**For loop vs while loop**

| **arameter** | **For Loop** | **While Loop** |
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| Keyword | For Keyword is used. | While Keyword is used. |
| Use | Number of iterations already known. | No prior information on the number of iterations. |
| In absence of condition | Loop runs infinite times. | Display the compile time error. |
| Initialization Nature | Once done cannot be repeated. | Repeat at every iteration. |
| Initialization in accordance with iteration | To be done at starting of the loop. | Can be done anywhere in the loop body. |
| Function used | Range or xrange function is used to iterate. | No such function is used in the while loop. |
| Generator Support | For loop can be iterated on generators in Python. | While loop cannot be iterated on Generators directly. |
| Efficiency | More efficient when iterating over sequences due to predetermined iterations. | May be efficient in situations where the condition can be evaluated quickly. |
| Loop Nature | Used to iterate over a fixed sequence of items. | Used for more dynamic scenarios where conditions dictate loop continuation. |
| Speed | For loop is faster than while loop. | While loop is slower as compared to for loop. |

Lets say that the for loop and the while loop do the same thing. In this case, for loop is faster than a while loop because the control variable continuously gets calculated and reassigned at each step.

**When we use while statement?**

Handling Iterations with Variable or Unknown Conditions: When iterating over data or processes until meeting a specific condition, especially when the number of iterations or conditions isn’t known initially.

Dealing with Real-Time or Ever-Changing Data: Situations involving constantly evolving data or events, where continuous monitoring or processing is required until certain conditions are met or changes are detected.

Dynamic Processing of User Inputs: Instances that require processing user inputs, such as waiting for particular input before proceeding or conducting verification.

**When we use for statement?**

Iterating Over Known Collections: When you have a predefined collection of items such as lists, tuples, dictionaries, or strings, and you want to perform an action on each item within that collection. (Like fetch data from database)

Performing Actions a Fixed Number of Times: When you need to perform an action or execute code a known or predetermined number of times.