

Software Requirements Specification

Document



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1. Introduction :

This part of the document will give a general description of everything included in the Software Requirement Specification document.

1.1 Purpose

The purpose of this document is to present a detailed description of the TekHub, an android application. It will explain the purpose and features of the system, interfaces of the system, what will the system do, the constraints under which it must operate and how the system will react to external stimuli.

1.2 Scope

This product is a software application that can be accessed through Android operating devices and can be downloaded from Google play store. This application will be free to download but limited to the active students of Cegep college.

The system will be designed to help the student to:

- Create an account
- Login to account
- Reset his/her password
- Search item by type, title, ratings
- Borrow an item
- Add item to waiting list
- Edit/update profile

1.3 Definitions, acronyms, and abbreviations

Term	Definition
Database	Collection of all the information monitored by this system.
User/student	Any active student of Cegep college.
Admin	System administrator who is given specific permission for managing the system and lending the items.
Android	A mobile device operating system developed by Google Inc.
Social Media	Facebook, twitter, whatsapp or Instagram.

2. Project Description :

TekHub application will be used by the students of CEGEP de la Gaspesie to borrow devices from the college. The app will provide list of devices like laptops, lan cables, etc. Students can borrow any item from the list of available items displayed to them. Every item borrowed will have deadline before which student has to return the item to the college.

Students can filter out the items list on the basis of type of items, newest added, most borrowed items, ratings by user or can directly search the item in search bar. When an item is borrowed, it will be marked unavailable by the system until returned back and the administrator is notified regarding the item. The students can check deadline of any item that is already borrowed but cannot check who borrowed it, whereas administrator can check deadline of any item that is borrowed along with who borrowed it.

Depending upon the requirement students can add an item that is already borrowed to their waiting list and the system will notify them as soon as the item is returned back to the college. If the item is non-functional, broken or student lost the item then student can generate an issue which will be solved as soon as possible by the administrator.

Scrum Agile framework will be followed throughout the development of TekHub application. The project will be divided into 3 sprints, each sprint will last for 2 to 3 weeks. Each sprint will be built on top of previous sprint. Deliverable or prototype will be reviewed after every sprint so that new requirement or change in previous requirement can be done easily.

2.1 Planned Sprint Timeline :

Sprint	Dates
0	January 27, 2020 - February 16, 2020
1	February 17, 2020 - March 8, 2020
2	March 9, 2020 - March 22, 2022

3. Requirements :

3.1 User Story Backlog :

ID	NAME	POINTS	PRIORITY
THB-1	As a registered student I want to login with my previous credentials so that I can borrow new item or see my profile.	1	High
THB-2	As a new student I want to signup to the application so that I can borrow items from the College.	3	High
THB-3	As a registered student I want to reset password so that I can change/reset my password at any time.	3	High
THB-4	As a logged in student I want to see the most recent added items available to borrow from the school on the home screen.	5	High
THB-5	As a logged in student I want to search any specific item so that I can borrow that item easily.	8	High
THB-6	As a logged in student I want to filter the items list on the basis of type of items, newest added, most borrowed items, ratings by user so that I can easily search the items.	8	Medium
THB-7	As a logged in student I want to view and edit my profile so that I can change my profile fields whenever needed .	8	Medium
THB-8	As a logged in student I want to see all item that are already lend and when these items will be available so that I can lend them when they are available .	5	Low

THB-9	As a logged in student I want to see the item in my borrowed list that I have borrowed from the school.	5	Low
THB-10	As a logged in student I want to see the deadline of every items that I have borrowed so that I can return them before deadline.	8	Medium
THB-11	As a logged in student I want to be notified one day(one working day) before the deadline of the item that I borrowed so that if I forget the deadline, the notification can help me to remember the deadline.	3	High
THB-12	As a logged in student I want to add the unavailable item in my waiting list so that I can check later when they will be returned back to college.	8	Lowest
THB-13	As a logged in student I want to be notified for item in my waiting list that has been returned back to school and are available to lend.	4	Medium
THB-14	As a logged in student I want to give feedback along with rating for every product that I lend from the school so that other can get idea about the quality of the item before lending that.	8	High
THB-15	As a logged in student I want report an issue functionality regarding - item is broken/not working after lending, Or if I lost the item so that immediate action can be taken by the school regarding that issue.	5	High
THB-16	As a new student, I want to see signup option at landing page, so that I can register my profile in the application.	4	High
-THB 17	As a logged in student, I want to be able to sign out my account/profile from the application.	1	Medium
-THB 18	As a student, I want to be able to be enjoy an aesthetically pleasing and intuitive user interface design so that I can easily use and navigate the application.	8	Medium
-THB 19	As a logged in student, I want to be able to view details(name, description, availability etc) about selected item so that I can get all the information about the item and decide if I should borrow it or not.	4	High

THB-20	As an administrator I want to login with administrative account so that I can manage the application with administration privileges.	4	Low
THB-21	As an administrator I want to add, remove and update items from the list of items.	5	High
THB-22	As an administrator I want to manage users accounts(update or remove).	4	High
THB-23	As an administrator I want to be notified whenever an item is borrowed from the school.	3	Medium
THB-24	As an administrator I want to be notified whenever an issue is generated by the user so that I can immediately solve the the issue.	4	Medium
THB-25	As an administrator I want to be notified whenever an item is not returned before the deadline so that I can take action against late return.	5	Medium
-THB 26	As a admin, I want to create a good schema of my application in mysql, so that the user data can be easily stored and retrieved.	3	High
-THB 27	As a logged in student I want to directly navigate to my profile, my borrow list, my waiting and back to items list, so that I can easily use and manage the application.	8	High

3.2 Functional Requirements

Requirement ID	Requirement Statement	Must/Should/Could/Would	Comments
FR001	A new student shall be able to signup to the application to lend items.	MUST	The system shall save the credentials with in the database.
FR002	A registered student shall be able to login on the application using previous credentials.	MUST	The system shall save the credentials with in the database.
FR003	A logged in student shall be able to sign-out from the application.	MUST	The system shall log out the user from the application.
FR004	The student shall be able to reset his/her password .	MUST	The system shall update the user password in database.
FR005	The logged in student shall be able to see the list of items(available or unavailable) on the home screen.	MUST	The system shall fetch the item list and display on the home screen.
FR006	A logged in student shall be able to edit their profile fields.	MUST	The system shall update the account details of the user in the database.
FR007	A logged in student shall be able to borrow items from the application.	MUST	The system shall update the item availability to non available.
FR008	The system should mark item available as soon as it is returned back from previous borrower.	MUST	The system shall update the item availability to available as it is returned back.
FR009	The logged in student shall be able to see the details(name, availability, description, ratings) about selected item from the list.	MUST	The system shall fetch the item details from the database.
FR010	The application shall have an items search filter according to type.	MUST	The system shall filter all items, according to type selected by the user.
FR011	The application shall have an items search filter according to ratings.	MUST	The system shall filter all items, according to ratings of the items.

