

# Software Requirements Specification

Group 3 : BookMyPass

## 1 Introduction

### 1.1 Product Overview

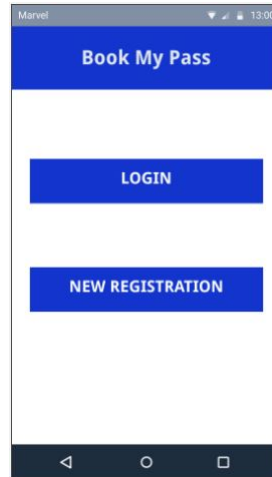
This project will help to digitize and automate the process of applying for railway concession. The current system requires any person to first avail a form from the college, fill it and then again stand in long queues to verify the same at the college and then issue the pass at the pass issue counter at the railway station. The user initially will have to create an account during which the user will have to fill all the details including a unique college code/verification ID. Now, the user needs to apply for the concession by filling in other details such as starting point of the journey, destination, duration of the pass, class of travel, etc. Now, these details entered by the user will be verified with the college database. Once the student data is verified by the college, the request is sent to the railways system for granting concession. The railways would enable the payment service for user to pay the charges for the pass. Once the payment is done, digital pass is generated and sent to the user on the app. If the current pass is about to expire in a few days, a reminder is sent to the user to reapply for the pass.

## 2 Specific Requirements

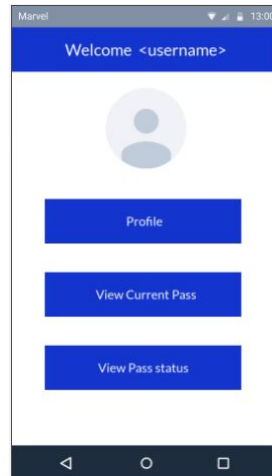
### 2.1 External Interface Requirements

#### 2.1.1 User Interfaces

Login/Registration Screen Layout:



Homepage Screen Layout



Profile View Screen Layout

Marvel 13:00

### MY PROFILE

Student's Name  
John Wanton Doe

Institute Name  
K.J Somaiya College of Engineering

Institute Code  
KJ2340

Region of Institute  
Mumbai

Student ID  
17140xx

**EDIT PROFILE**

Registration Screen Layout 1

Marvel 13:00

### REGISTRATION

Enter Student's Name as per Institute Records  
John Wanton Doe

Enter Institute Name  
K.J Somaiya College of Engineering

Enter Institute Code  
KJ2340

Enter region of Institute  
Mumbai

Enter Password  
\*\*\*\*\*

Confirm Password  
\*\*\*\*\*

**PROCEED**

Registration Screen Layout 2

Pass History Screen Layout

### 2.1.2 Hardware Interfaces

Any mobile device that has at least 512 MB of RAM. A mobile device with has sufficient amount of unused non-volatile memory.

### 2.1.3 Software Interfaces

Operating System: The application would be first made available on the An-droid operating system for its best support and user-friendliness. Database: For storing user data we have chosen Firebase.

#### **2.1.4 Communications Protocols**

For uploading of files to the database and retrieving the data from the database over the internet, the relevant TCP protocols will be used.

### **2.2 Software Product Features**

#### **Functional Requirements:**

- Authentication :**

Creating an account in order to access the features of the application. An account is necessary for generating and storing the pass. Before generating pass and using other features a user has to log in to the application so that there can be a track of passes that a particular user has generated previously.

- User Details:**

The details would be taken from the user and displayed for future reference.

- Pass Application and Institute Level Authentication for Student Details:**

The user has to enter his/her journey details and the request for concession is sent to the institute for verification of the student details. The system at institute level is responsible for verifying student details and respond respectively. Once the details are verified by the institute, the details of the pass are forwarded to the railway authorities for granting concession and pass generation. After the payment is made by the user within the 2 days window, the user can access the digital pass through the app.

- Digital Pass Retention:**

Current pass is visible to the user with “active” tag. All the previous pass details would be visible to the user for reference.

- Renewal Notification:**

The user will be informed 2 days prior the expiry date of his current pass so that he/she can reapply for a new pass.

- Status of Pass:**

The status of the pass application will be displayed in which the steps which are completed will be highlighted.

### **2.3 Software System Attributes**

#### **2.3.1 Reliability**

The user should have a strong internet connection whenever they want to use the application as the application is completely reliable on data provided by the

server.

