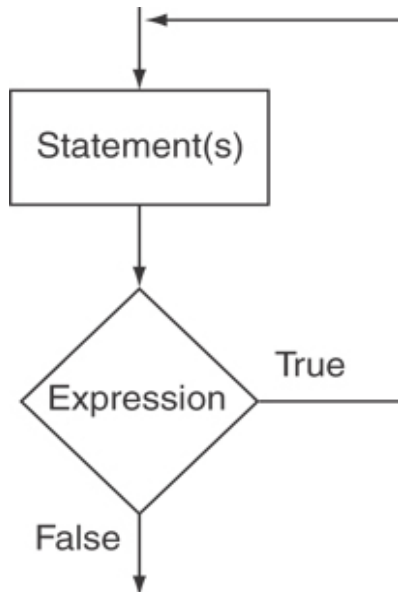


do-while loop



- do-while: a posttest loop – execute the loop, then test the expression

Example 1:

Read a negative integer value from the user. Continue to prompt until a negative value is entered.

```
int x;

do
{
    cout << "Enter an integer: ";
    cin >> x;
} while (x >= 0);
```

- General Format:

```
do
    statement; // single stmt
while (expression);
```

or:

```
do
{
    statement1;
    ...
    statement;
}
while (expression);
```

- Note that a semicolon is required after (*expression*)
- Loop always executes at least once
- Execution continues as long as *expression* is true, stops repetition when *expression* becomes false
- Useful in menu-driven programs to bring user back to menu to make another choice (see Program 5-8 on pages 245-246)

Example 2:

example to illustrate “at-least-once” effect. This function will output x even though x is greater than 0 to start with

```
// output until a positive value is read
int x = 1;
do
{
    cout << x << endl;
    cin >> x;
} while(x < 0);
```

```

1 // This program averages 3 test scores. It repeats as
2 // many times as the user wishes.
3 #include <iostream>
4 using namespace std;
5
6 int main()
7 {
8     int score1, score2, score3; // Three scores
9     double average;             // Average score
10    char again;                  // To hold Y or N input
11
12    do
13    {
14        // Get three scores.
15        cout << "Enter 3 scores and I will average them: ";
16        cin >> score1 >> score2 >> score3;
17
18        // Calculate and display the average.
19        average = (score1 + score2 + score3) / 3.0;
20        cout << "The average is " << average << ".\n";
21
22        // Does the user want to average another set?
23        cout << "Do you want to average another set? (Y/N) ";
24        cin >> again;
25    } while (again == 'Y' || again == 'y');
26    return 0;
27 }

```

Program Output with Example Input Shown in Bold

```

Enter 3 scores and I will average them: 80 90 70 [Enter]
The average is 80.
Do you want to average another set? (Y/N) y [Enter]
Enter 3 scores and I will average them: 60 75 88 [Enter]
The average is 74.3333.
Do you want to average another set? (Y/N) n [Enter]

```

Practice questions:

1. Write a do-while loop to read a deposit amount from the user, the valid deposit amount needs to be between 0 and 5000. It continues to prompt the user until a valid deposit amount is read.
2. Write a do-while loop to prompt the user to read an upper-case letter. It continues to prompt until an upper-case letter is entered.