Here are the answers to your file-handling and shutil module-related questions:

1. **How do you distinguish between shutil.copy() and shutil.copytree()?**
   * shutil.copy(src, dest): Copies a single file from src to dest.
   * shutil.copytree(src, dest): Copies an **entire directory tree**, including all files and subdirectories, from src to dest.
2. **What function is used to rename files?**  
   os.rename(old\_name, new\_name).  
   Example:
3. import os
4. os.rename("old\_file.txt", "new\_file.txt")
5. **What is the difference between the delete functions in the send2trash and shutil modules?**
   * send2trash.send2trash(file): Moves the file to the **Recycle Bin (Trash)**, allowing recovery.
   * shutil.rmtree(directory): **Permanently deletes** the directory and all its contents (cannot be recovered).
6. **ZipFile objects have a close() method just like File objects’ close() method. What ZipFile method is equivalent to File objects’ open() method?**  
   zipfile.ZipFile() is equivalent to open().  
   Example:
7. import zipfile
8. zf = zipfile.ZipFile("example.zip", "w") # Open a ZIP file for writing
9. **Create a program that searches a folder tree for files with a certain file extension (such as .pdf or .jpg) and copies them to a new folder.**
10. import os
11. import shutil
12. def copy\_files\_by\_extension(src\_folder, dest\_folder, extensions):
13. if not os.path.exists(dest\_folder):
14. os.makedirs(dest\_folder) # Create destination folder if it doesn't exist
15. for foldername, subfolders, filenames in os.walk(src\_folder):
16. for filename in filenames:
17. if filename.lower().endswith(tuple(extensions)): # Check file extension
18. src\_file = os.path.join(foldername, filename)
19. dest\_file = os.path.join(dest\_folder, filename)
20. shutil.copy2(src\_file, dest\_file) # Copy with metadata
21. # Example usage
22. source\_directory = "C:\\Users\\YourName\\Documents"
23. destination\_directory = "C:\\Users\\YourName\\Documents\\CopiedFiles"
24. file\_extensions = [".pdf", ".jpg"] # Extensions to search for
25. copy\_files\_by\_extension(source\_directory, destination\_directory, file\_extensions)

This script:

* + Recursively searches the src\_folder for .pdf and .jpg files.
  + Copies them into dest\_folder while preserving metadata.

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