FR012	The application shall have an items search filter according to newest item added.	MUST	The system shall filter all items, according to time they added in the list.
FR013	The application shall have an items search filter according to most borrowed items.	MUST	The system shall filter all items in descending order, according to no. of times item borrowed by the user.
FR014	The logged in student shall be able to directly search item by typing in the search bar.	MUST	The system shall search for the keyword in the item list in database and display all matched items to the user.
FR015	A logged in student shall be able to add/remove items from waiting list.	COULD	The system shall add/delete the items in the database.
FR016	The logged in student shall have the option to share the application or posts via various social platforms.	COULD	The system shall open other social apps.
FR017	The administrator shall be able to add/remove items from the list of items.	MUST	The system shall update item list in the database.
FR018	The administrator shall be able to update/delete account of the registered user.	MUST	The system shall update registered student list in the database.

3.3 Non-Functional Requirements

Requirement ID	Requirement Statement	Type
NFR001	Passwords shall never be viewable at the point of entry or at any other time.	Security
NFR002	The password length should be minimum 8 characters.	Security

Requirement ID	Requirement Statement	Type
NFR003	A user shall not be able to log into more than one device at any given instance of time.	Security
NFR004	The maximum number of users using the app at one time could reach to 1000 students.	Scalability
NFR005	The customer can edit profile at any time and the system should update profile within 5 seconds.	Performance
NFR006	The system should authenticate the customer's username and password within 5 seconds.	Performance
NFR007	The application should be available to users to use at anytime.	Availability
NFR008	The admin can add/integrate more features in future.	Integrability
NFR009	The language used should be English to make easy for everyone to use the application.	Usability
NFR010	The user interface of the application must be comprised of icons, images menus, help screens, dialog boxes and buttons for user inputs.	Usability
NFR011	The application should run in any android OS based operating mobile device.	Compatibility
NFR012	The administrator should remove items from the list which are non-operational or broken depending upon the users feedback.	Maintainability
NFR013	The system shall not be shut down for maintenance more than once in a 24-hour period.	Reliability
NFR014	When a new version of the main system is released, it shall be possible to upgrade to it from any previous version.	Reliability
NFR015	In case the system is crashed the recovery system should save last stable version.	Reliability

4. Release Planning

4.1 Sprint 1 Summary (Jan 27 - Feb 16)

The goal in Sprint 1 is to tackle the login, signup, item list and item details features of the application where the user can register, login to his/her profile, see the item list and item details. The user profile is stored in the database server which is connected to the database. These stored credentials are used by the user to login in the application.

Sprint 1 will include the basic project setup, which involves the creation of a splash screen, landing page(login page), reset password page and signup page. RDS MySql database by amazon is used to store the database and webcalls/webapi are created in netbeans ide to get and store data from/to the android application.

3.1.1 User Stories For Sprint 1

ID	NAME	POINTS	PRIORITY	STATUS
THB-1	As a registered student I want to login with my previous credentials so that I can borrow new item or see my profile.	1	High	DONE
THB-2	As a new student I want to signup to the application so that I can borrow items from the College.	3	High	DONE
THB-4	As a logged in student I want to see the most recent added items available to borrow from the school on the home screen.	5	High	DONE
THB-16	As a new student, I want to see signup option at landing page, so that I can register my profile in the application.	4	High	DONE
-THB 17	As a logged in student, I want to be able to sign out my account/profile from the application.	1	Medium	DONE

-THB 19	As a logged in student, I want to be able to view details(name, description, availability etc) about selected item so that I can get all the information about the item and decide if I should borrow it or not.	4	High	DONE
-THB 27	As a logged in student I want to directly navigate to my profile, my borrow list, my waiting and back to items list, so that I can easily use and manage the application.	8	High	DONE

4.2 Sprint 2 Summary (Feb 17 - continue)

The goal in Sprint 2 is to add place order, view borrowed order details, give feedback to the item borrowed, generate issue functionalities to the application. The feedbacks and order details are stored in the database and feedbacks are retrieved in the customer feedback section of the item details.

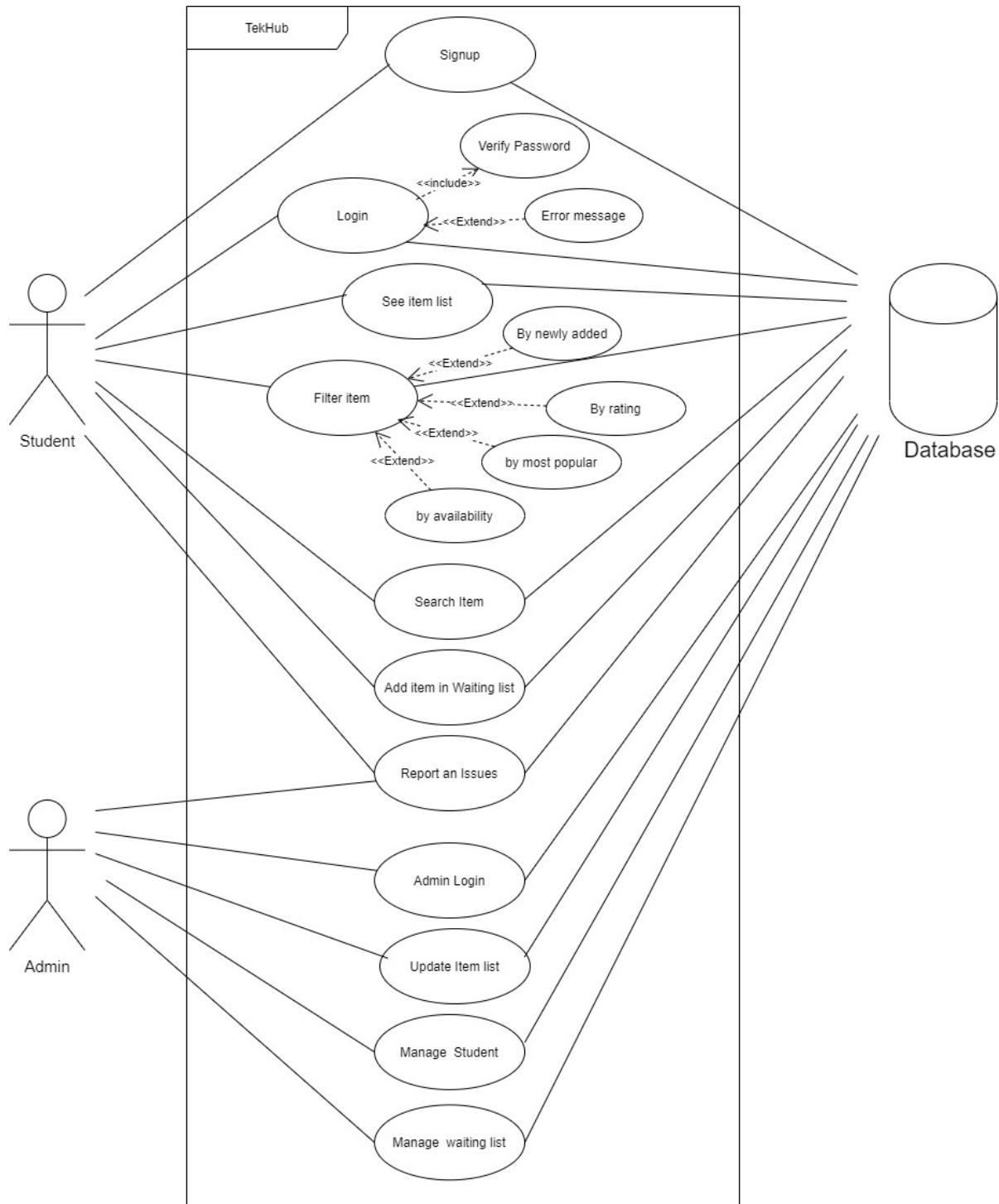
Sprint 2 will also include the filter by functionality where user can filter the item list by popularity, availability, newest item added or even can directly search in the search bar by typing the item name. Respective web calls are created for each functionality added in the application.

