+3+...+n
#include <iostream.h>

void main()
{
  int i, sum;

  cout << "Enter n\n";
  cin >> n;
  sum=0;
  i=1;
  while (i <= n)
  {
    sum=sum + i;
    ++i;
  }
  cout << "The sum is" << sum;
}
```



- *while*-statement versus *if*-statement