Yu Duo Zhang Student ID: 2480549

H25 [420-SF2-RE] Final Project

Scenario:

The project simulates a user-based Todo List management system. Users can log in, create tasks, view existing tasks, and mark them as completed. The system supports two user types (students or guests), and varies the level of access. This helps users organize their daily activities efficiently and prioritizes tasks based on deadlines or urgency.

Functionalities:

The system provides different services based on the user type:

StudentUser

1. Add a new task
2. Mark a task as completed
3. Delete a task
4. Sort tasks by deadline
5. Sort tasks by priority
6. View all tasks
7. Save and load task records
8. Undo and Redo the last action

GuestUser

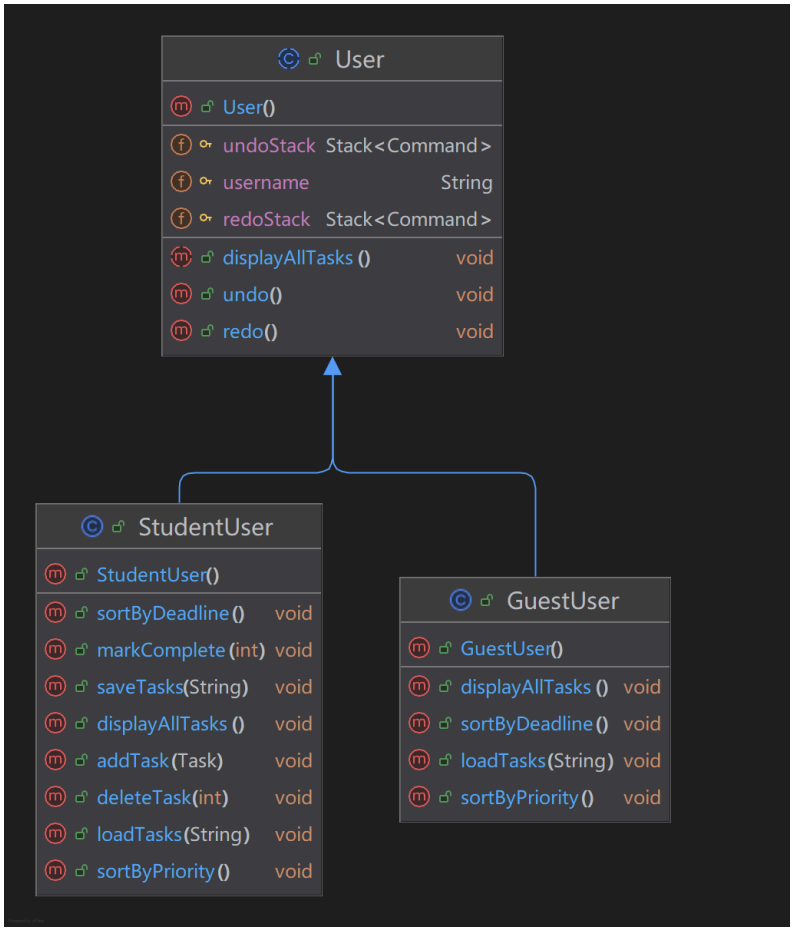
1. View all tasks
2. Load task records
3. Sort tasks by deadline
4. Sort tasks by priority

Implementation Details:

1. addTask(Task task): Adds a new task to the Task list. Can be canceled by undo().
2. markComplete(int index): Set a certain task in the list as complete status to true. Can be canceled by undo().
3. deleteTask(int index): Removes a task from the list. Can be restored by undo().
4. sortByCreationDate: Sort the list by using compareTo() .
5. sortByDeadline(): Sort the list by using DeadlineComparator.

6. sortByPriority(): Sorts the list by using PriorityComparator, which puts urgent tasks before the rest.
7. saveTasks(String filePath): Writes all current task records to a csv file.
8. loadTasks(String filePath): Reads all tasks from a csv file and constructs them into a task list.
9. displayAllTasks(): display on the console all current tasks
10. searchTasks(String Keyword): Using Stream and Lambda Expression to search for tasks with a given keyword.
11. undo(): Pops the most recent command from the undo stack and pushes it to the redo stack.
12. redo(): Pops the most recent command from the redo stack and pushes it back to the undo stack.

Draft UML (Maybe changed during developement):



Yu Duo Zhang Student ID: 2480549