Drake's Personal Task Manager Application - Documentation

1. Introduction

This Personal Task Manager is a Java-based application designed to assist users in organizing their daily tasks and managing deadlines efficiently. It provides an intuitive graphical user interface (GUI) for creating, editing, and monitoring tasks.

2. Code Structure

This project consists of three primary classes: PersonalTaskManagerApp, Task, and TaskManager.

3. PersonalTaskManagerApp

The PersonalTaskManagerApp class serves as the entry point for the application. It sets up the Swing GUI and initiates the application. The main method is responsible for launching the GUI using the TaskGUI class.

4. Task

The Task class represents individual tasks within the application. Each task possesses attributes such as a name, description, due date, and completion status. The class includes a constructor for task creation, getters and setters for accessing and modifying task properties, and an overridden toString() method for improved task representation.

5. TaskManager

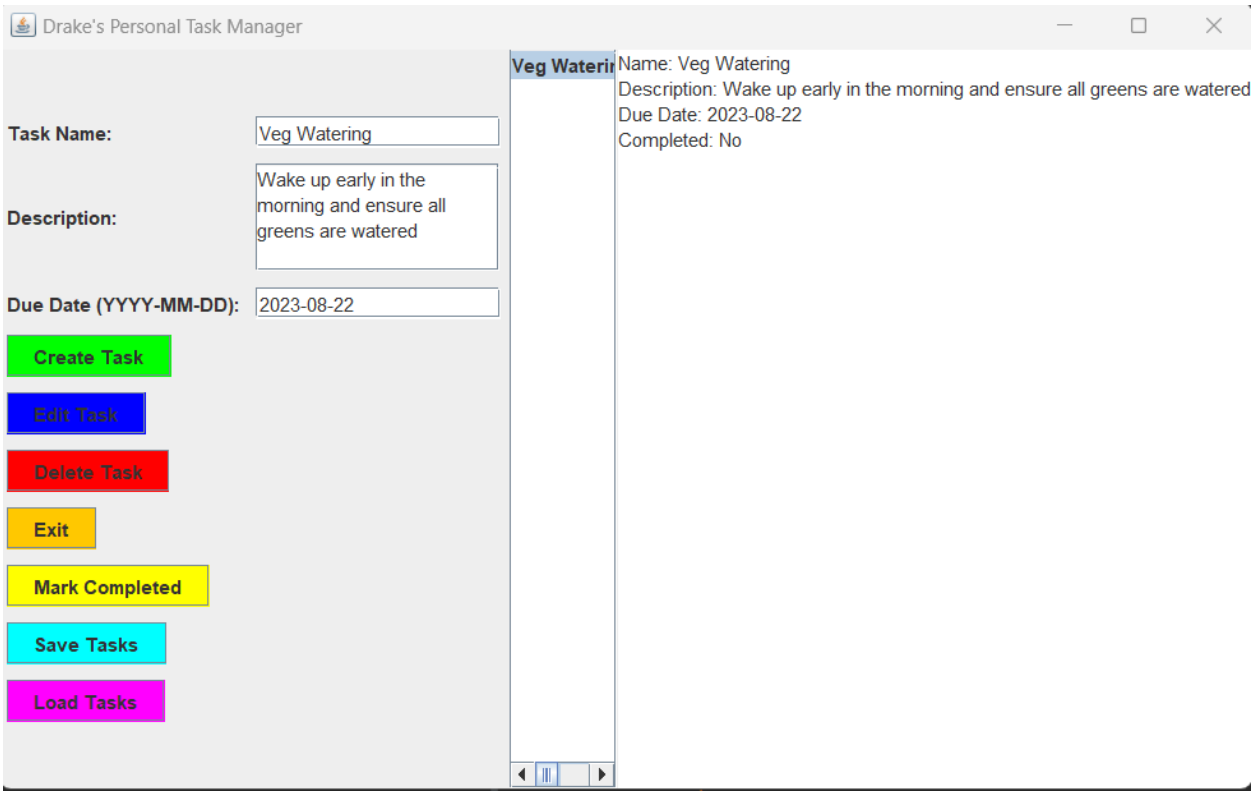
The TaskManager class is responsible for managing tasks. It maintains a list of tasks and provides methods for creating, retrieving, editing, marking as completed, and deleting tasks. The class encapsulates various task-related operations.

