# do-while Loop

Get introduced to the do-while loop.

We'll cover the following



# Introduction #

Suppose we want to execute the body of a loop at least once even if the condition evaluates to false. How can we accomplish this task in C++?


In the era of programming, we can use the `do-while` loop to implement such tasks.

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*The **do-while** loop is similar to the while loop, with the exception that it executes the block of code and then checks the given condition. Because of this, it is called an exit-controlled loop.*

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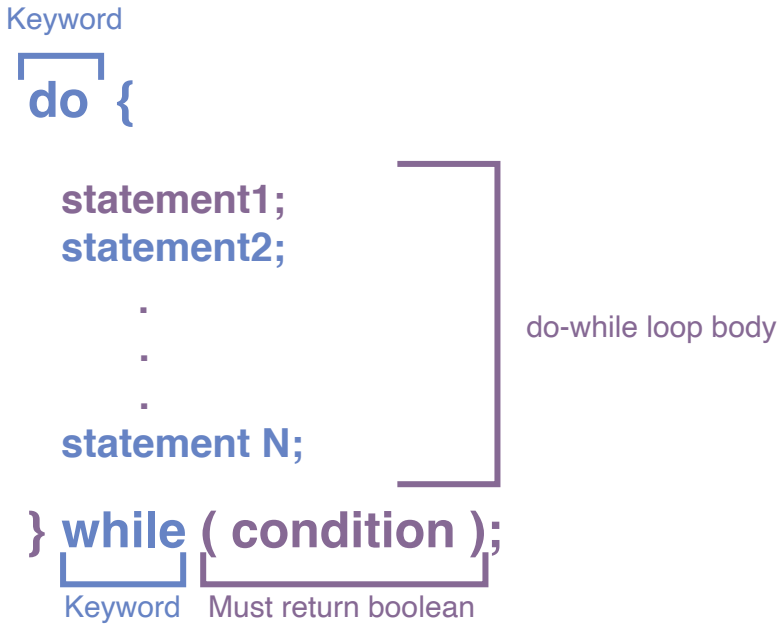
## Syntax #

Let's go over the syntax of the `do-while` loop.

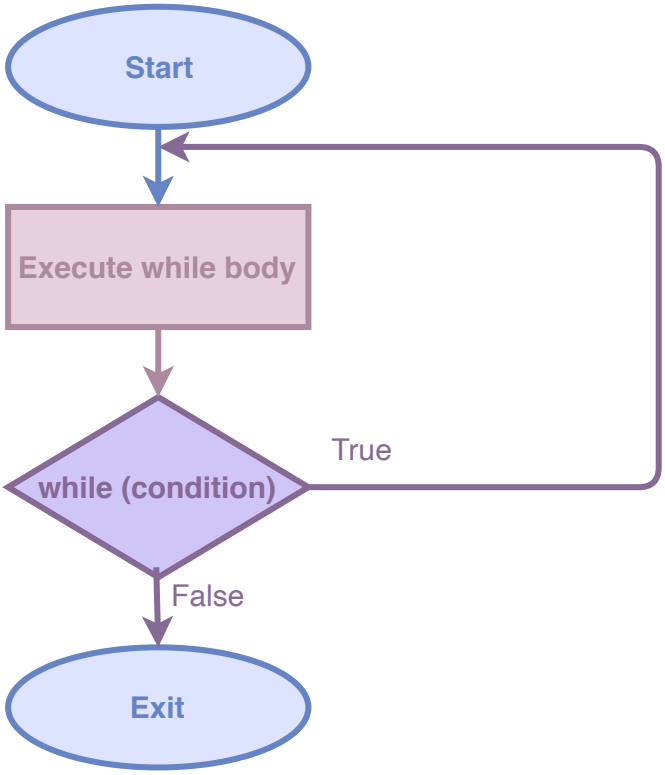



The general syntax of the do-while loop consists of a `do` keyword followed by curly brackets `{ }`, which contain statements to be executed. It is followed by the `while` keyword and the condition to be checked.

> 📝 Like the `while` loop, the `do-while loop` does not know in advance how many times the loop body should be executed.

## Flowchart#

Let's look at the flowchart of the `do-while` loop.




- The `do-while` loop first executes the code in the body of the loop.
- After executing the loop block, it evaluates the given condition.
- If the condition evaluates to true, the code inside the body of the `do-while loop` is executed again. This process continues as long as the given condition remains true.

## Example program#

Let's translate the example given above into a C++ program.

Press the **RUN** button and see the output!

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
```

```
  6    // Initialize the variable money
  7    int money = 0;
  8    // Initialize the variable icecream_price
  9    int icecream_price = 5;
 10    // Prints value of variables
 11    cout << "Intial money = " << money << endl;
 12    cout << "Ice-cream price = " << icecream_price << endl;
 13    // Start of the  do-while loop
 14    do {
 15      // Body of the do-while loop
 16      cout << "Buy an ice-cream" << endl;
 17      money = money - icecream_price;
 18      cout << "Remaining money = " << money << endl;
 19    } while (money >= icecream_price);
 20    // End of the  do-while loop
 21    cout << "You can't buy an ice-cream" << endl;
 22
 23    return 0;
 24  }
```

```
Output                                                    1.3s

 Intial money = 0
 Ice-cream price = 5
 Buy an ice-cream
 Remaining money = -5
 You can't buy an ice-cream
```

# Explanation#

**Line No. 7:** Initializes the value of `money`.

**Line No. 9:** Initializes the value of `icecream_price`.

**Line No. 11:** Prints the value of `money` to the console.

**Line No. 12:** Prints the value of `icecream_price` to the console.

**Line No. 14:** Executes **Lines No. 16 to 19**.

**Line No. 16:** Prints `Buy an ice-cream` to the console

**Line No. 17** Subtracts an `icecream_price` from the `money`.

**Line No. 18:** Prints the new value of `money` to the console.

**Line No. 19:** Checks if the value of `money` is greater than `icecream_price`. If yes, it jumps to **Line No. 14**. If no, it executes **Line No. 21**.

**Line No. 21:** Prints `You can't buy an ice-cream` to the console

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Let's discuss the `for` loop in the upcoming lesson.

See you there!


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