

Introduction to Loops

In this lesson, you will be introduced to the functionality of the loops.

We'll cover the following



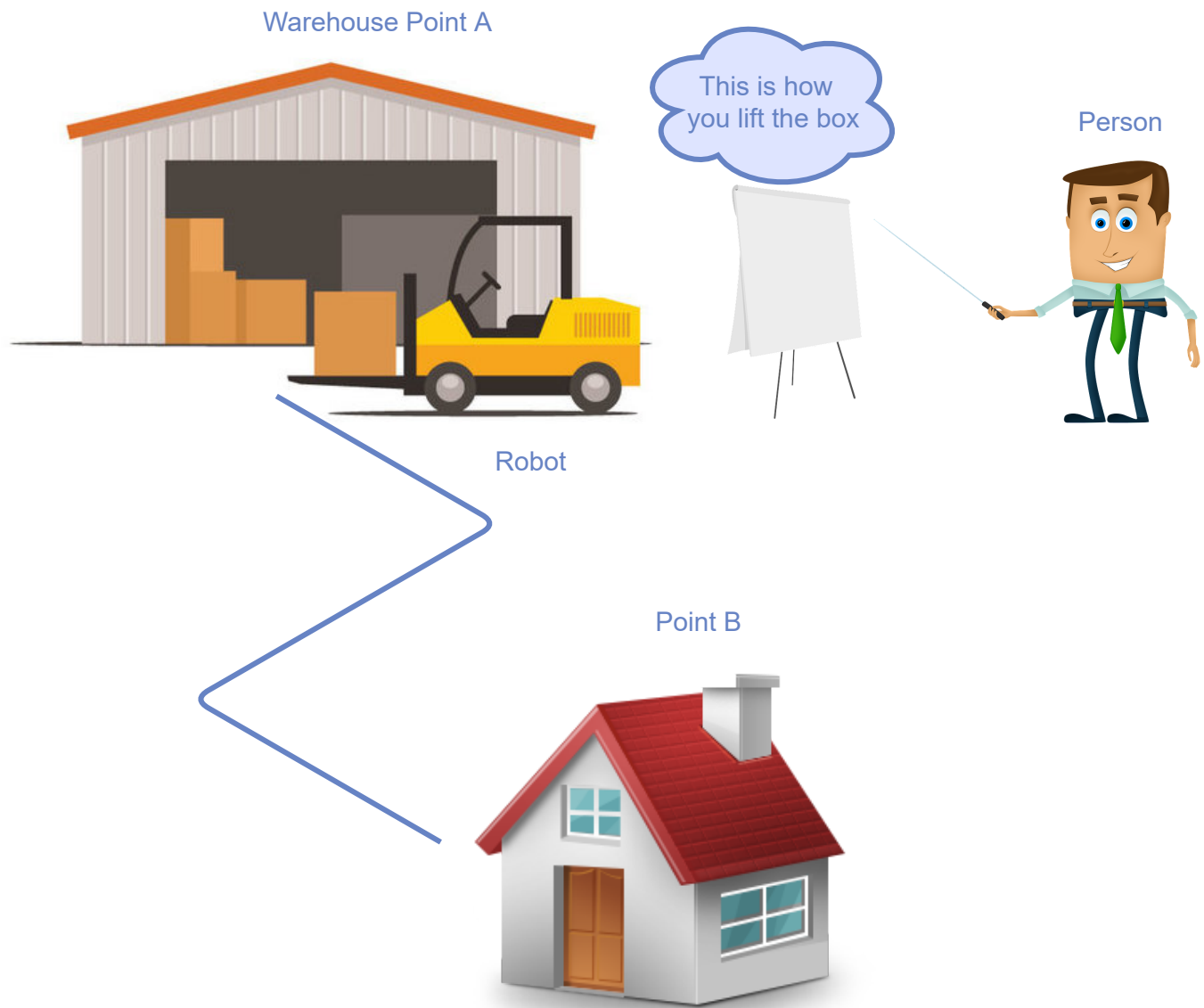
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Introduction

Suppose we have 1000 boxes in a warehouse. We want the robot to move all the boxes from one point to another. The robot is pretty dumb, so we must teach it in detail about how to move one box. We will provide the robot with the following instructions:

1. Go to point A.
2. Lift the box and load it.
3. Move to point B.
4. Unload the box here.

Then, we will ask it to repeat the same steps for the rest of the boxes until there are no more boxes at the point A.



Loops work in a similar fashion. We teach something to the computer, and then we instruct it to repeat the same procedure until the specified condition is fulfilled.

*In computer language, **loops** allow you to repeat a particular block of code until the specified condition is met.*

Example

Suppose we have to write a program to print the first five whole numbers. It's pretty easy!

Use five `cout` statements, and we are done with the task.

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {  
    int number = 0;  
    cout << number++ << endl;  
    cout << number++ << endl;  
    cout << number++ << endl;  
    cout << number++ << endl;  
    cout << number++ << endl;  
    return 0;  
}
```



What if we have to print the first thousand whole numbers? If we use the same approach, it's time-consuming and hectic. Here, loops come to the rescue!

Advantages of using loops

We use loops to:

- Execute a particular piece of code multiple times
- Avoid duplication in our code
- Make the code more readable
- Save our time
- Create an efficient and manageable program
- Make the programming fun!

Types of loops

In C++, we have:

- while loop
- do-while loop
- for loop
- Nested loops
- Infinite loops



We use loops to avoid repetition in our code.

Retake Quiz

Let's explore each of these loops in the upcoming lessons.

Stay tuned!