# **Iteration, code reusability and functions**

This piece of writing give a lite of some coding terms that may be informative to the reader. Starting with iterations or loops that is used heavely in coding, then give brief information about reusability of the coding to make our future coding easier. One of the old and basic way of reusability is the use of functions or sub programs which made reusability easier. Later object were found but it is outside the scope of this article.

**Iterations or loops**

In computing, iteration is the technique marking out of a block of statements within a computer program for a defined number of repetitions. That block of statements is said to be iterated; a computer scientist might also refer to that block of statements as an "iteration".

Many computer programs and programming languages use iterations to perform specific tasks, solve problems, and present solutions.[[1]](#endnote-1)

Example of an iteration [[2]](#endnote-2)

for (let i=9 ; i >=0 ; i--){

console.log (i);

}

Each iteration needs 3 statements: initialised counter e.g. I, test condition e.g i>=0 and increament decreament e.g. i++ it can run once, none or infinit according to the condition

**There are two types of iteration:**[[3]](#endnote-3)

*Condition-controlled iteration* (also known as indefinite iteration) is when a set of instructions continously repeated based on whether a condition evaluates as True or False. Types of condition-controlled iteration include while loops, do while loops.

*Count-controlled iteration* (also known as definite iteration) is when a set of instructions is repeated a specific number of times. Types of count-controlled loop include for loops and for each loops.

**Why is iteration important? [[4]](#endnote-4)**

Iteration allows us to simplify our algorithm and coding by stating that we will repeat specific steps until told otherwise. This makes designing algorithms and coding quicker and simpler because they don't have to include lots of unnecessary steps.

**The benefits of reusable code[[5]](#endnote-5):**

Iteration is sort of repeat instructions but we need for our code to be reused again in the future, like we reuse others useful coding we may benefit other on reuse our coding.

Some of the benefits are:

* Faster Development time
* Reduced Development Spending as result of faster time on projects
* Less Development Risks as code is already working and tested
* Maintain high Standards as it is reads and revised by proffesionals
* High Product Potential when our code is reliable

**The purpose of functions[[6]](#endnote-6)**

Functions allow the same piece of code to run multiple times. For these benefits:

* Functions break up long programs or big problem into smaller components or smaller problems.
* Functions can be used again in our future coding and can be shared and used by other programmers.
* It is standard now to use functions or methods inside objects and classes, so it is essential to know it

1. https://en.wikipedia.org/wiki/Iteration [↑](#endnote-ref-1)
2. https://www.w3schools.com/js/js\_loop\_for.asp [↑](#endnote-ref-2)
3. https://isaaccomputerscience.org/concepts/prog\_concepts\_iteration?examBoard=all&stage=all [↑](#endnote-ref-3)
4. https://www.bbc.co.uk/bitesize/guides/z3khpv4/revision/  
    [↑](#endnote-ref-4)
5. https://blog.filestack.com/thoughts-and-knowledge/the-benefits-of-reusing-code-for-software-development/ [↑](#endnote-ref-5)
6. https://problemsolvingwithpython.com/07-Functions-and-Modules/07.01-Why-Functions/ [↑](#endnote-ref-6)