

Digital Diary

Introduction

Jack is someone who writes very frequently; each day, he spends 10 minutes of his morning writing down his thoughts. Suddenly, on a random Tuesday morning, Jack wakes up to find his diary missing! It was eaten by his pet dog, Sparky.

This is where you come in (yes, you). You are tasked with creating a digital diary that Jack can use to write down his thoughts without worrying that Sparky might eat it again. The goal of this assignment is to develop a user-friendly and secure application that allows users to document their personal experiences while ensuring their entries are private and easily accessible.

Objectives:

- To create an application that emphasizes **user privacy**, ensuring that each user can only access their own diary entries.
- To implement essential **features** such as user authentication, diary entry creation, image uploads, search functionality, and data persistence using File I/O.
- To explore additional features that enhance user experience, such as mood tracking and entry exportation to PDF format.

Development Tools:

- You can choose between **JavaFX** and **Swing** for creating the Graphical User Interface (GUI). JavaFX provides a modern approach with rich graphics capabilities, while Swing offers a simpler setup for basic GUI development.
- For data storage and management, you will be using **CSV files** to store user details and diary entries. Familiarize yourself with **File I/O** operations in Java to effectively read from and write to these files.

Collaboration and Version Control:

- It is recommended to use **Git** for version control throughout the development process. Create a shared repository where team members can push their changes, manage branches, and track issues. This will facilitate collaboration and ensure everyone is on the same page.

- Regularly commit your changes with clear messages to maintain a good history of development progress.

User Experience Considerations:

- Focus on designing an intuitive interface that allows users to navigate the application effortlessly. Ensure that actions like logging in, creating entries, and searching are straightforward and user-friendly.
- Test the application thoroughly for bugs and usability issues. Gather feedback from peers to identify areas for improvement.

Basic Features (8 marks) :

These are the basic functionalities that your program is required to have, skipping any means also skipping marks to be obtained here (don't, it's doable you got this!).

Features	Description	Suggestions
User login and registration (1 mark)	<p>New users are able to register with (username, email and password)</p> <p>Users that have registered, their details will be stored locally.</p> <p>Registered users are able to log in using their email OR username and password.</p>	How the sign up details will be stored will be totally up to you. There is no specific storage format for this, however it must be easy to comprehend and readable similar to JSON/XML & etc.
Diary Entry Creation and Editing (2 mark)	<p>Users are able to create new diary entry with attributes (date, title and content).</p> <p>Users are also able to edit existing diary entries or they can delete existing diary entries.</p>	<p>While this program is possible to be created in the CLI, I recommend you take up the challenge to use GUI (Graphical User Interface).</p> <p>It will make the program more convenient to use and it will equip you in skills for JavaFX or Swing (depends on your choosing).</p>

	Deleted entries are stored in a temporary recycle bin for 30 days & can be retrieved if the user wants. Otherwise, the entries are deleted permanently.	
Upload images (1 mark)	Users are able to upload images into their diary entries.	Recommend to implement using GUI for more user friendly usage of this feature.
Search Functionality (2 mark)	<p>You are required to integrate search functionality.</p> <p>This search function allows users to search through all of their entries for the searched keywords.</p>	<p>Since you have stored all the entries locally to a text or CSV file, by utilizing File IO you are able to add this function.</p> <p>However, it does require some deep understanding into how File IO works before attempting to execute this feature.</p>
Saving Entries (2 mark)	<p>All entries must be saved to a CSV file locally, this is to ensure each user is still able to retrieve entries even after the application closes.</p> <p>Create a functionality that is able to load entries from the locally saved file upon application startup.</p>	This too requires a deep knowledge in File IO, especially exporting it to a CSV file since you will be expected to deal with a number of entries from multiple users.

Important reminder: Each user has their own sets of entries, for example, Ali and Adam have separately put their entries on their respective accounts. Ali's entries must not appear in Adam's list of entries and vice versa. Since this is a diary program you must understand there is a specific need for privacy among the different users.