6. TaskGUI

The TaskGUI class is the graphical user interface of the application. It creates a user-friendly interface for users to interact with the task management system. The GUI incorporates a task list, input fields for task creation and editing, and buttons for

performing various actions. It includes methods for updating the task list, displaying task details, and clearing input fields.

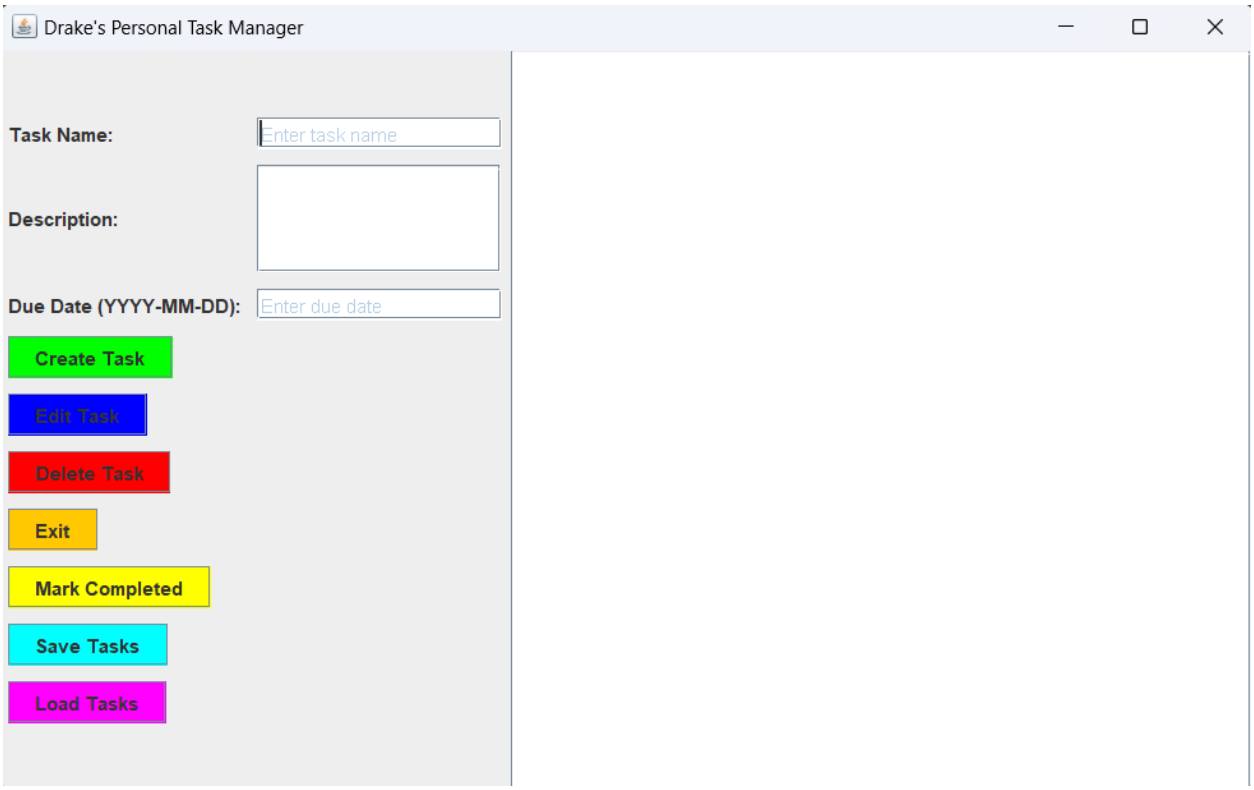
Fig 1. An edit operation in the Application



7. GUI Features

The GUI includes essential features such as task creation, editing, deletion, marking as completed, and a safe exit option. Users can create tasks by providing a name, description, and due date and then clicking the "Create Task" button. To edit a task, users double-click on it to populate the input fields, make modifications, and click the "Edit Task" button. The "Delete Task" button removes selected tasks from the list. Users can mark tasks as completed or not using the "Mark Completed" button. The "Exit" button allows users to safely exit the application while triggering task saving.

