CEBU INSTITUTE OF TECHNOLOGY
UNIVERSITY

IT342-Section SYSTEMS INTEGRATION AND ARCHITECTURE 1

FUNCTIONAL REQUIREMENTS SPECIFICATION (FRS)

Project Title: Whimz

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Date of Submission:

Version:

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- ## Introduction

a. Purpose

The purpose of this system is to provide a digital sanctuary for "junk journaling," allowing users to capture fleeting thoughts, memories, and artistic expressions in a non-linear, whimsical environment. Unlike traditional note-taking apps, this system prioritizes visual aesthetics and creative freedom.

The intended audience for this document includes developers, UI/UX designers, and stakeholders involved in the initial build of the Whimz MVP.

b. Scope

Whimz is a creative tool centered on non-linear digital scrapbooking. The system includes user authentication (registration and login) and a centralized dashboard called the Whimboard. Users are provided with a default "Bondpaper" for quick, freeform entries and the ability to create, name, and manage multiple digital notebooks.

The core functionality allows users to customize pages by inserting and manipulating images, text, and digital stickers, as well as utilizing a freehand drawing tool. The system boundaries are limited to creating, editing, and deleting these notebooks; social networking features and advanced image processing are excluded from this version.

c. Definitions, Acronyms, and Abbreviations

- **MVP:** Minimum Viable Product; the initial version of the app containing only essential features.
- **Whimboard:** The primary dashboard where users manage their notebooks and quick-entry canvas.
- **Bondpaper:** A default, single-page canvas for immediate freeform journaling.
- **Scraps:** Generic term for all media types (images, stickers, text) added to a journal page.
- **Freeform:** A flexible layout system allowing users to place and layer elements without a fixed grid.

- ## Overall Description

a. System Perspective

Whimz is a standalone creative tool designed to bridge the gap between traditional tactile scrapbooking and digital note-taking. While it functions as an independent application, it fits into the broader personal productivity and "digital wellness" ecosystem. The system interacts with the user's device storage for media uploads (images and stickers) and relies on a cloud-based database for user authentication and data persistence, ensuring that journals are accessible across different sessions.

b. User Classes and Characteristics

The system identifies two primary user categories:

1. **Casual Journalers:** Individuals seeking a quick, low-pressure way to record daily moods or thoughts on the "Bondpaper" canvas. These users require a simple, intuitive interface with minimal learning curves.
2. **Creative Hobbyists:** Users who utilize the notebook feature for long-term projects. These users possess higher technical engagement, frequently using layering, drawing tools, and multi-page management to create complex visual layouts.

c. Operating Environment

To ensure cross-platform accessibility, the system is designed to operate within the following environments:

- **Hardware:** Optimized for smartphones and tablets to support touch-based drawing and placement, though also functional on standard desktops.
- **Software:** Compatible with modern web browsers (Chrome, Safari, Firefox) and mobile operating systems (iOS 15+ and Android 10+).
- **Tools:** The application requires an internet connection for account synchronization and access to the cloud-hosted sticker repository.

d. Assumptions and Dependencies

The development and operation of **Whimz** are based on the following:

- **Assumptions:** It is assumed that users have basic familiarity with touch-screen gestures (drag-and-drop, pinch-to-zoom) for manipulating canvas elements. It is also assumed that users will provide their own image assets for personalized journaling.
- **Dependencies:** The system is dependent on a reliable third-party cloud service (such as Firebase or AWS) for user authentication and the storage of notebook data. The drawing functionality depends on the device's ability to process real-time input via a stylus or fingertip.

System Features and Functional Requirements

Describe each major feature of the system and its functional requirements.

a. Feature 1: User Authentication and Account Management

Description: A secure gateway that allows users to create personalized accounts to save and sync their journaling progress across sessions.
Functional Requirements:
- The system shall allow new users to register using an email and password.
- The system shall verify credentials during login and maintain a persistent user session.
- The system shall provide a logout function to secure user data.

b. Feature 2: The Whimboard (Dashboard)

Description: The central navigation hub where users manage their quick-entry canvas and their collection of notebooks.

Functional Requirements:
- The system shall allow users to create up to five (5) individual Bondpapers for freeform journaling.
- The system shall prevent the creation of a 6th Bondpaper until one of the existing five is deleted.
- The system shall display a distinct section for Notebooks, allowing users to create multi-page journals with custom titles.
- The Whimboard shall provide a visual preview (thumbnail) of each Bondpaper and Notebook cover.

c. Feature 3: Freeform Journal Editor

Description: A creative workspace where users can design pages using various digital elements and manual drawing tools.
Functional Requirements:
- The system shall allow users to upload and place images from their device gallery onto the canvas.
- The system shall provide a text tool for users to type, move, and edit notes..
- The system shall include a "Sticker Tray" where users can select and insert pre-loaded digital stickers.
- The system shall provide a freehand drawing tool with basic brush and eraser functions.
- The system shall allow users to drag, resize, and layer all elements (images, text, stickers) anywhere on the page.

