

While Loops

Summary:

- A while loop is such a block of code which keeps getting executed repeatedly as long as a certain condition is true.
- While loops usually require a variable called the iterating variable. The decision of whether to continue the loop another time or to stop it depends on this iterating variable. The value of the iterating variable has to increase/decrease during the execution of the loop.
- It is possible that a while loop doesn't have an iterating variable. In that case, the condition of the loop may depend on any variable whose value changes during the execution of the loop.
- If the value of the variable mentioned in the condition of the while loop doesn't change during the loop at all, then the only way to stop the loop from executing anymore is adding a 'break' statement.
- Break Statement: A break statement is used to stop the while loop from executing another time even when the condition is true.
- Continue Statement: A continue statement is used to skip the iteration of the loop for a specific condition and then continue the loop for the next iteration. Continue, unlike break, cannot be used to stop the loop, only a specific iteration.
- A while loop can also have an 'else' block just like if-else statements. The lines of code under the 'else' block gets executed after the while loop stops, that is, when the condition is not satisfied anymore.

Exercises:

- Exercise 1: Write a program to print the following using while loops:
 - First 10 even numbers
 - First 10 odd numbers
 - First 10 natural numbers
 - First 10 whole numbers
- Exercise 2: Write a program to print the first 10 integers and their squared using while loops.

- Exercise 3: Write a program to print the sum of first 10 even numbers.
- Exercise 4: Write a program to print the table of any number entered by the user.