

# C++ LOOPS

How to tell the computer to repeat some instruction(s)

the **while** loop: a general purpose loop

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

    theCount = 1 ;

    cout << "\nHow many times to loop? ";
    cin >> numTimes ;

    while(theCount <= numTimes)
    {
        cout << "\n loop iteration # " << theCount ;
        theCount = theCount + 1 ;
    }

    cout<<"\n\n";
    system("pause");
    return 0;
}
```

How many times to loop? 10

```
loop iteration # 1
loop iteration # 2
loop iteration # 3
loop iteration # 4
loop iteration # 5
loop iteration # 6
loop iteration # 7
loop iteration # 8
loop iteration # 9
loop iteration # 10
```

the **while** loop: a general purpose loop

*(more compact version of same program)*

```
#include<iostream>
using namespace std;
int main()
{
    int theCount = 1 ;
    int numTimes ;

    cout << "\nHow many times to loop? ";
    cin >> numTimes ;

    while(theCount <= numTimes)
    {
        cout << "\n loop iteration # " << theCount ;
        theCount++ ;
    }

    cout<<"\n\n";
    system("pause");
    return 0;
}
```

How many times to loop? 10

```
loop iteration # 1
loop iteration # 2
loop iteration # 3
loop iteration # 4
loop iteration # 5
loop iteration # 6
loop iteration # 7
loop iteration # 8
loop iteration # 9
loop iteration # 10
```

the **do while** loop: do instructions at least once

```
#include<iostream>
using namespace std;
int main()
{
    int theCount = 1 ;
    int numTimes ;

    cout << "\nHow many times to loop? ";
    cin >> numTimes ;

    do
    {
        cout << "\n loop iteration # " << theCount ;
        theCount++ ;
    }while(theCount <= numTimes) ;

    cout<<"\n\n";
    system("pause");
    return 0;
}
```

How many times to loop? 10

```
loop iteration # 1
loop iteration # 2
loop iteration # 3
loop iteration # 4
loop iteration # 5
loop iteration # 6
loop iteration # 7
loop iteration # 8
loop iteration # 9
loop iteration # 10
```

## C++ LOOPS(continued)

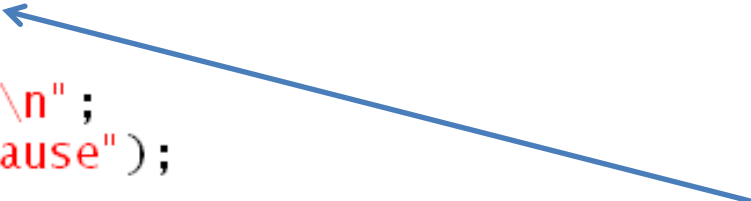
the **for** loop: good for when you know how many times

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

    cout << "\nHow many times to loop? ";
    cin >> numTimes ;

    for (int theCount=1 ; theCount<=numTimes ; theCount++)
    {
        cout << "\n loop iteration # " << theCount ;
    }

    cout<<"\n\n";
    system("pause");
    return 0;
}
```



**for (int theCount=1 ; theCount<=numTimes ; theCount++)**  
**cout << "\n loop iteration # " << theCount ;**

How many times to loop? 10

```
loop iteration # 1
loop iteration # 2
loop iteration # 3
loop iteration # 4
loop iteration # 5
loop iteration # 6
loop iteration # 7
loop iteration # 8
loop iteration # 9
loop iteration # 10
```