Additional Features (4 marks max):

These features may look scary at first but trust me, with a little studying and research it is very much doable. Every mark counts, you got this guys! <3

Features	Description	Suggestions
Implement a Graphical User Interface (GUI) (2 marks)	A Graphical User Interface (GUI) allows users to interact with the application using visual components like buttons, text fields, and menus, rather than typing commands in a console.	You can use JavaFX or Swing to create the GUI.
Mood indicator (1 mark)	Users are able to select mood when creating a diary entry. (0.5 mark) Create a page where users are able to track their mood over a custom period of time. (0.5 mark)	Provide options such as happy, sad, or neutral through radio buttons or dropdown menus. Use charts or graphs to visualize mood changes over time. Consider allowing users to filter by specific date ranges.
Export diary entries (1 mark)	Users are able to export diary entries in the form of PDF for printing, in case users prefer their diaries physically on papers. Export must be done by duration (day/week/month)	Use libraries like iText or Apache PDFBox to create PDF files. Ensure to format the diary entries neatly in the PDF. Provide options to select specific entries or date ranges for export. Include error handling for file operations.
Entry date sorting (1 marks)	Users are able to sort their diary entries based on entry dates. Users are able	Implement sorting functionality that allows users to sort entries in

	to view their entries chronologically.	ascending or descending order. Use a calendar view for easy navigation
Motivational quotes (1 mark)	<p>Depending on the mood recorded by the user, it displays motivational quotes at the diary entry page.</p> <p>For example, if a user recorded their mood to be “sad”, it displays quotes based on sadness.</p>	An idea to implement this is each mood can have its own text file containing quotes, which can be read into the program using File I/O.

Sample input/output

Do note that these samples are mere examples to give you an idea of how this program is supposed to look, do not restrict yourself to these examples and feel free to use your creativity however you like based on the guidelines we've provided. These samples consists of examples using the Command Line Interface (CLI) and Graphical User Interface (GUI),

Registration & Login

(CLI example)

```
=====
Welcome to e-Diary
=====

Register a New User:
-----

Username: johnDoe
Email: john@example.com
Password: *****

Registration successful! Welcome, johnDoe!
```

```
=====
Welcome to e-Diary
=====

Register a New User:
-----

Username: johnDoe
Email: john@example.com
Password: *****

Registration successful! Welcome, johnDoe!
```

Diary Entry Creation & Editing

(CLI example)

```
=====
                Create New Diary Entry
=====

Date (YYYY-MM-DD): 2024-10-12
Title: First Day at Work
Content: Today was my first day at work. It was an exciting and
nerve-wracking experience!

Mood (Happy/Neutral/Sad): Happy

Diary entry created successfully!
```

Search Entries

(CLI example)

```
=====
                Search Diary Entries
=====

Enter a keyword to search: work

Search Results:
-----
Date: 2024-10-12
Title: First Day at Work
Content: Today was my first day at work. It was an exciting and
nerve-wracking experience!
```

