

Difference between Recursion and Iteration

S. No.	RECURSION	ITERATIONS
1	Recursive function – is a function that is partially defined by itself	Iterative Instructions –are loop based repetitions of a process
2	Recursion Uses selection structure	Iteration uses repetition structure
3	Infinite recursion occurs if the recursion step does not reduce the problem in a manner that converges on some condition.(base case)	An infinite loop occurs with iteration if the loop-condition test never becomes false
4	Recursion terminates when a base case is recognized	Iteration terminates when the loop-condition fails
5	Recursion is usually slower then iteration due to overhead of maintaining stack	Iteration does not use stack so it's faster than recursion
6	Recursion uses more memory than iteration	Iteration consume less memory
7	Infinite recursion can crash the system	Infinite looping uses CPU cycles repeatedly
8	Recursion makes code smaller	Iteration makes code longer

Difference between While and Do-while loop

S. No.	WHILE	DO-WHILE
1	A while loop is executed and repeat a statement block depending upon condition evaluated at the beginning of the loop.	do-while loop is execute and repeat a statement block depending upon condition evaluated at the end of the loop.
2	A variable is initialized at the beginning or before the loop and used in condition.	A variable is initialized before the loop or assigned inside the loop and used in condition.
3	A statement to change the value of the condition or to increment the value of the variable is given in-side the loop.	A statement to change the value of the condition or to increment the value of the variable is given in-side the loop.
4	The statement block will not be executed when the value of the condition is false.	The statement block will not be executed when the value of the condition is false, but the block is executed at least once.
5	A while loop is commonly used by the programmers.	A do-while loop is used in some cases where the condition needs to the checked the end of loop.

Difference between Break and Continue

S. No.	BREAK	CONTINUE
1	It is used to terminate the execution of a statement block. The next statement which follows this statement block will be executed. The keyword is break.	The continue statement is used to transfer control to the beginning of a statement block. The keyword is continue.
2	When a break statement is executed in a loop, the repetition of the loop will be terminated.	It forces the next iteration of the loop to take place, skipping any code in between itself and the test condition of the loop.