Assignment-10

1. How do you distinguish between `shutil.copy()` and `shutil.copytree()`?

Ans

- `shutil.copy()` copies a single file from a source to a destination.

- `shutil.copytree()` copies an entire directory tree (a folder and all its subfolders and files) to a new location.

2. What function is used to rename files?

Ans The function used to rename files is `os.rename()`. It can be used as:

```
os.rename("old_filename.txt", "new_filename.txt")
```

3. What is the difference between the delete functions in the `send2trash` and `shutil` modules?

Ans

- `send2trash.send2trash()` moves a file or folder to the recycle bin (or trash), allowing for recovery.

- `shutil.rmtree()` or `os.remove()` permanently deletes files or directories without sending them to the recycle bin, making recovery more difficult.

4. ZipFile objects have a `close()` method just like File objects' `close()` method. What ZipFile method is equivalent to File objects' `open()` method?

Ans The ZipFile method equivalent to the File objects' `open()` method is `ZipFile()`. It is used to open a ZIP file, and you can specify the mode (read, write, etc.).

For example:

```
import zipfile
with zipfile.ZipFile('example.zip', 'r') as z:
    z.extractall()
```

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.

```
import os
import shutil

def search_and_copy(src_folder, dest_folder, file_extension):
    # Ensure the destination folder exists
    if not os.path.exists(dest_folder):
        os.makedirs(dest_folder)

    # Walk through the folder tree
    for foldername, subfolders, filenames in os.walk(src_folder):
        for filename in filenames:
            if filename.endswith(file_extension):
                # Construct full file path
                file_path = os.path.join(foldername, filename)
                # Copy the file to the destination folder
                shutil.copy(file_path, dest_folder)
                print(f"Copied: {file_path}")

# Define source and destination folders
src_folder = "path/to/source_folder"
dest_folder = "path/to/destination_folder"
file_extension = ".pdf"  # Change to desired file extension, e.g., ".jpg"

# Run the function
search_and_copy(src_folder, dest_folder, file_extension)
```