

Content Covered

- Iterator
- Generator
- AI tools (windsurf, spell checker)
- Linter (Black)
- Using virtual environments

Iterator

- Convert iterable datatype into iterator
- Useful when we have huge data to iterate over & we don't want to store in memory

- Example:

```
my_list = [10, 20, 30, 40, 50]
itr = iter(my_list)
print(next(itr))
```

```
for item in itr:
    print(item)    # Alternative
```

Generator



- Function that returns a sequence of value
- Uses yield statement.
- Memory friendly and efficient
- Function to create iterators

Generator

```
def custom_gen(x, y):  
    while x < y:  
        yield x  
        x = x + 1
```

```
result = custom_gen(10, 15) # Returned as iterable
```

```
for x in result:  
    print(x)
```

AI Tools

- Goto VS code extension and install windsurf
- Try generating doc-string in it
- Select code, right-click & prompt your question
- Install spell checker
- Install black from Microsoft which is linter
- Linter auto formats code

Virtual Environment

- Used in industry to isolate libraries and dependencies from another program
- We create virtual environment, activate and install dependencies in virtual environment
- VS-Code: `ctrl+shift+p` → Create new virtual environment
- Command Line: `python -m venv venv`
- Activate virtual environment
 - Windows → `venv\Scripts\activate`
 - Linux/Mac → `source venv/bin/activate`