

`os` Module:

The `os` module provides functions to manipulate file paths and directories, such as `os.path.exists()` to check if a file exists.

```
1. import os
2.
3. if os.path.exists("example.txt"):
4.     print("File exists!")
5. else:
6.     print("File does not exist!")
```

1. **Introduction**:

- The `os` module in Python provides a way of interacting with the operating system.
- It offers various functions for working with files and directories, as well as utilities for environment variables, process management, and more.

2. **File and Directory Operations**:

- `os.getcwd()`: Returns the current working directory as a string.
- `os.chdir(path)`: Changes the current working directory to the specified path.
- `os.listdir(path='.')`: Returns a list of all the files and directories in the specified directory.
- `os.mkdir(path)`: Creates a new directory with the specified path.
- `os.makedirs(path)`: Creates a directory and all its parent directories if they don't exist.

3. **Path Operations**:

- `os.path.exists(path)`: Checks if the specified path exists.
- `os.path.isfile(path)`: Checks if the specified path is a regular file.
- `os.path.isdir(path)`: Checks if the specified path is a directory.

Example:

```
1. import os
2.
3. # Get the current working directory
4. current_directory = os.getcwd()
5. print("Current directory:", current_directory)
6. # Create a new directory
7. new_directory = "test_directory"
8. os.mkdir(new_directory)
```

```
9. print("Created directory:", new_directory)
10.
11. # Change the current working directory
12. os.chdir(new_directory)
13. print("Changed directory to:", os.getcwd())
14.
15. # List all files and directories in the current directory
16. contents = os.listdir()
17. print("Contents of current directory:", contents)
18.
19. # Create a file in the new directory
20. with open("test_file.txt", "w") as file:
21.     file.write("This is a test file.")
22.
23. # List contents again to see the new file
24. contents = os.listdir()
25. print("Updated contents of current directory:", contents)
```