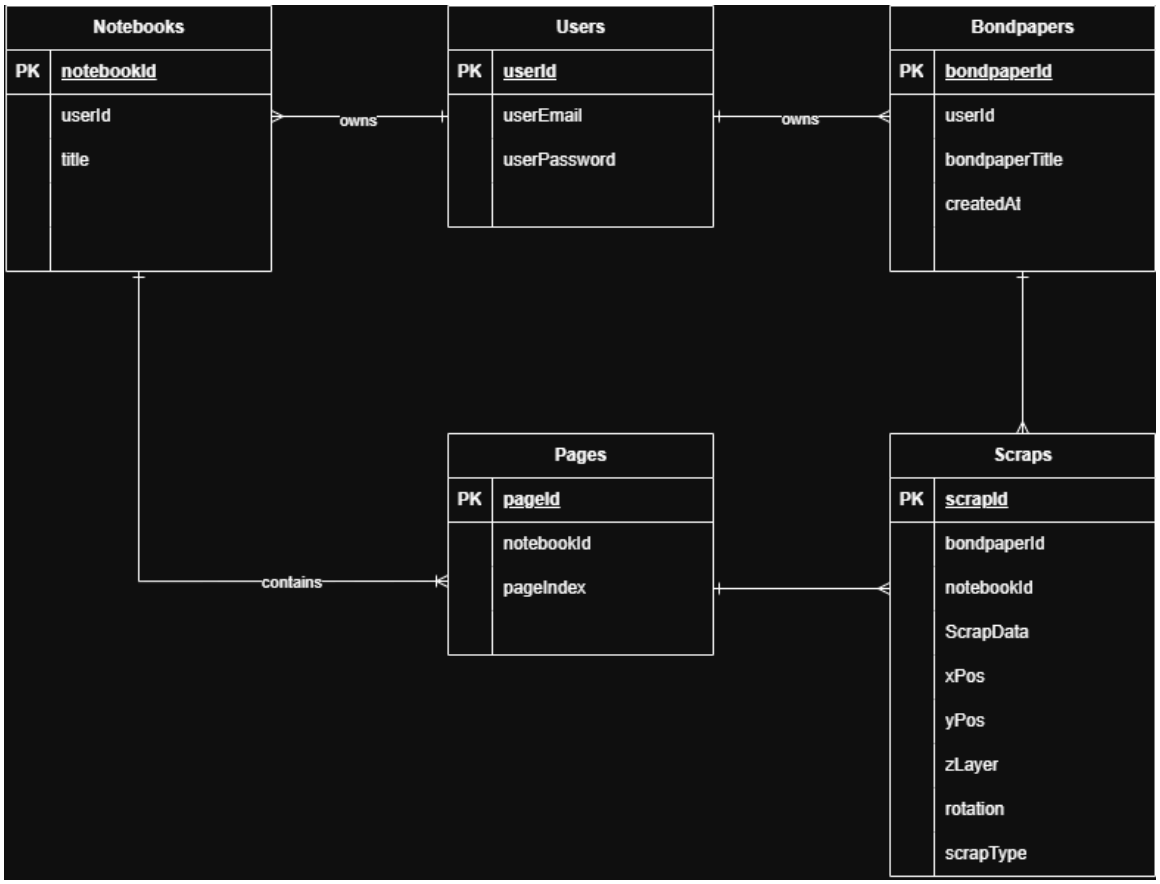
Non-Functional Requirements

- **Usability:** The interface must be intuitive, requiring no more than three taps to reach the primary editing workspace from the login screen. The design should prioritize a "whimsical" aesthetic without sacrificing clarity.
- **Performance:** The application should load the Whimboard in under 3 seconds. The canvas must respond to touch inputs (dragging and drawing) with minimal latency to ensure a fluid creative experience.
- **Security:** All user passwords must be encrypted before being stored in the database. Users should only be able to access, edit, or delete notebooks associated with their specific account ID.
- **Reliability:** The system shall automatically save changes made to the "Bondpaper" or notebooks every 30 seconds to prevent data loss in the event of a crash or connection failure.

