

PYTHON ASSIGNMENT – 10

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.

SOLUTIONS

1. **Distinguishing between `shutil.copy()` and `shutil.copytree()`:**

- **`shutil.copy(src, dst)`:** This function copies a single file from source `src` to the destination `dst`. It is used for copying individual files.
- **`shutil.copytree(src, dst)`:** This function recursively copies an entire directory tree from source `src` to destination `dst`. It is used for copying directories along with their contents.

2. Function to Rename Files:

- The `os.rename(src, dst)` function is commonly used to rename files. It takes the source path (`src`) and the destination path (`dst`) as arguments.

3. Difference between delete functions in `send2trash` and `shutil`:

- **`send2trash`:** The `send2trash` module provides a `send2trash()` function that moves files or directories to the system's trash or recycle bin instead of permanently deleting them.
- **`shutil`:** The `shutil.rmtree()` function is used for permanently deleting a directory and its contents.

4. ZipFile Method Equivalent to File Objects' `open()` Method:

- The `ZipFile` method equivalent to File objects' `open()` method is `ZipFile()` itself. You use `ZipFile(filename, mode)` to open a ZIP file, where `filename` is the name of the ZIP file, and `mode` is the mode in which to open it (e.g., 'r' for read, 'w' for write).

5. Program to Search and Copy Files:

Here's a simple Python program that searches for files with a certain file extension in a folder tree and copies them to a new folder:

```
import os
import shutil

def copy_files_with_extension(src_folder, dest_folder, extension):
    # Create the destination folder if it doesn't exist
    if not os.path.exists(dest_folder):
        os.makedirs(dest_folder)

    # Walk through the source folder tree
    for foldername, subfolders, filenames in os.walk(src_folder):
        for filename in filenames:
            if filename.endswith(extension):
                file_path = os.path.join(foldername, filename)
                shutil.copy(file_path, dest_folder)
```

```
print(f"Copied: {file_path} to {dest_folder}")
```

```
# Example usage: Copy all .pdf files from 'source_folder' to  
'destination_folder'
```

```
source_folder = '/path/to/source_folder'
```

```
destination_folder = '/path/to/destination_folder'
```

```
file_extension = '.pdf'
```

```
copy_files_with_extension(source_folder, destination_folder,  
file_extension)
```

Replace `/path/to/source_folder` and `/path/to/destination_folder` with the actual paths, and modify `file_extension` accordingly. This program uses `os.walk()` to traverse the source folder tree and `shutil.copy()` to copy files with the specified extension to the destination folder.

