

1 What is file handling in Python? Name different file modes

File handling means **creating, opening, reading, writing, and closing files** in Python

Common File Modes

Mode	Meaning
"r"	Read
"w"	Write (overwrites file)
"a"	Append
"x"	Create new file
"rb"	Read binary
"wb"	Write binary

2 Difference between read(), readline(), and readlines()

Method	Description
<code>read()</code>	Reads entire file as one string
<code>readline()</code>	Reads one line at a time
<code>readlines()</code>	Reads all lines as a list

3 What is exception hierarchy in Python?

■ Meaning

An **exception** is an **error** that occurs while running a program.

Python organizes errors in a **parent → child structure** called **exception hierarchy**.

	Mode	Meaning
BaseException		
└─ Exception		
└─ ValueError		
└─ TypeError		
└─ ZeroDivisionError		
└─ IndexError		

④ Difference between `try-except` and `try-except-finally`

⑤ What is the purpose of the `with` statement?

The `with` statement is used for **automatic resource management**.

- ✓ Automatically closes files
- ✓ Prevents memory leaks
- ✓ Cleaner code

```
with open("data.txt", "r") as file:
    content = file.read()
```

(No need to call `file.close()`)

⑥ What are iterators in Python?

An **iterator** is an object that returns elements one at a time

An iterator must have:

- `__iter__()`
- `__next__()`

```
nums = [1, 2, 3]
it = iter(nums)

print(next(it))
print(next(it))
print(next(it))
```

Output

```
1
2
3
```

7 What are generators and how are they different from functions?

A **generator** uses `yield` instead of `return`.
It produces values **one at a time** (memory efficient).

```
def count():  
    yield 1  
    yield 2  
    yield 3  
  
g = count()  
print(next(g))  
print(next(g))
```

Output

```
1  
2
```

Difference:

Function	Generator
Uses <code>return</code>	Uses <code>yield</code>
Returns all values	Returns one value at a time
More memory	Less memory

**8 What is *args and kwargs?

Used to pass **multiple arguments** to a function.

◆ *args (multiple values)

python

```
def add(*args):  
    print(args)  
  
add(1, 2, 3)
```

Output

SCSS

```
(1, 2, 3)
```

◆ **kwargs (key-value pairs)

python

```
def details(**kwargs):  
    print(kwargs)  
  
details(name="Anna", age=20)
```

Output

python

```
{'name': 'Anna', 'age': 20}
```

9 What is type casting? Give examples

■ Meaning

Type casting means converting one data type into another

```
a = 5
b = float(a)
print(b)
```

Output

```
5.0
```

10 Built-in functions

Built-in = already available in Python

Built-in functions are **predefined functions** available without importing modules.

Five built-ins:

- `print()`
- `len()`
- `type()`
- `sum()`
- `range()`