System Models (Diagrams)

Insert the necessary diagrams for the system:

a. ERD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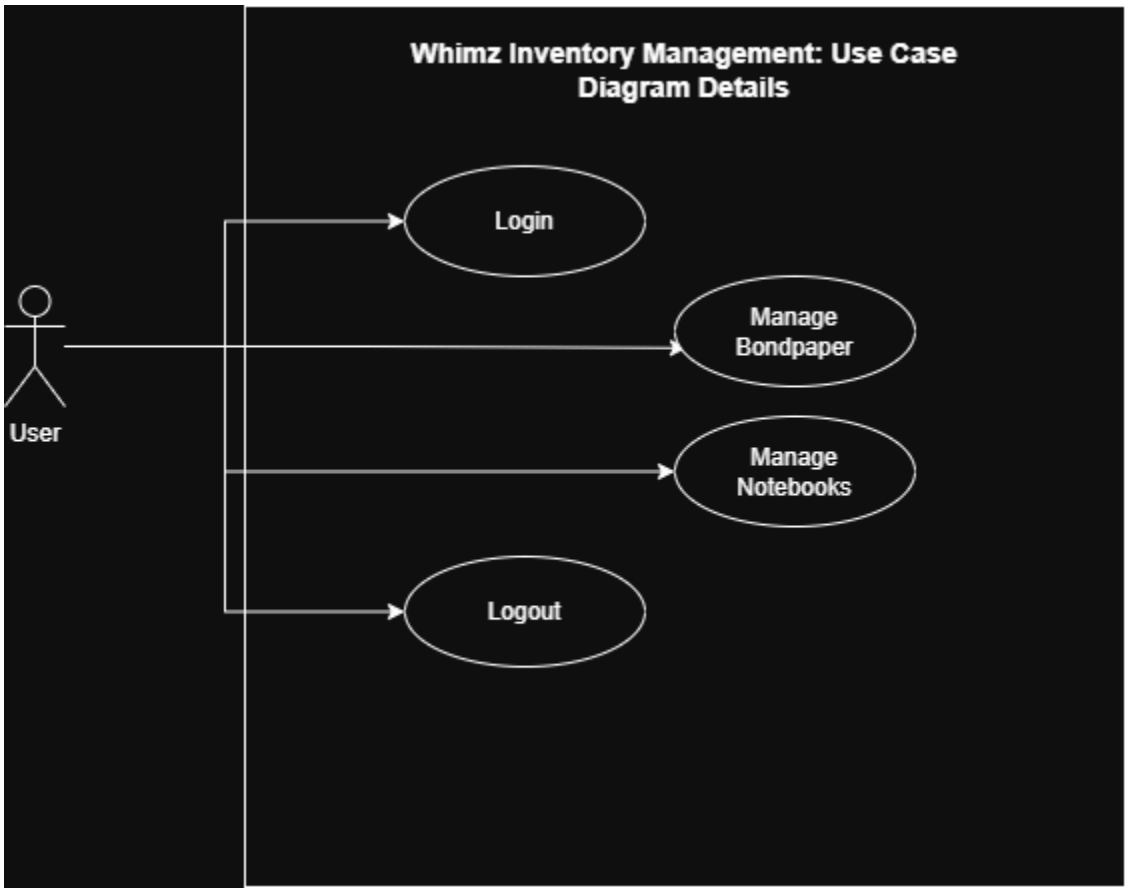
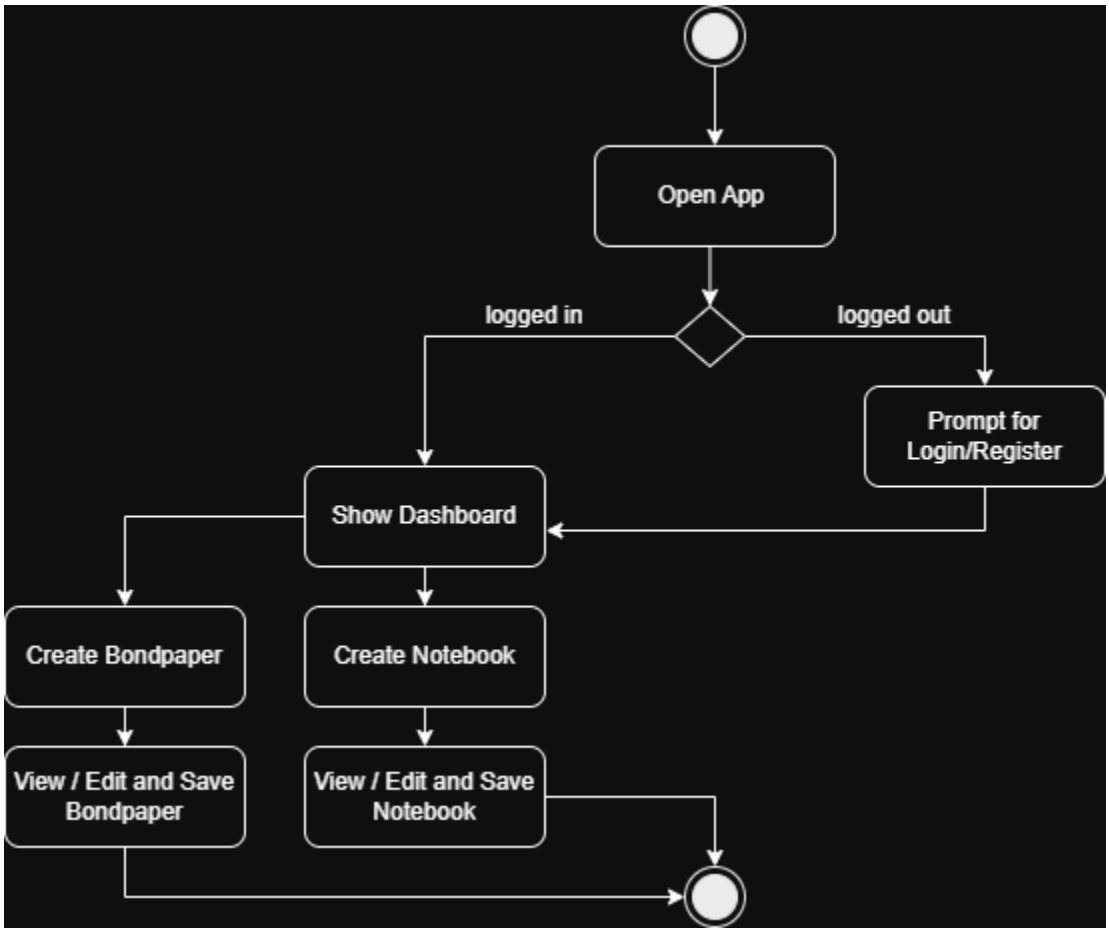
scrapType

