

TO DO LIST

☐ To Do List

☐ ജോലി ചെയ്യാനുള്ള
പട്ടിക

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Java Program

Java Program

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JAVA PROGRAM

To-Do list

Gebril Fares

NHNDZ3

Description:

The To-Do List application helps users organize their tasks by allowing them to add, view, sort, filter, and complete tasks. Users can also save their task lists to a file and load them later to continue where they left off. A progress tracker shows how many tasks are completed, and notifications remind users of tasks due soon.

Features

Task Management:

- Add tasks with:
 - Description
 - Priority (High, Medium, Low)
 - Due date
- Mark tasks as complete or incomplete.
- Remove tasks from the list.
- Sort tasks by priority or due date.
- Filter tasks by priority level.

Data Storage:

- Save tasks to a file to avoid losing them.
- Load tasks from a file when restarting the app.

User Interface and Interactions

Layout:

- Task Input: A text box to enter task descriptions, a dropdown for priority, and a field for the due date.
- Buttons: "Add," "Remove," "Save," "Load," "Sort," "Filter," and "Mark as Completed."
- Task List: A scrollable area displaying all tasks.
- Progress Tracker: A label showing how many tasks are completed.

How to Use

- Add Task: Enter details and click "Add."
- Remove Task: Select a task and click "Remove."
- Save Tasks: Click "Save" to save tasks to a file.

- Load Tasks: Click "Load" to retrieve saved tasks.
- Mark as Completed: Select a task and click "Mark as Completed."
- Sort Tasks: Click "Sort" to organize by priority or due date.
- Filter Tasks: Click "Filter" to see tasks with a specific priority.
- Notifications: Alerts for tasks due in the next 3 days

Sequence Diagrams

1. Adding a Task

- User -> TodoGUI: Enter task details and click "Add"
- TodoGUI -> Task: Create a new Task object
- TodoGUI -> TaskManager: Add the Task object to the task list
- TaskManager -> TodoGUI: Update the GUI with the new task

2. Removing a Task

- User -> TodoGUI: Select a task and click "Remove"
- TodoGUI -> TaskManager: Remove the selected Task object from the task list
- TaskManager -> TodoGUI: Update the GUI to reflect the removed task

3. Saving Tasks

- User -> TodoGUI: Click "Save"
- TodoGUI -> TaskManager: Save the task list to a file
- TaskManager -> File System: Serialize and write tasks to the file

4. Loading Tasks

- User -> TodoGUI: Click "Load"
- TodoGUI -> TaskManager: Load tasks from the file
- TaskManager -> TodoGUI: Update the GUI with loaded tasks

5. Marking a Task as Completed

- User -> TodoGUI: Select a task and click "Mark as Completed"
- TodoGUI -> Task: Toggle the task's completion status
- Task -> TodoGUI: Update the task's status in the list
- TodoGUI -> GUI: Update progress tracker and display change

6. Notifications for Upcoming Tasks

- System -> TaskManager: Check for tasks due within the next three days (background service)
- TaskManager -> TodoGUI: Retrieve upcoming tasks
- TodoGUI -> Notification System: Display reminders in a pop-up dialog box for tasks due soon

Unit Tests

1. Adding a Task

- Confirm that the task count increases after adding a task.
- Validate the task's properties (description, priority, due date).

2. Removing a Task

- Confirm that the task count decreases after removing a task.
- Verify the correct task is removed.

3. Saving Tasks

- Check that tasks are serialized and written to the file correctly.

