**Step 1: Define a List**

list1 = [23, 65, 78, 90, 34, 21, 45, 56]

* We create a list **list1** that contains **8 integer elements**.
* The goal is to **access each element one by one using an iterator** instead of a regular for loop.

**Step 2: Create an Iterator from the List**

iterator = iter(list1)

* In Python, the **iter()** function is used to create an **iterator** from an iterable (like a list).
* Here, iter(list1) creates an iterator object that allows us to **traverse through list1 one element at a time.**
* The iterator keeps track of the current position in the list.

**Step 3: Use a While Loop for Iteration**

while True:

* This creates an **infinite loop** that will continue until we manually break it.
* We'll use **next(iterator)** inside the loop to fetch the next item from the iterator.

**Step 4: Retrieve Elements One by One**

try:

print(next(iterator))

* The next(iterator) function fetches the **next value in the list**.
* The print() statement displays that value.
* On each iteration, **the iterator moves forward automatically** to the next element.

**Step 5: Handle StopIteration Exception**

except StopIteration:

print("No more items in list")

break

* When the iterator reaches the **end of the list**, calling next(iterator) raises a StopIteration exception.
* This exception is caught using except StopIteration.
* The program prints "No more items in list" and **exits the loop using break**.

**Step 6: Execution Flow**

1. next(iterator) → Prints **23**
2. next(iterator) → Prints **65**
3. next(iterator) → Prints **78**
4. next(iterator) → Prints **90**
5. next(iterator) → Prints **34**
6. next(iterator) → Prints **21**
7. next(iterator) → Prints **45**
8. next(iterator) → Prints **56**
9. next(iterator) → **Raises StopIteration**, prints **"No more items in list"**, and exits the loop.

**Final Output**

23

65

78

90

34

21

45

56

No more items in list

**Key Takeaways:**

✔ **Iterators** help access list elements **one at a time**.  
✔ **iter()** creates an iterator object.  
✔ **next(iterator)** fetches the next value.  
✔ **StopIteration is raised** when all elements are exhausted.  
✔ **Try-Except handling** prevents program crashes.

Let me know if you need more clarification!