Iterator Vs Generator

MUKESH KUMAR

AGENDA

- Iterator Vs Generator
- When to use
- RealTime UseCases
- Conclusion

Differences

Feature	Iterator	Generator
Definition	A class that implements __iter__() and __next__()	A function that contains yield
Memory Usage	Can store values in memory	Generates values on the fly, uses less memory
Code Complexity	Requires a class and manual state management	Simple function with yield, automatically manages state
Performance	Slower due to explicit state tracking	Faster due to lazy evaluation
Usage	Suitable for complex iteration logic	Best for handling large data streams efficiently

When to Use Which?

✅ Use Iterators when:

- You need custom behavior for iteration.
- You want full control over how elements are retrieved.

✅ Use Generators when:

- You need to process large datasets without loading everything into memory.
- You want to simplify iteration logic with yield.

RealTime Use Cases

- Refer Notebook IteratorsNGenerators_Applications.ipynb

Conclusion

- Both iterators and generators help in iteration, but generators are memory-efficient and easier to implement.