

# **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.

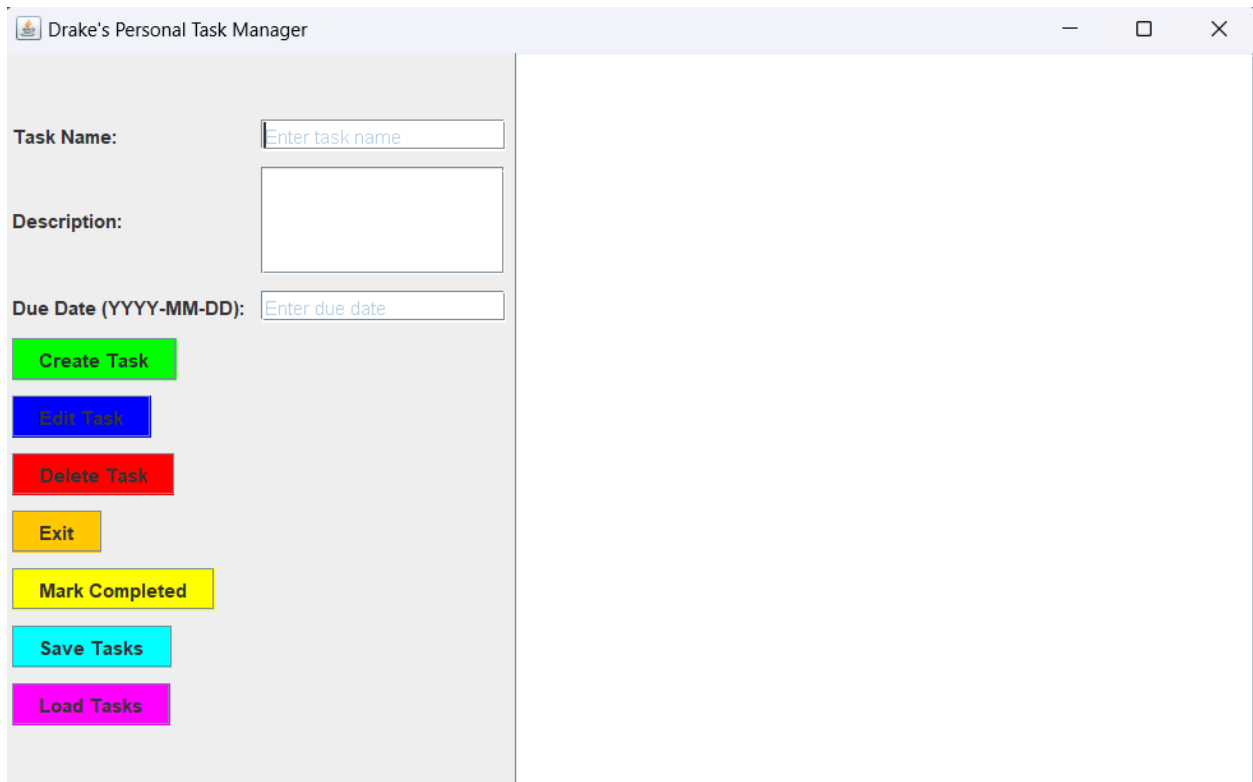
Fig 1. An edit operation in the Application

The screenshot displays a window titled "Drake's Personal Task Manager". On the left side, there is a form for editing a task. The form includes three input fields: "Task Name:" with the value "Veg Watering", "Description:" with the value "Wake up early in the morning and ensure all greens are watered", and "Due Date (YYYY-MM-DD):" with the value "2023-08-22". Below these fields is a vertical stack of seven buttons: "Create Task" (green), "Edit Task" (blue), "Delete Task" (red), "Exit" (orange), "Mark Completed" (yellow), "Save Tasks" (cyan), and "Load Tasks" (magenta). On the right side of the window, a task detail panel is visible. It has a header "Veg Watering" and displays the following information: "Name: Veg Watering", "Description: Wake up early in the morning and ensure all greens are watered", "Due Date: 2023-08-22", and "Completed: No". The window has standard Windows-style window controls (minimize, maximize, close) in the top right corner.

## 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



The screenshot displays the graphical user interface (GUI) of an application titled "Drake's Personal Task Manager". The interface is divided into two main sections. The left section contains input fields and action buttons. The right section is currently empty, likely reserved for a task list.

**Input Fields:**

- Task Name:** A text input field with the placeholder text "Enter task name".
- Description:** A larger text input field.
- Due Date (YYYY-MM-DD):** A text input field with the placeholder text "Enter due date".