ID	NAME	POINTS	PRIORITY	STATUS
THB-5	As a logged in student I want to search any specific item so that I can borrow that item easily.	8	High	DONE
THB-6	As a logged in student I want to filter the items list on the basis of type of items, newest added, most borrowed items, ratings by user so that I can easily search the items.	8	Medium	DONE
THB-7	As a logged in student I want to view and edit my profile so that I can change my profile fields whenever needed .	8	Medium	DONE

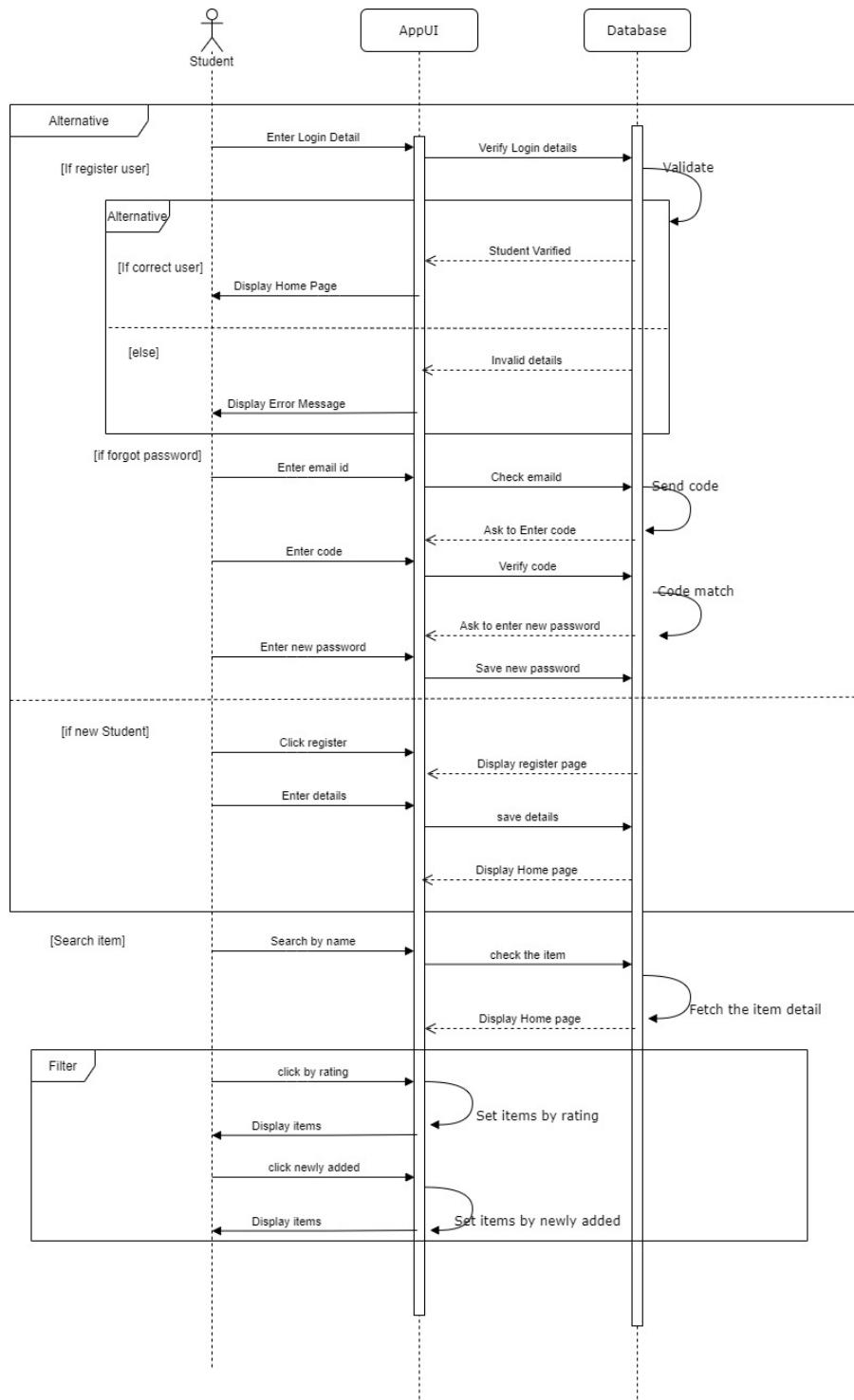
THB-8	As a logged in student I want to see all item that are already lend and when these items will be available so that I can lend them when they are available .	5	Low	DONE
-THB 9	As a logged in student I want to see the item in my borrowed list that I have borrowed from the school.	5	Low	DONE
-THB 10	As a logged in student I want to see the deadline of every items that I have borrowed so that I can return them before deadline.	4	High	DONE
-THB 14	As a logged in student I want to give feedback along with rating for every product that I lend from the school so that other can get idea about the quality of the item before lending that.	8	High	DONE
-THB 15	As a logged in student I want report an issue functionality regarding - item is broken/not working after lending, Or if I lost the item so that immediate action can be taken by the school regarding that issue.	5	High	DONE
-THB 20	As an administrator I want to login with administrative account so that I can manage the application with administration privileges.	4	High	DONE
-THB 21	As an administrator I want to add, remove and update items from the list of items.	5	High	DOING
-THB 26	As a admin, I want to create a good schema of my application in mysql, so that the user data can be easily stored and retrieved.	3	High	DONE

