CST Home Assignment

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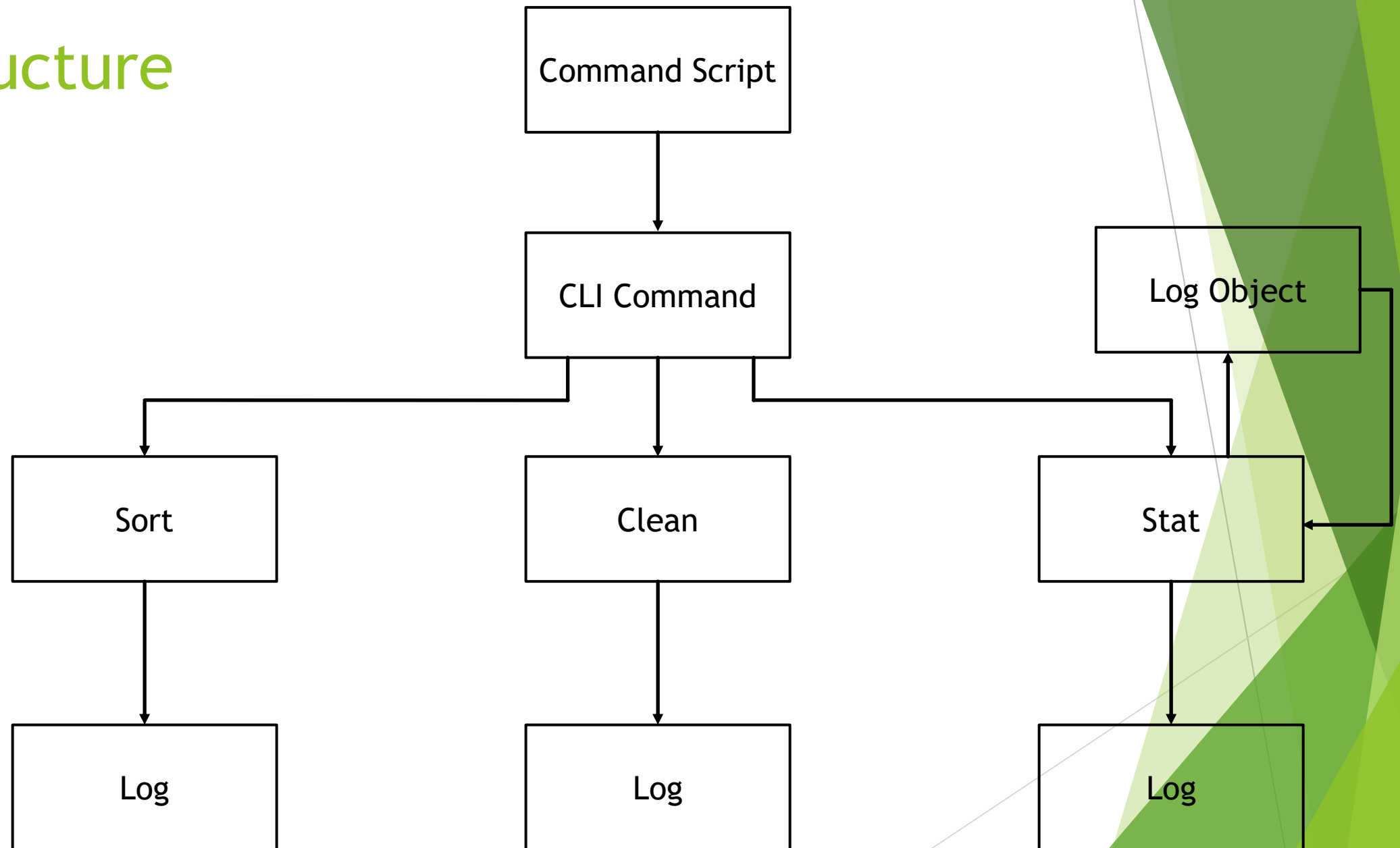
General

- In this exercise 3 commands were implemented to manipulate a file system, and analyze its logs

- Every command outputs a log file that is automatically saved into the log folder in the parent directory

Goals

- Implementation of a command line interface to deal with 3 commands:
  - Sort – Sorts the contents of a directory into sub-directories by file type
  - Clean – Cleans the log folder if there are more than the pre-set amount of logs in it (deletes a pre-set number of logs)
  - Stat – Returns statistics about logs from the 3 commands

Structure

CLI Command

- General parent class for all commands
- Contains methods and parameters that are needed in all 3 commands

Sort Command

- Handles the sort command

- Inherits from the CLI Command class

- Inputs: Path and subfolder in which sorting is done

- Outputs: Python dictionary with the number of files of each type that were sorted (saved in log)

- Instructions:
  - In the command line enter:
    - python SORT.py --p <parent_path> --f <folder_name>

Clean Command

- Handles the clean command
- Inherits from the CLI Command class
- Inputs: Path and subfolder to be cleaned
- Configuration:
  - window_size – number of files (logs) above which deletion begins
  - Deletion_threshold – number of files to delete if deletion is required
- Instructions:
  - In the command line enter:
    - python CLEAN.py --p <parent_path> --f <folder_name>
  - Configuration file can be edited separately

Stat Command

- Handles the stat command
- Inherits from the CLI Command class
- Inputs:
  - Path and subfolder to be cleaned
  - Time stamp (all logs before this time will not be used for stats)
- Output: CSV file with the required outputs (most used command, least used command, most failed command).
  - Saved in the parent directory
- Instructions:
  - In the command line enter:
    - python STAT.py --p <parent_path> --f <folder_name> --t <time_stamp>
  - Time stamp must be entered with the following format: DD/MM/YY HH:MM

Log Object Class

- Handles logs for the stat command
- Inputs: path
- The class reads the log and sets:
  - Command type that the log is associated with
  - Success/failure of the run the log is associated with

Required Improvements

▶ Currently only supports .log files (can be easily expanded to additional files)

▶ Bash script wrappers to avoid use of python scripts by the user

▶ Remove sub-folder/parent-folder distinction in the user input by automatically finding the subfolder from the path

▶ Proper unit testing