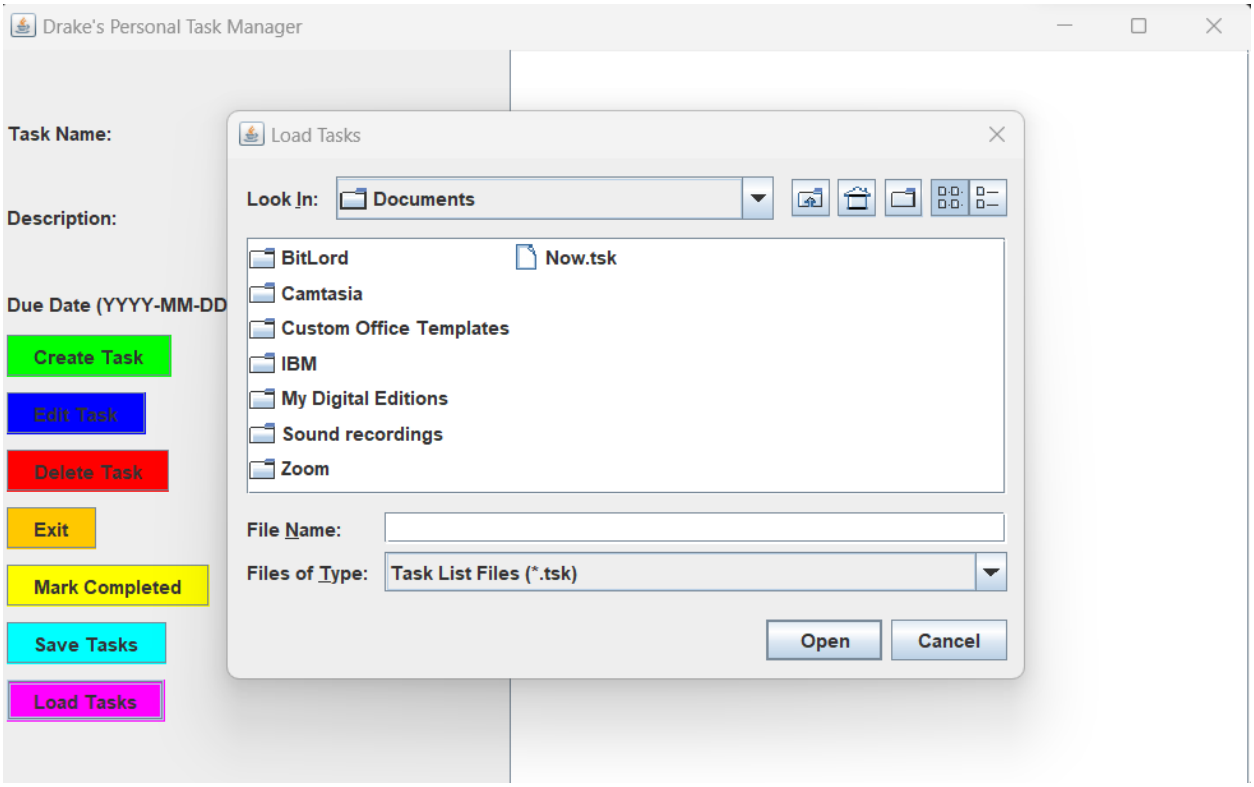
Fig 2. Graphical User Interface (GUI) of the Application



8. File Operations

The application supports saving and loading tasks to and from files. Users can save their tasks to a .tsk file for future reference and load previously saved tasks from such files.

