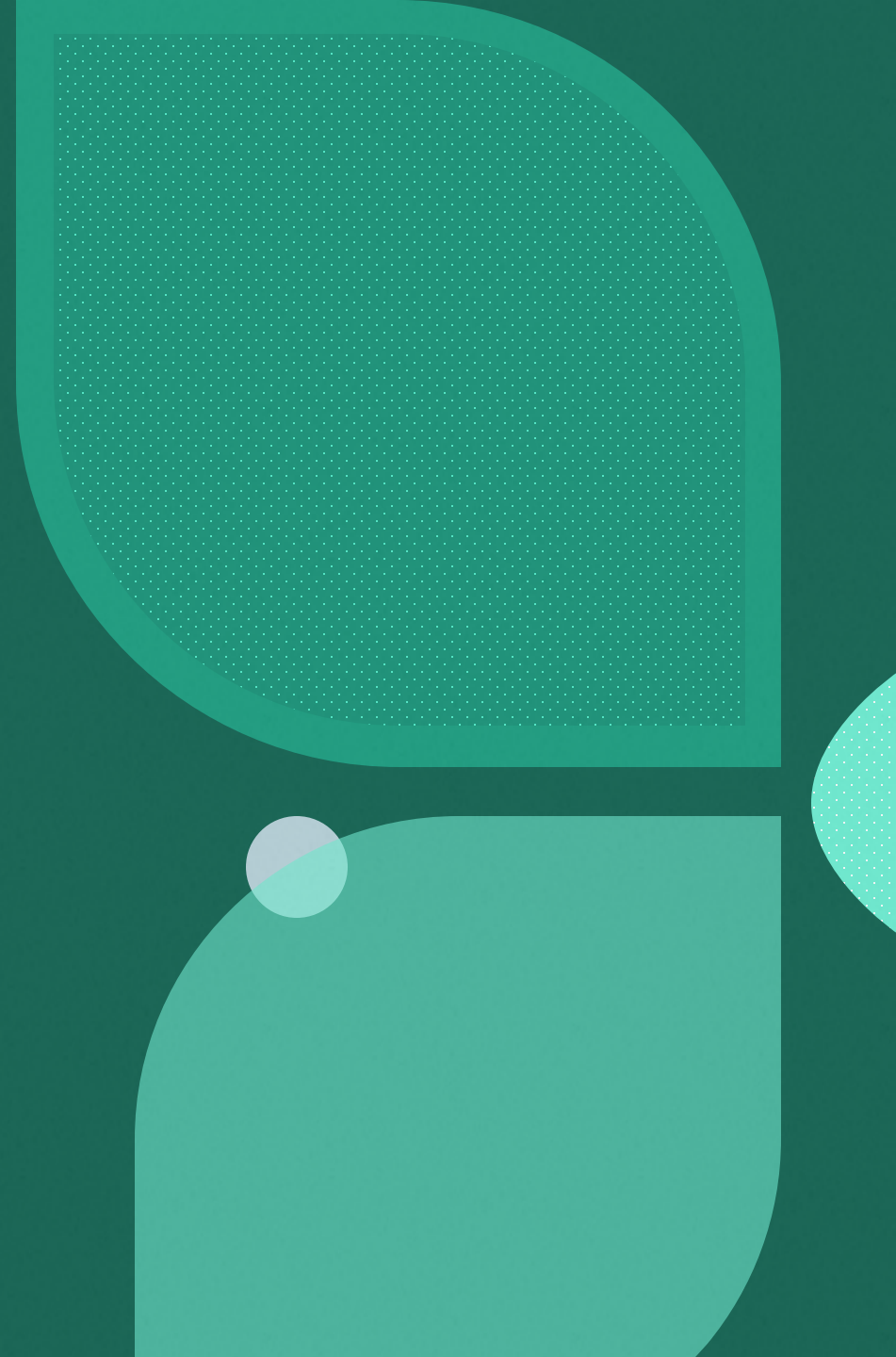


Tops Technology

Module 15) Advance Python Programming

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Opening and Closing Files

1. Opening files in different modes ('r', 'w', 'a', 'r+', 'w+').

- pen files using the built-in `open()` function in different modes, depending on your needs. The mode determines how the file is accessed (e.g., read-only, write-only).
- File Opening Modes

Mode	Description
'r'	Read-only mode. The file must exist.
'w'	Write mode. Creates a new file or overwrites an existing file.
'a'	Append mode. Adds new content to the end of the file without deleting existing content.
'r+'	Read and write mode. The file must exist.
'w+'	Read and write mode. Creates a new file or overwrites an existing file.

➤ Examples

➤ Read Mode ('r'):

➤ with open("example.txt", "r") as file:

➤ content = file.read()

➤ print(content)

➤ Write Mode ('w'):

➤ with open("example.txt", "w") as file:

➤ file.write("This is new content.")

➤ Append Mode ('a'):

➤ with open("example.txt", "a") as file:

➤ file.write("\nThis line is appended.")

➤ Read and Write Mode ('r+'):

➤ with open("example.txt", "r+") as file:

➤ content = file.read()

➤ print(content) # Read existing content

➤ file.write("\nAdding new content.") # Write new content

- **Write and Read Mode ('w+ '):**
- with `open("example.txt", "w+")` as file:
- `file.write("New content replaces old.")`
- `file.seek(0)` # Move the cursor to the beginning
- `print(file.read())` # Read the new content

2. Using the `open()` function to create and access files.

- The `open()` function in Python is used to create, access, and manipulate files. It provides various modes for reading, writing, or appending data.
- **Syntax:**
- `open(file, mode)`
- **file:** The name or path of the file to be opened.
- **mode:** The mode in which the file is opened (default is 'r' for read).

➤ File Creation and Access Modes:

Mode	Action
'w'	Create a new file or overwrite an existing file.
'x'	Create a new file. If the file already exists, an error occurs.
'a'	Open a file for appending. Creates the file if it doesn't exist.
'r'	Open an existing file for reading.

➤ Examples:

➤ Create and Write to a File ('w'):

➤ with open("example.txt", "w") as file:

➤ file.write("This is a new file.")

➤ Create a File ('x'):

➤ try:

➤ with open("example.txt", "x") as file:

➤ file.write("This file is newly created.")

➤ except FileNotFoundError:

➤ print("File already exists.")

➤ **Append to a File ('a'):**

- with open("example.txt", "a") as file:
- file.write("\nAdding more content.")

➤ **Read a File ('r'):**

- with open("example.txt", "r") as file:
- content = file.read()
- print(content)

3. Closing files using close().

- The close() method is used to close a file after reading or writing to it. This ensures that changes are saved and resources are released.
- **Example:**
- file = open("example.txt", "w")
- file.write("This is some content.")
- file.close() # Close the file