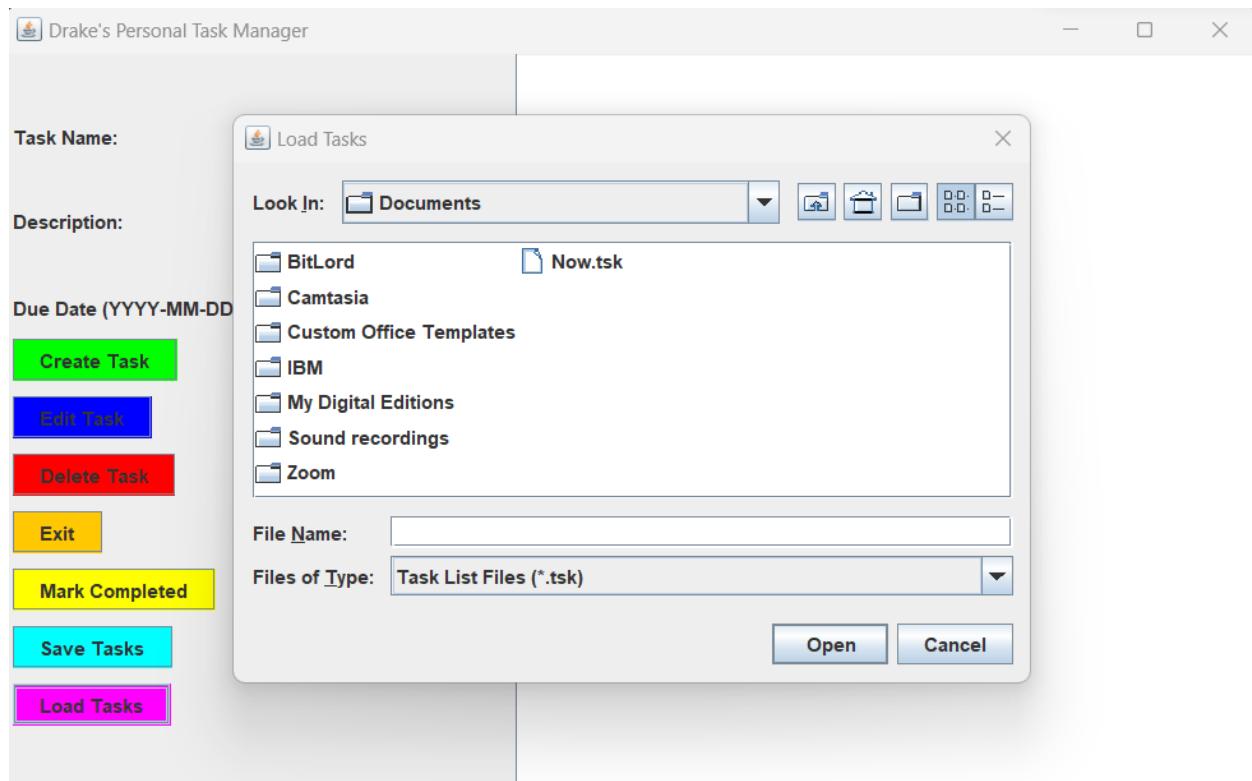
**Action Buttons:**

- Create Task:** A green button.
- Edit Task:** A blue button.
- Delete Task:** A red button.
- Exit:** An orange button.
- Mark Completed:** A yellow button.
- Save Tasks:** A cyan button.
- Load Tasks:** A magenta button.

## 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.

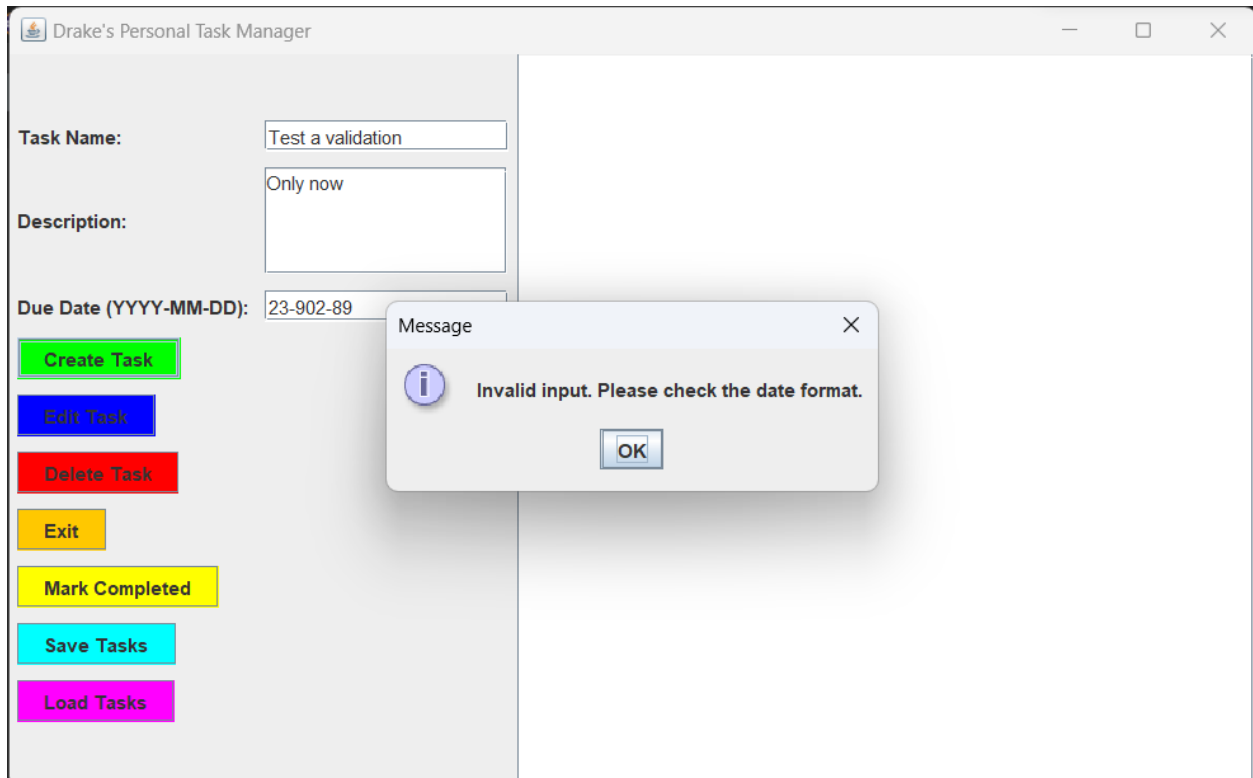
## 10. Custom PlaceholderTextField

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.