
LibraLink - Revolutionizing the Library Experience

Introduction

In an era of technological advancements, the LibraLink project aims to revolutionize the library experience at NIT Patna. This innovative application seeks to bridge the gap between traditional library services and modern digital convenience. By introducing a phased approach, the project endeavors to provide users with an efficient solution for book tracking, due date management, and resource access. This README outlines the motivation, objectives, and scope of the project, offering insights into how LibraLink can reshape the way our library operates and caters to users' needs.

Motivation

Libraries have always been a treasure trove of knowledge, but in today's fast-paced digital world, they need to adapt and offer a more user-centric experience. The motivation behind LibraLink is to enhance the library experience for NIT Patna students and staff, making it easier to access and manage resources.

Objectives

Phase 1:

- **Manual book entry:** Users can manually add books to their profile.
- **Lent book status tracking:** Keep track of borrowed books and their due dates.
- **Push notifications for due dates:** Get reminders for returning books on time.
- **User history:** Access a history of borrowed books and interactions.
- **Static shelf location maps:** Find books easily with static location maps.
- **Integration with external e-library platforms:** Access digital resources seamlessly.

Phase 2 (Future):

- **Automation of book entry:** Streamline the process of adding new books.
- **Real-time status updates:** Know the availability of books instantly.

Scope

The scope of the LibraLink project encompasses the development of a user-centric library application in two distinct phases:

Phase 1

Phase 1 focuses on creating a foundation for the project with the following features: -

Manual book entry: Users can manually add books to their profile, making it easy to keep a personal library. - **Lent book status tracking:** Keep track of books you've borrowed, their due dates, and the status of your returns. - **Push notifications for due dates:** Receive reminders about upcoming due dates to avoid late fees. - **User history:** Access a history of borrowed books and interactions with the library. - **Static shelf location maps:** Find books easily with static location maps. - **Integration with external e-library platforms:** Seamlessly access digital resources from external platforms.

Phase 2 (Future)

In Phase 2, we plan to take our library experience to the next level: - **Automation of book entry:** Streamline the process of adding new books to the library catalog. - **Real-time status updates:** Know the availability of books in real-time, ensuring you find what you need. - **Automated reminders:** Receive automated reminders for overdue books, making book management hassle-free.

The project's primary focus is to enhance user interactions, optimize book management, and create a seamless bridge between traditional library services and cutting-edge technology.

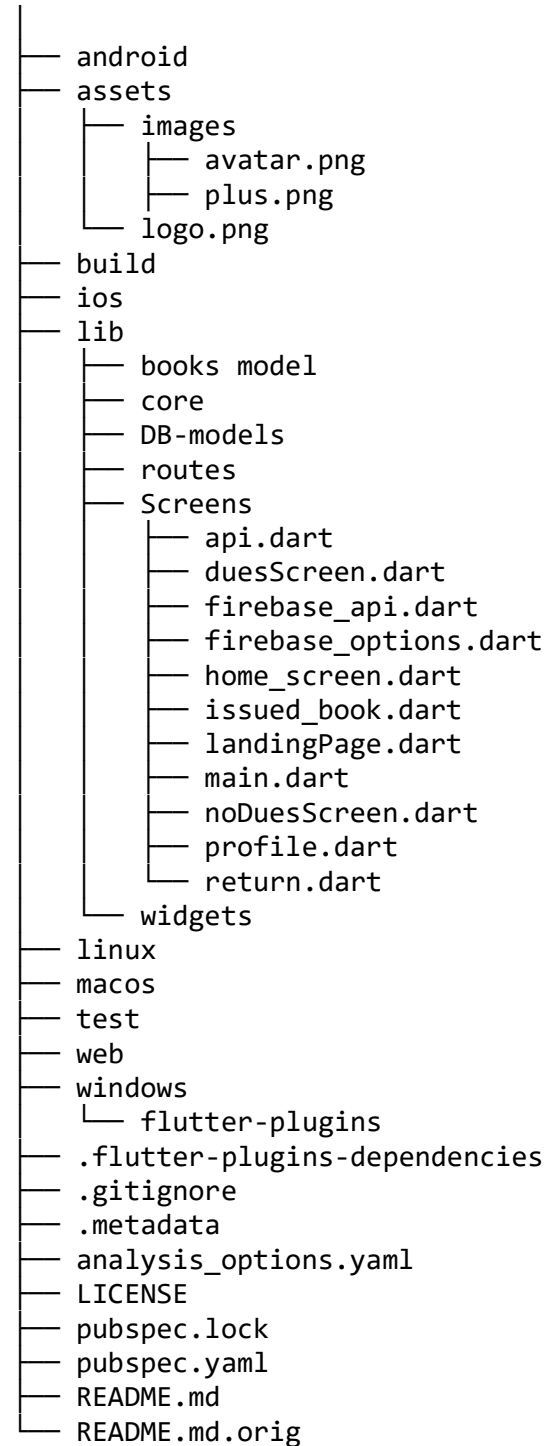
Technologies Used

- **Frontend:**
 - Flutter
- **Backend:**
 - Firebase

Project Structure

The project structure for LibraLink is organized as follows:

LibraLink



Key Components

Screens

- **api.dart:** Handles API integration for the application.
- **duesScreen.dart:** Displays books that are due for return.
- **firebase_api.dart:** Manages interactions with Firebase.
- **firebase_options.dart:** Configures Firebase options.
- **home_screen.dart:** The main screen of the application.
- **issued_book.dart:** Displays issued books.
- **landingPage.dart:** The landing page of the application.
- **main.dart:** The main entry point of the application.
- **noDuesScreen.dart:** Displays books with no dues.
- **profile.dart:** User profile management.
- **return.dart:** Manages book return process.

Assets

- **images:** Contains image assets used in the application.

Dependencies

The project makes use of various dependencies to enhance functionality, including:

- **cloud_firestore:** For Firebase Firestore integration.
- **firebase_auth:** For Firebase Authentication.
- **firebase_core:** Core Firebase functionalities.
- **firebase_messaging:** For push notifications.
- **firebase_storage:** For Firebase Storage.
- **flutter_local_notifications:** For local notifications.
- **fluttertoast:** For displaying toast messages.
- **image_picker:** For image picking functionality.
- **intl:** For internationalization support.
- **lottie:** For Lottie animations.
- **path_provider:** For accessing the file system.
- **permission_handler:** For handling permissions.

Setup Instructions

To set up the project, follow these steps:

1. **Clone the repository:**

```
git clone https://github.com/HackSlashNITP/LibraLink
```

2. **Navigate to the project directory:**

```
cd Libralink
```

3. **Install dependencies:**

```
flutter pub get
```

4. **Run the application:**

```
flutter run
```