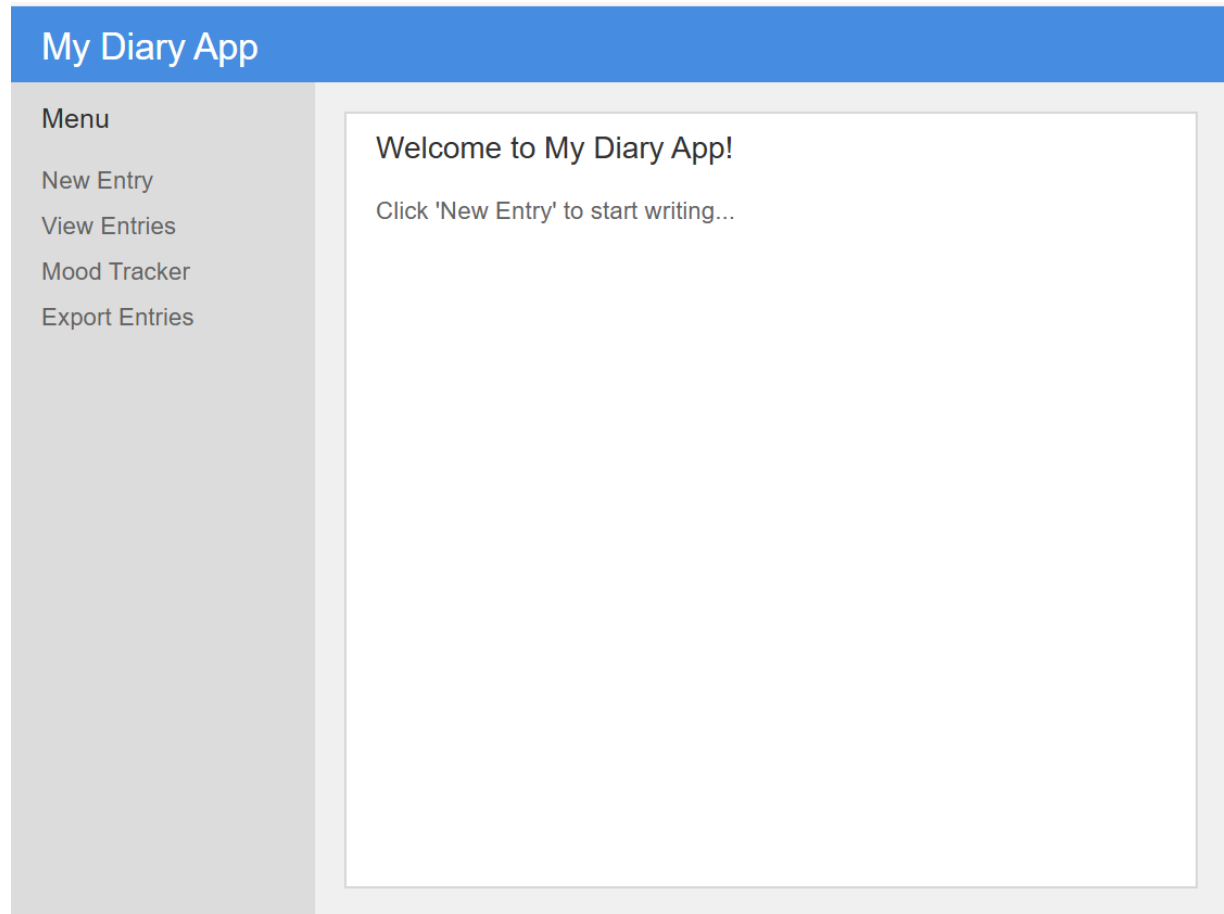
Saving Entries

(CLI example)

```
All diary entries saved successfully to local CSV file.
Total entries saved: 5
File location: C:\Users\johndoe\Documents\MyDiaryApp\entries.csv
```

GUI Example:

This is just an example, please follow all of the guidelines provided and include all your features according to the marks allocated.



How are you feeling today?



Happy

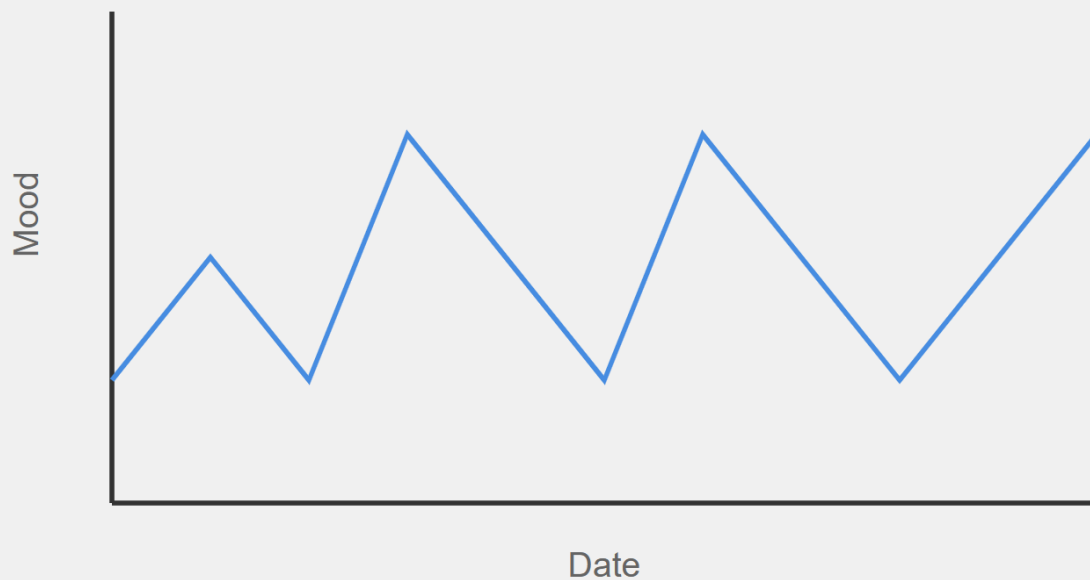


Neutral



Sad

Mood Tracker: Last 30 Days



Contact Information:

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