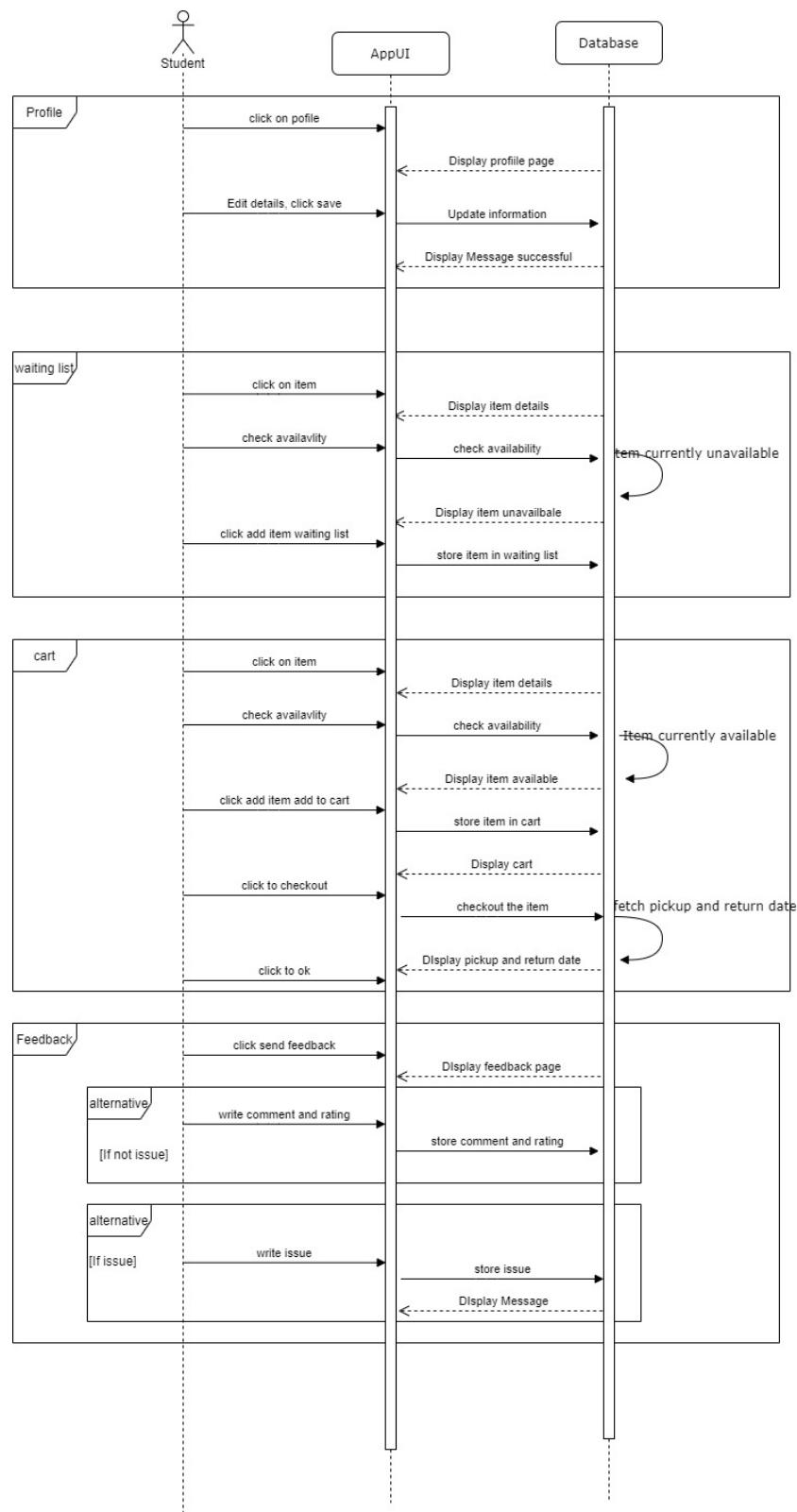
5. UML Diagrams And Charts:

5.1. Use Case Diagram :



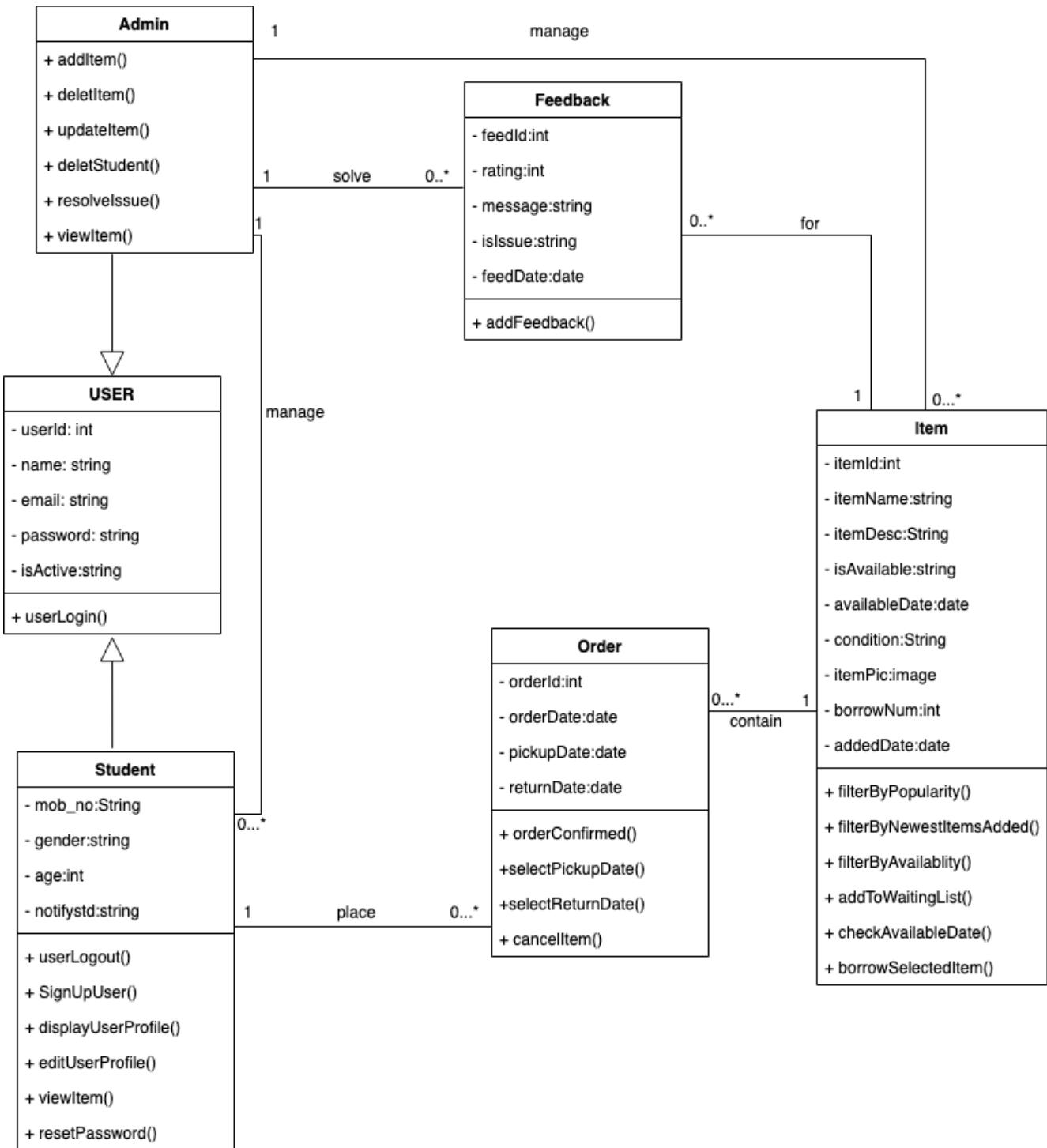
5.2. Sequence Diagram :



