

Difference Between Recursion and Iterations

Recursion

Recursive function is a function that is partially defined by itself

Recursion uses selection structure

Infinite recursion occurs if the recursion step does not reduce the problem in a manner that converges on some condition.

Recursion terminates when a base case is recognized

Recursion is usually slower than iteration due to overhead of maintaining stack

Recursion uses more memory than iteration

Infinite recursion can crash the system

Recursion makes code smaller

Iterations

Iterative instructions are loop based repetitions of a process

Iteration uses repetition structure

An infinite loop occurs with iteration if the loop condition test never becomes false

Iteration terminates when the loop condition fails

Iteration does not use stack so it's faster than recursion

Iteration consumes less memory

Infinite looping uses CPU cycles repeatedly

Iteration makes code longer