Fig 3. A load Tasks operation in the Application



9. Validation

To ensure data consistency, the application performs validation on date formats during task creation and editing. It also validates task names, ensuring they contain at least one alphabet character for meaningful task identification.

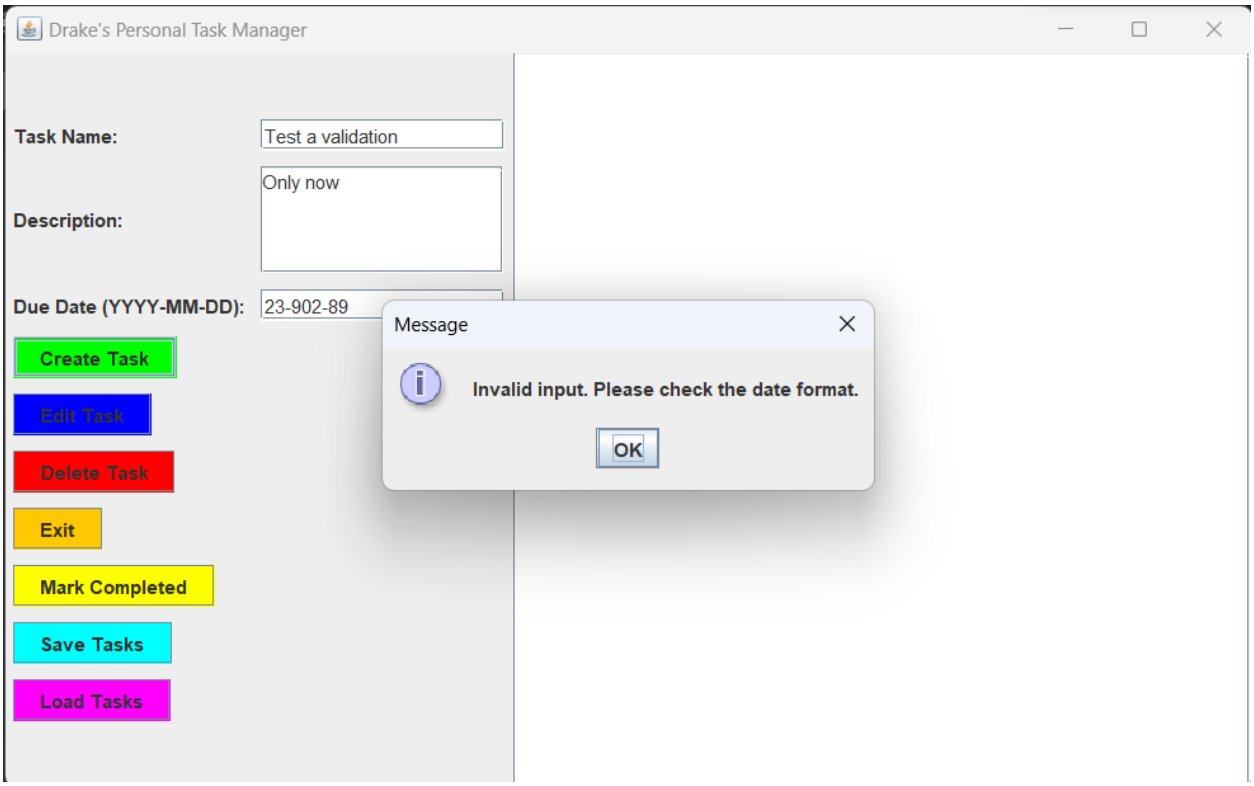
10. Custom PlaceholderTextField

To enhance user experience, a custom PlaceholderTextField class has been implemented. It displays placeholders in text fields, guiding users on what information to provide.

11. Handling Exceptions

The code is equipped to handle exceptions gracefully. When errors occur, informative error messages are displayed to guide users.

Fig 1. An exception handling operation in the Application



12. Conclusion

In conclusion, the Personal Task Manager is a versatile application designed to streamline task management and boost productivity. It offers an easy-to-use interface for efficiently organizing tasks, managing deadlines, and maintaining an organized daily schedule.