What’s the difference between a while loop and a for loop?

1. **While Loop**:
   * A while loop repeatedly executes a block of code as long as a specified condition is true.
   * It doesn't require knowing the number of iterations beforehand.
   * It's often used when the number of iterations is not known in advance or when the loop needs to run indefinitely until a certain condition is met.
   * The syntax of a while loop in Python is:
   * Example::

while condition:

# code block to be executedck to be executed

1. **For Loop**:
   * A for loop is used to iterate over a sequence (such as a list, tuple, string, or range) and execute a block of code once for each item in the sequence.
   * It requires knowing the number of iterations beforehand based on the length of the sequence.
   * It's often used when you know the number of iterations in advance or when you need to iterate over a collection of items.
   * The syntax of a for loop in Python is:

Example:: # code block to be executed

for item in sequence:

# code block to be executed

In summary, while loops are used when you need to repeat a block of code based on a condition, while for loops are used when you need to iterate over a sequence of items.