# 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 #

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 |

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|---|---|
| neater. | cluttered. |

## Overhead Time

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| Recursive code has an overhead time for each recursive call that it makes. | Iterative code has no overhead time. |

## Speed

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| 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

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| 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.

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Overview of Iterative Functions

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Converting Iterative Code to Recursive...

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