

NeatFile Implementation Manual

Class Breakdown

NeatFileApp class

- Main JavaFX application class that builds UI and handles user events.
- Uses NeatFileLogic to handle file processing.
- Manages all groups of rules and paths through the NeatGroup class.
- Calls method to start 'file scanner'

NeatFileLogic class

- Handles core logic: storing groups and processing/moving files.
- Has thread-safe methods to ensure files are processed one at a time.

NeatGroup class

- Represents one file organization group with a set of rules and watch/target directories.
- Stores each group's rules and directories using Path and Rule objects.

Rule Interface

- Defines the shared contract for all rule types with methods like matches(Path) and toJSON().
- Implemented by 5 different rule classes.

Rule Implementation Classes

- FileCategoryRule – checks general file type (e.g., image, document).
- FileExtensionRule – checks file extension like .pdf or .txt.
- LastModifiedRule – checks last modified time in days.
- NameHasRule – checks filename content with optional regex.
- StringContainedRule – checks text content of files (PDF, DOCX, etc.).

Key Technologies

- JavaFX – used for UI elements and styling.
- java.nio.file.Path – used to represent file system paths as objects.
- org.json – used for saving/loading group configurations.
- Apache POI / PDFBox – used to read contents from supported file types.

Behavior Summary

- When Finalize is clicked, groups are saved to groups.json and reloaded to update the internal state.
- Files are scanned every 5 seconds. If a file matches a group's rules, it is moved to the target folder.
- Conflicting or duplicate groups are detected and prevented in NeatFileLogic.

UML Diagram