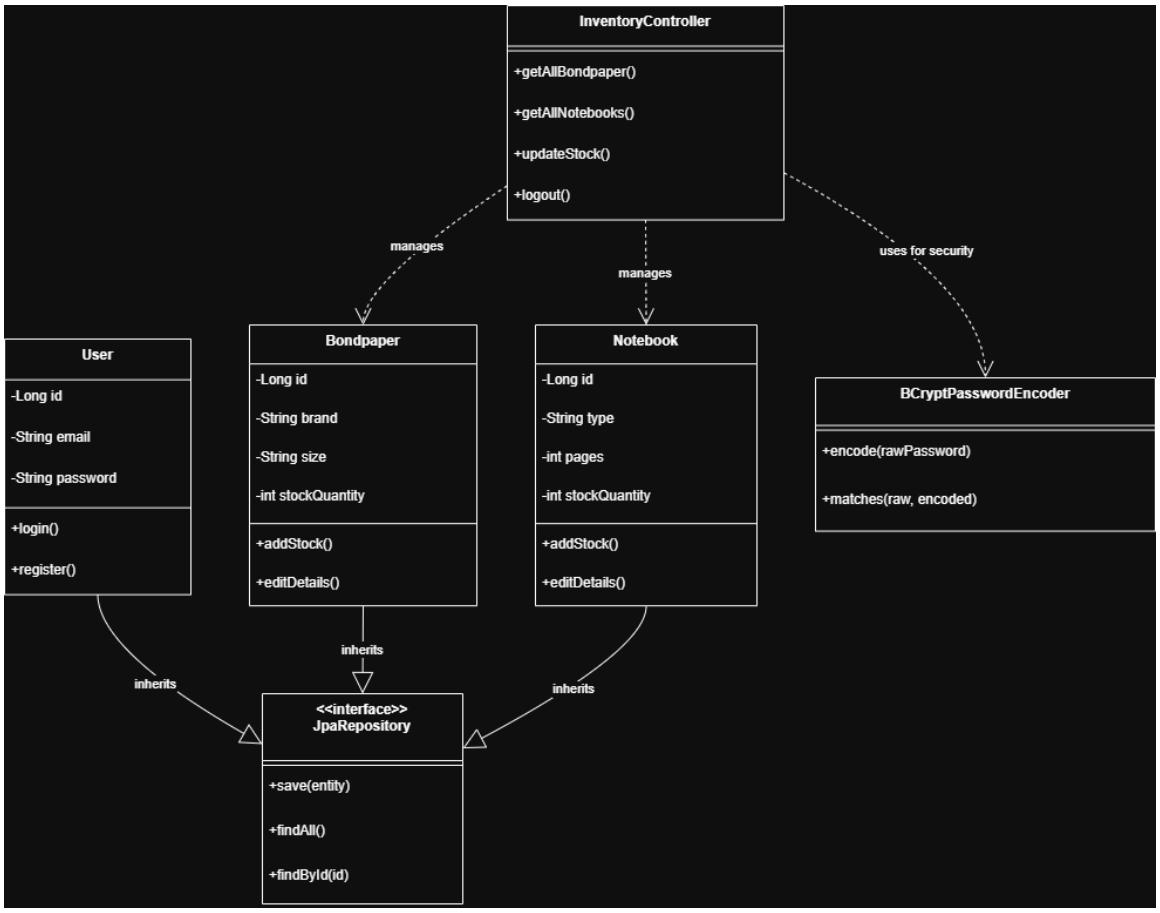
b. Use Case Diagram



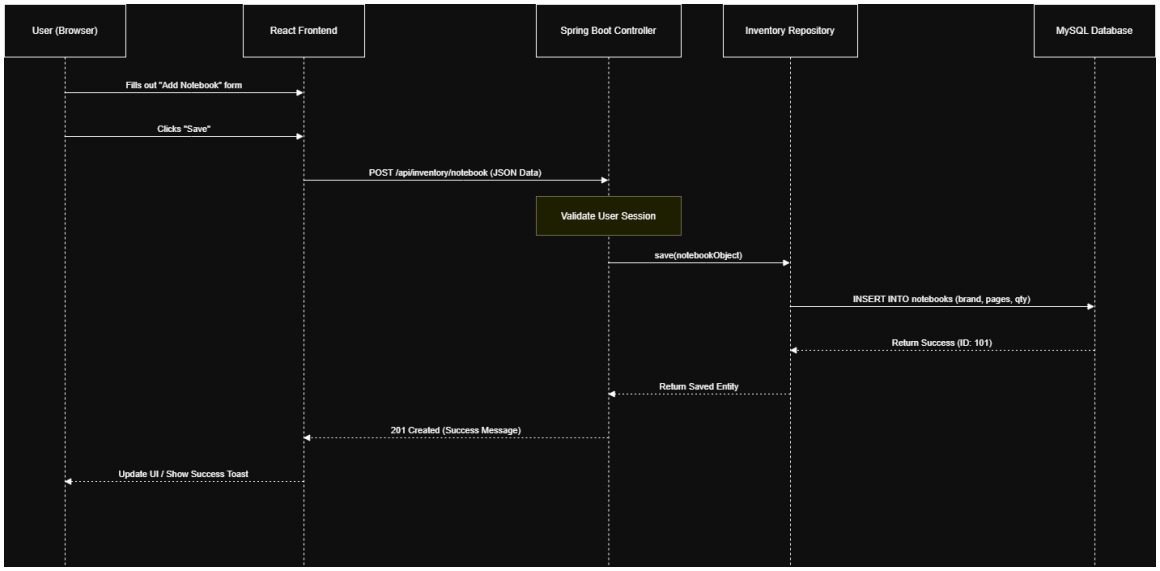
c. Activity Diagram



d. Class Diagram



e. Sequence Diagram



Appendices

Appendix A: Glossary of Terms

- BCrypt: A password-hashing function used to secure user credentials before storing them in the database.
- CRUD: Stands for Create, Read, Update, and Delete—the four basic functions of persistent storage.
- JPA (Java Persistence API): A Java specification used to manage relational data in Spring Boot applications.
- JWT (JSON Web Token): (If implemented) A compact, URL-safe means of representing claims to be transferred between two parties.
- REST API: An architectural style for an application program interface (API) that uses HTTP requests to access and use data.

Appendix B: Database Schema

Table: users

- id (BIGINT, Primary Key, Auto-increment)
- email (VARCHAR, Unique)
- password (VARCHAR, Hashed via BCrypt)

Table: inventory_items (Bondpaper/Notebooks)

- item_id (BIGINT, Primary Key)
- category (VARCHAR: "Bondpaper" or "Notebook")
- brand (VARCHAR)
- stock_quantity (INT)
- price (DECIMAL)

Appendix C: Tools and Technologies Used

A list of the software versions used to build the lab.

- Frontend: React.js (v18+)
- Backend: Spring Boot (v3.x) with Maven
- Database: MySQL (v8.0)
- Diagramming: Draw.io / Mermaid.js
- IDE: Visual Studio Code / IntelliJ IDEA