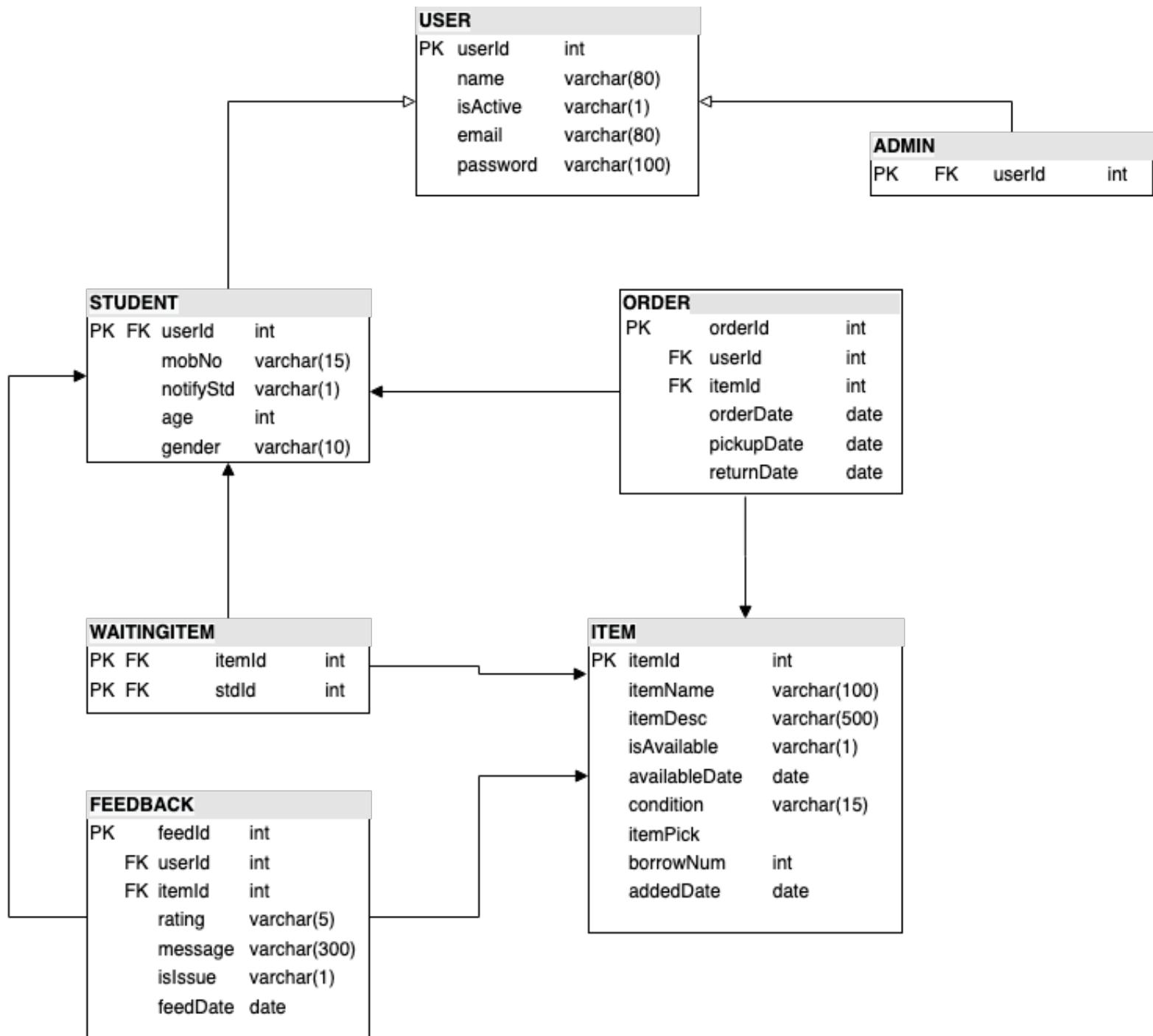


6. Architecture:

6.1. Class Diagram :



6.2. Database Schema :



7. USER INTERFACE DESIGN

7.1 USER PERSONA :



"I want an application that can help me to rent my study related stuff so i can save money.

Age: 26

Work: Student

Family: Single

Location: Montreal, Canada.

Goals

- To rent the study related computer items.

Frustrations

- There is no perfect application that can help him to rent the item the easiest way, so he can save time and money.

Bio

Siddhart is studying in cegep, as he doesn't like to spend money. He is looking for an application which can help him to rent study related items and he can use and return back to college..



"I am looking for an Application that will help me to rent my IT stuff easily"

Age: 25

Work: International student

Family: Single

Location: Montreal, Canada

Goals

- To rent the technical items without purchasing.

Frustrations

- As she is an international student she doesn't have much knowledge about Canada's Computer products. So, if she buys more stuff than it will be too much expense.

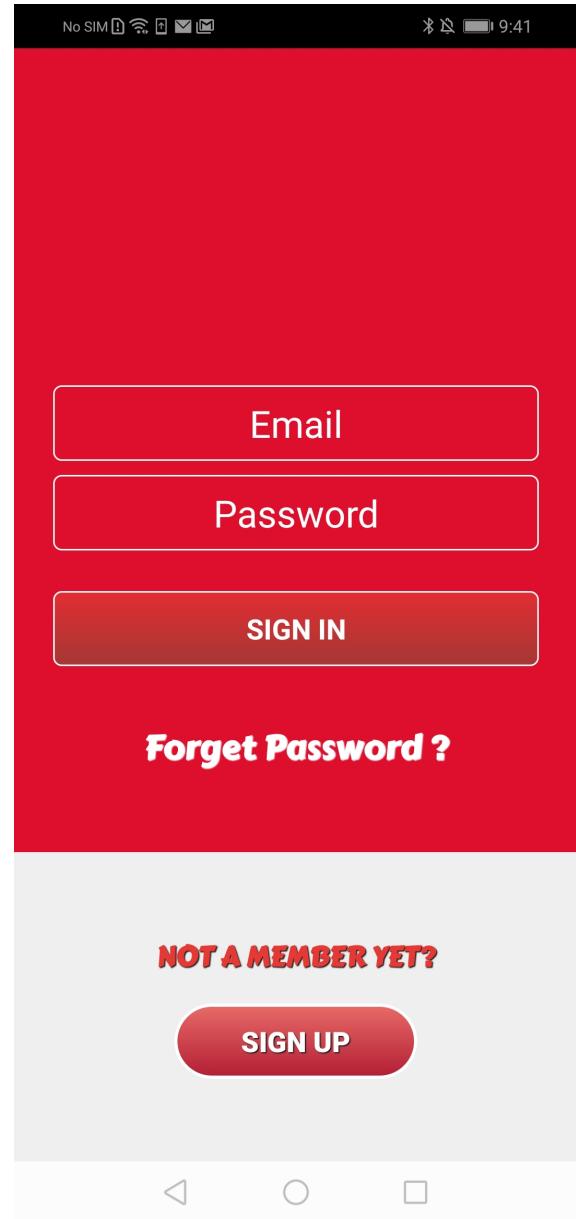
Bio

Sarah is an international student from Indonesia and she is studying a mobile application development course in cegep. As Canada is an advanced country in all sectors, She doesn't have much knowledge about the computers of canada, and she is also new in the county so she can not roam and buy the computer. That's why she is looking for an app that can help her to rent the computer or computer related items and she can complete her assignments and project easily and on time.

