

Differences Between Iterative and Recursive Functions

In this lesson, we will highlight the key differences between Iterative and Recursive functions.

We'll cover the following ^

- Iterative Vs. Recursive

Iterative Vs. Recursive

Both recursion and iteration are used for executing some instructions repeatedly until some condition is satisfied.

So, what is the difference between Iteration and Recursion? In this lesson, let's discuss a few factors that differentiate the two methods.

Recursive

Iterative

Definition

Recursion refers to a situation where a function calls itself repeatedly until a **base condition** is satisfied, at which point further recursive calls stop.

Iteration refers to a situation where some statements are executed again and again using loops until some condition is satisfied.

Application

Recursion is a process because is always called on a function.

Iterative code is applied to variables. It is a set of instructions that are called upon repeatedly.

Program Termination

Recursive code terminates when the **base case condition** is satisfied.

Iterative code either runs for a particular number of loops or until a specified condition is met.

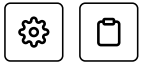
Code Size

Recursive code is smaller in length and

Iterative code is usually extensive and

neater.

cluttered.



Overhead Time

Recursive code has an overhead time for each recursive call that it makes.

Iterative code has no overhead time.

Speed

Recursive code is slower than iterative code, since it not only runs the program but must also invoke stack memory.

Iterative code has a relatively faster runtime speed.

Stack Utilization

Recursion uses a stack to store the variable changes and parameters for each recursive call.

Iterative code does not use a stack.

In the next lesson, we will learn how into convert iterative code to recursive code.

← Back

Next →

Overview of Iterative Functions

Converting Iterative Code to Recursive...

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