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

**Ans.** `shutil.copy()` and `shutil.copytree()` are two functions in the Python Standard Library module `shutil` (short for shell utility) that perform copying operations. The difference between the two is in what they copy:

- `shutil.copy()` copies a single file from source to destination. It is used to copy a single file to another location on the file system, preserving the file metadata (e.g., permissions, timestamps, etc.).

- `shutil.copytree()` copies an entire directory and its contents from source to destination. It is used to recursively copy an entire directory and its subdirectories, preserving all the metadata associated with the files and directories.

In simple terms, `shutil.copy()` is used to copy individual files, whereas `shutil.copytree()` is used to copy entire directories and their contents.

2. What function is used to rename files??

**Ans.** The function used to rename files is usually called "rename" or "rename file". This function is typically available in operating systems, such as Windows, macOS, and Linux, as well as in programming languages such as Python, C, and Java. The exact syntax of the function may vary depending on the operating system or programming language you're using, but the basic idea is the same: to change the name of a file from one name to another.

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

**Ans.** The `send2trash` and `shutil` modules in Python both provide functions for deleting files and directories, but they differ in their approach and the level of permanence of the deletion.

The `send2trash` function, which is part of the `send2trash` module, is designed to move files and directories to the trash or recycle bin, allowing the user to recover them later if necessary. The deletion performed by `send2trash` is not permanent, and the files can be recovered until the trash or recycle bin is emptied.

On the other hand, the `shutil` module provides the `rmtree` function for deleting directories, and the `remove` function for deleting individual files. These functions permanently delete the specified files and directories, and the deleted data cannot be recovered.

In summary, the `send2trash` function provides a safer and more reversible way to delete files and directories, while the functions in the `shutil` module provide a more powerful and permanent way to delete data.

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 equivalent method to the `open()` method for File objects in the `ZipFile` class is the `ZipFile()` constructor. Just like the `open()` method for File objects opens a file and returns a file object, the `ZipFile()` constructor opens a zip file and returns a `ZipFile` object that can be used to access the contents of the zip file.

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.

**Ans.** Here's one way to write a program in Python to accomplish this task:

import os

import shutil

def search\_and\_copy(src\_folder, dst\_folder, file\_extension):

for root, dirs, files in os.walk(src\_folder):

for file in files:

if file.endswith(file\_extension):

src\_file = os.path.join(root, file)

dst\_file = os.path.join(dst\_folder, file)

shutil.copy2(src\_file, dst\_file)

src\_folder = '/path/to/src/folder'

dst\_folder = '/path/to/dst/folder'

file\_extension = '.pdf'

search\_and\_copy(src\_folder, dst\_folder, file\_extension)

This program uses the `os` and `shutil` modules to accomplish the task. `os.walk` is used to traverse the folder tree and find all the files, and `shutil.copy2` is used to copy the files to the destination folder. You can change the `src\_folder` and `dst\_folder` variables to match the desired source and destination folders, and change the `file\_extension` variable to match the desired file extension you want to search for.