7.2 TekHub - UI Mockups



SPLASH SCREEN



LOGIN SCREEN

No SIM 9:42

enter student ID

enter name

enter email

enter password

enter mobile no.

enter age

I am Male Female

SIGN UP

Already a member? [Login](#)

No SIM 9:42

TekHub Android

Student ID

Email

GET CODE

Code

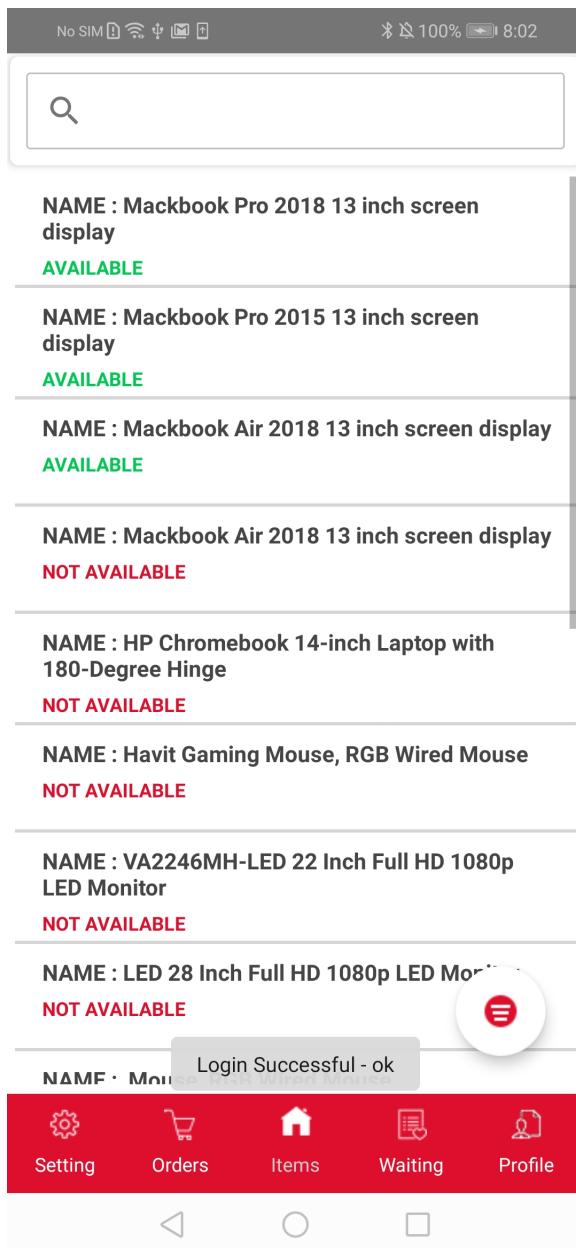