4. Loading Tasks

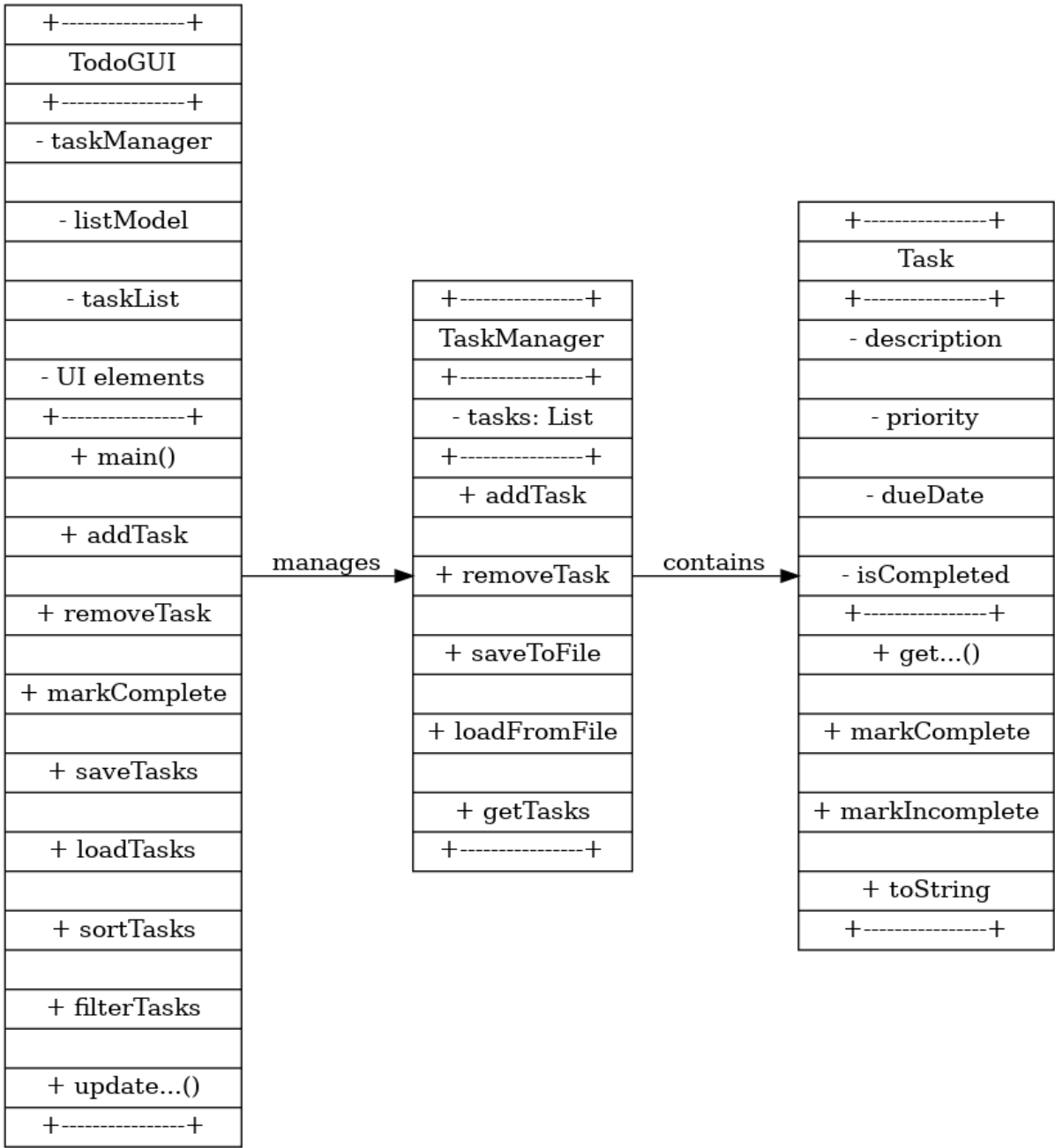
- Ensure that tasks are deserialized and loaded into the app correctly.
- Validate that loaded tasks match the saved state

Conclusion

The To-Do List application is designed to help users manage their tasks easily. It allows users to add, remove, save, and load tasks, as well as sort and filter them based on priority or due date. The progress tracker helps users stay motivated, and notifications remind them of upcoming deadlines. With its simple design and useful features, the app makes staying organized and on track much easier.

Class Diagram and Use-case Diagrams in the next page

Class Diagram



Use-case Diagrams