### **2.3.2 Availability**

The application will be available at all times i.e. all round the year, only restricted by the down time of the server on which the system runs. The pass will be available to the user even in the absence of an internet connection. In case of database corruption, backup will be stored with the help of recovery system.

### **2.3.3 Security**

Login will be using the 3-way handshake protocol and also the user's password is stored in database after undergoing a hash function. Hence, the original password the user enters is never revealed to anyone. Also, all the passes generated can be accessed only by the user and the Railways Authorities. Access to the admin and institute logins is restricted to some specific login credentials. The institute database would not be accessed by the app system directly. The verification process would be completely carried out by the institute system and only the response would be conveyed to the application.

### **2.3.4 Maintainability**

If too many passes are to be generated at a time of different users, it will be easy to maintain the entries if the data is backed up weekly or daily thereby increasing the feasibility of maintenance of the entries made by the user. If deletions or updates are supposed to be made by the users then backup can be easily accessed.

### **2.3.5 Portability**

As the entire application is application based, it is easily portable to any device Android device as of now. The new device should have a supported OS and sufficient memory requirement. For removing the misuse of portability, a user verification via Mobile OTP is done each time a new device is used.

### **2.3.6 Scalability**

The prototype is initially tested on a single institute and if successful, can be expanded to other institutes.

### **2.3.7 Usability**

The app helps in automating the cumbersome procedure of pass application. The app can be used for displaying the pass to the concerned authorities when asked for, this would ease the process of not only application but also checking the validity of pass by the authorities.

### 2.3.8 Interoperability

The app will be used by university students and railway authorities.

## 2.4 Database Requirements

The user enters the details in the User.Registration, which will have a special user id as primary key which will be used to link with other tables in the database. A user will then fill out the multiple fields in the application of a pass. The data of the filled application will be inserted in the database. The user id should be present in the User.Registration Table in order to issue passes. Official Announcements on the application that can be only done by the admin. These are the necessary tables and their functions required for the proper functioning of the website.

Figure 1: ER Diagram

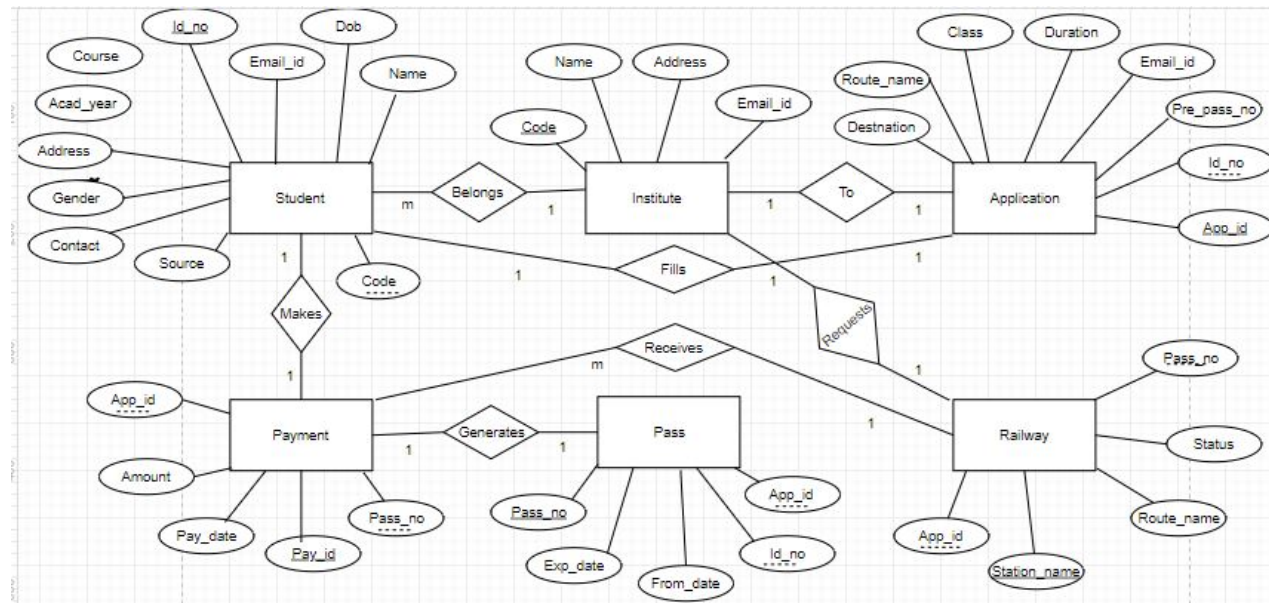


Figure 2: Relational Model