New Password

Confirm Password

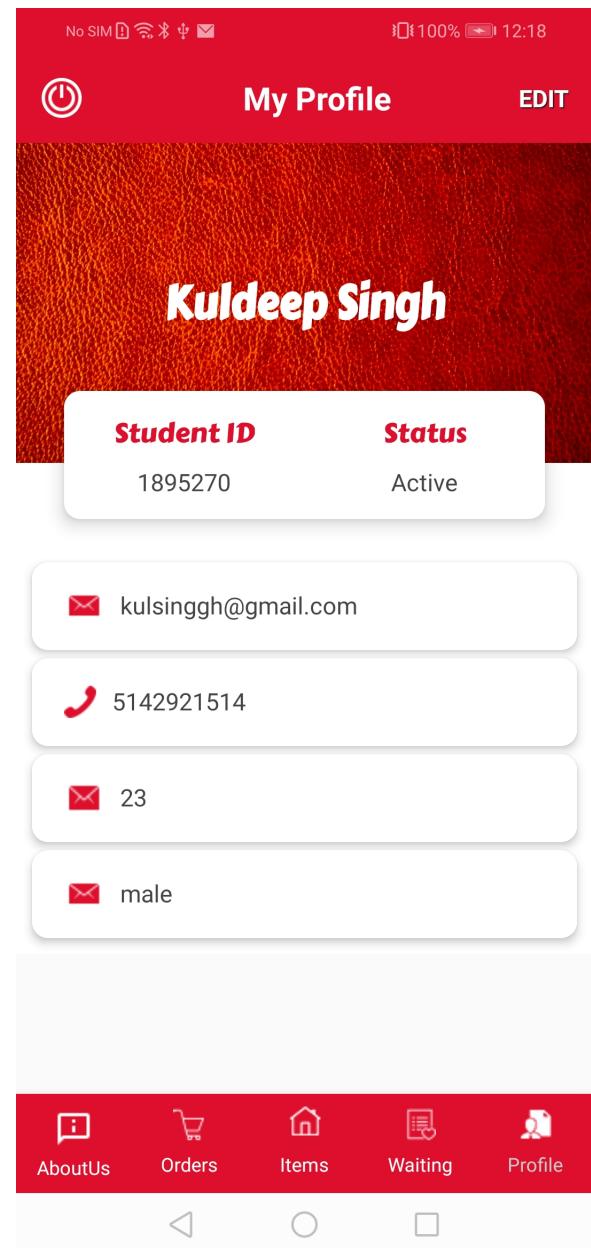
SAVE PASSWORD

SIGNUP SCREEN

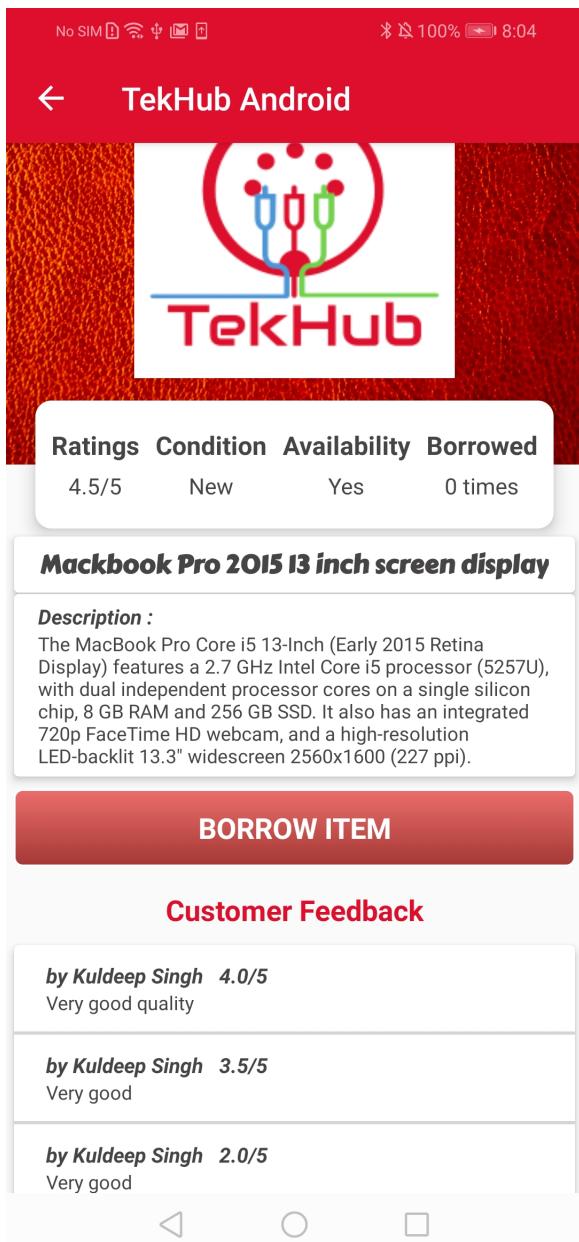
RESET PASSWORD SCREEN



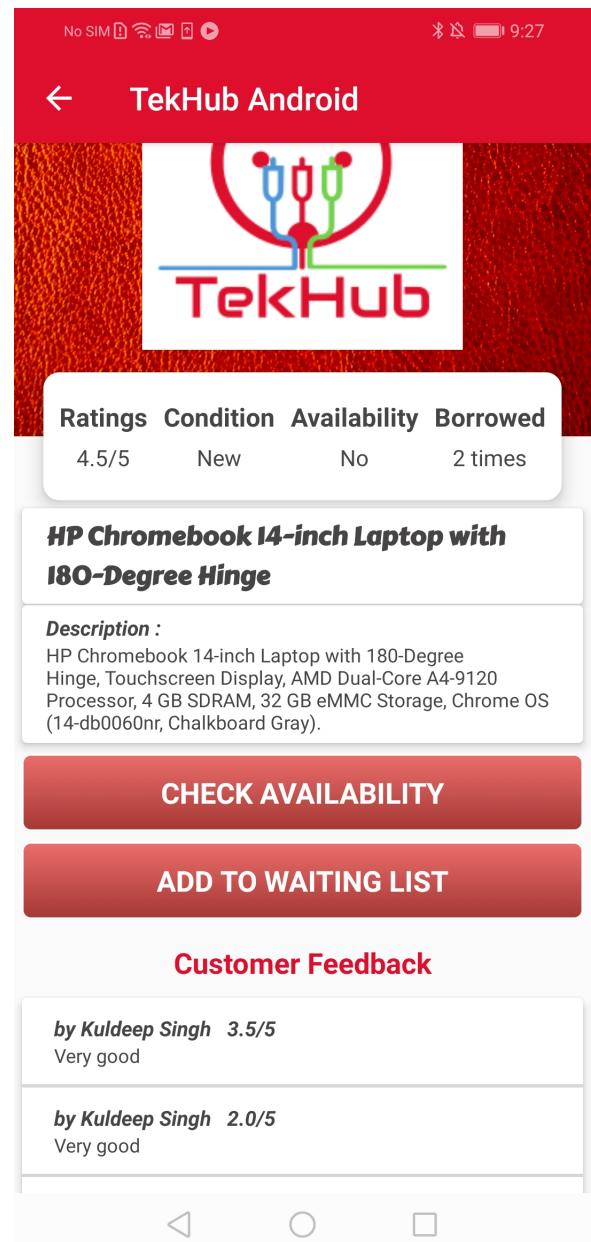
ITEM LIST SCREEN



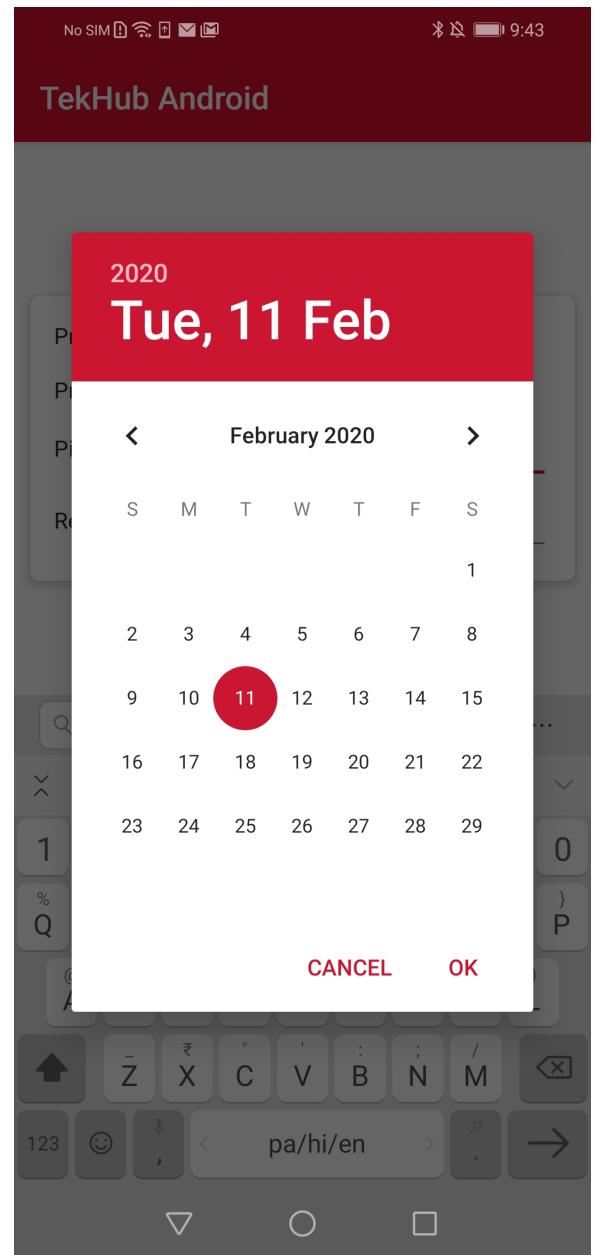
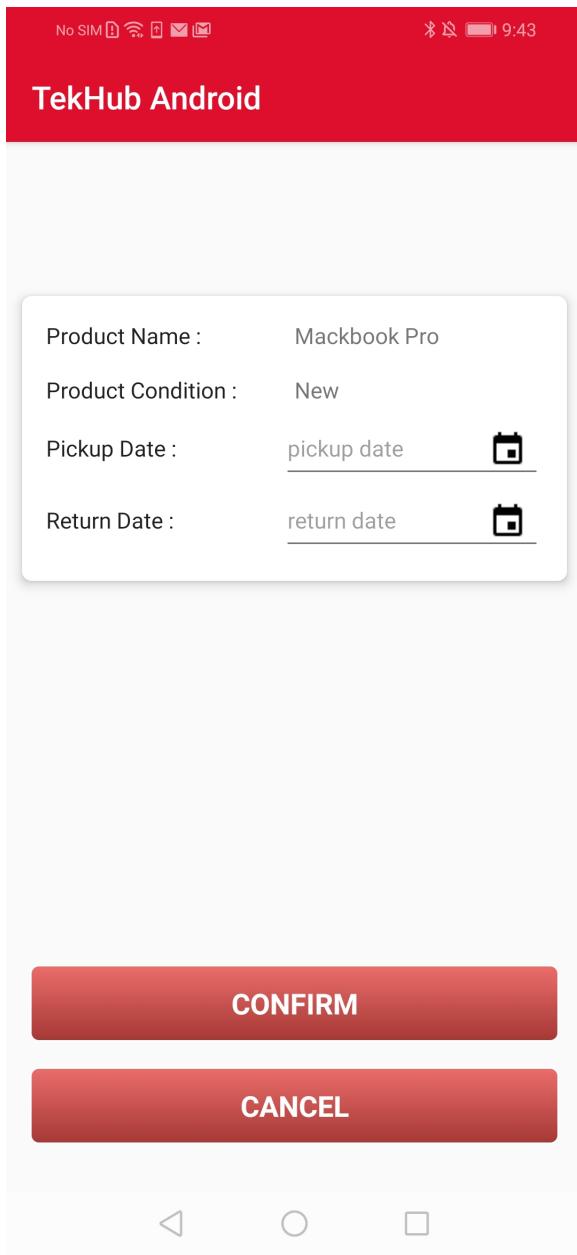
PROFILE SCREEN



