

1. How do you distinguish between `shutil.copy()` and `shutil.copytree()`?
2. What function is used to rename files??
3. What is the difference between the delete functions in the `send2trash` and `shutil` modules?
4. `ZipFile` objects have a `close()` method just like `File` objects' `close()` method. What `ZipFile` method is equivalent to `File` objects' `open()` method?
5. Create a programme that searches a folder tree for files with a certain file extension (such as `.pdf` or `.jpg`). Copy these files from whatever location they are in to a new folder.

Answers:

1. The `shutil.copy()` function is used to copy a single file from one location to another, while `shutil.copytree()` function is used to copy an entire directory and its contents to a new location.
2. The `os.rename()` function is used to rename files in Python.
3. The delete function in the `shutil` module permanently deletes files and folders, while the `send2trash` module sends files and folders to the system trash or recycle bin instead of permanently deleting them.
4. The equivalent `ZipFile` method to `File` objects' `open()` method is the `ZipFile()` function. It is used to open a ZIP archive and returns a `ZipFile` object.
5. Here is an example program that searches a folder tree for files with the `.txt` extension and copies them to a new folder:

```
python
import os
import shutil

def find_and_copy_files(source_folder, dest_folder, extension):
    # Create destination folder if it doesn't exist
    if not os.path.exists(dest_folder):
        os.mkdir(dest_folder)
    # Walk through source folder and its subdirectories
    for root, dirs, files in os.walk(source_folder):
        for file in files:
            # Check if the file has the desired extension
            if file.endswith(extension):
                # Create the full path of the file
                source_file = os.path.join(root, file)
                # Create the full path of the destination file
                dest_file = os.path.join(dest_folder, file)
                # Copy the file to the destination folder
                shutil.copy(source_file, dest_file)
                print(f"Copied {file} to {dest_folder}")
```

To use the function, call it with the source folder, destination folder, and extension as arguments. For example:

```
python  
find_and_copy_files('C:\\Users\\User\\Documents\\',  
'C:\\Users\\User\\Desktop\\Text_Files\\', '.txt')
```

This will search for all files with the .txt extension in the user's Documents folder and its subdirectories, and copy them to the Text_Files folder on the user's desktop.