ITEM AVAILABLE DETAILS SCREEN

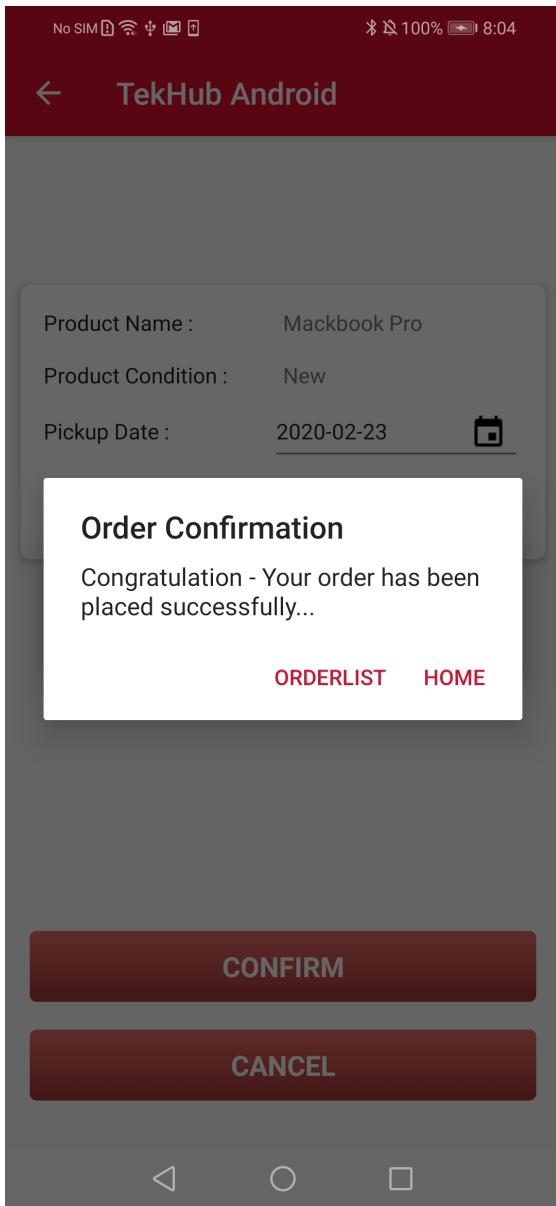


ITEM NOT AVAILABLE DETAILS SCREEN

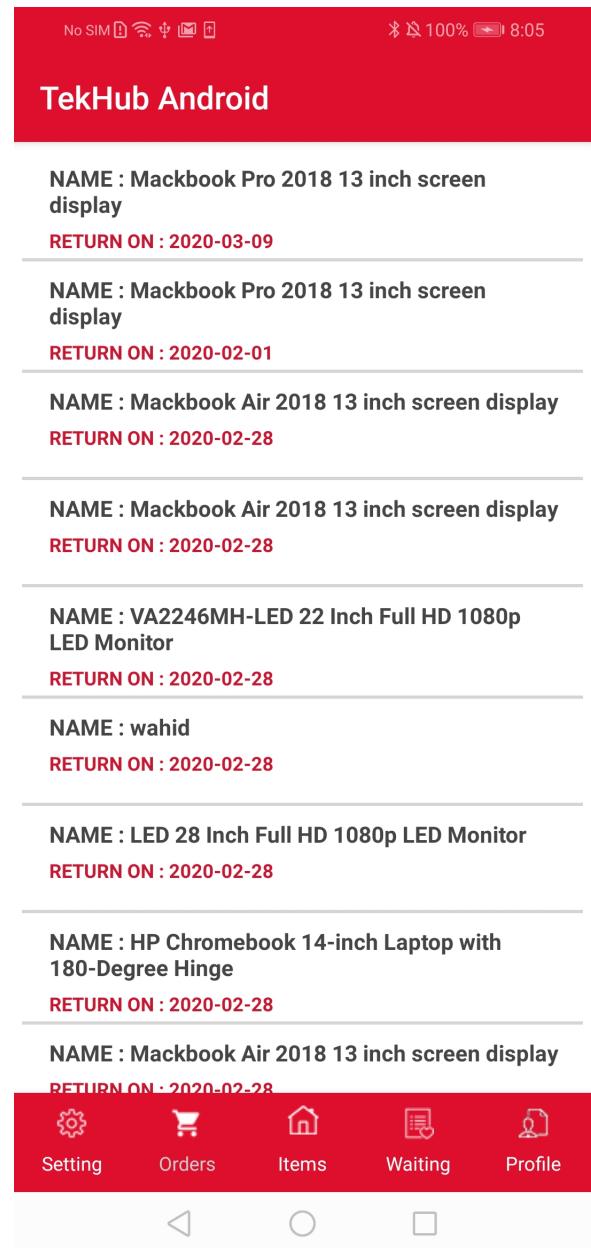


ITEM BORROW SCREEN

SELECT DATES SCREEN



ORDER CONFIRM SCREEN



ORDER LIST SCREEN



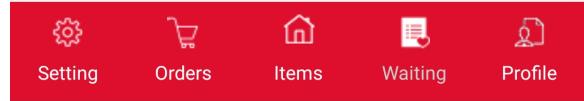
ORDER DETAIL SCREEN



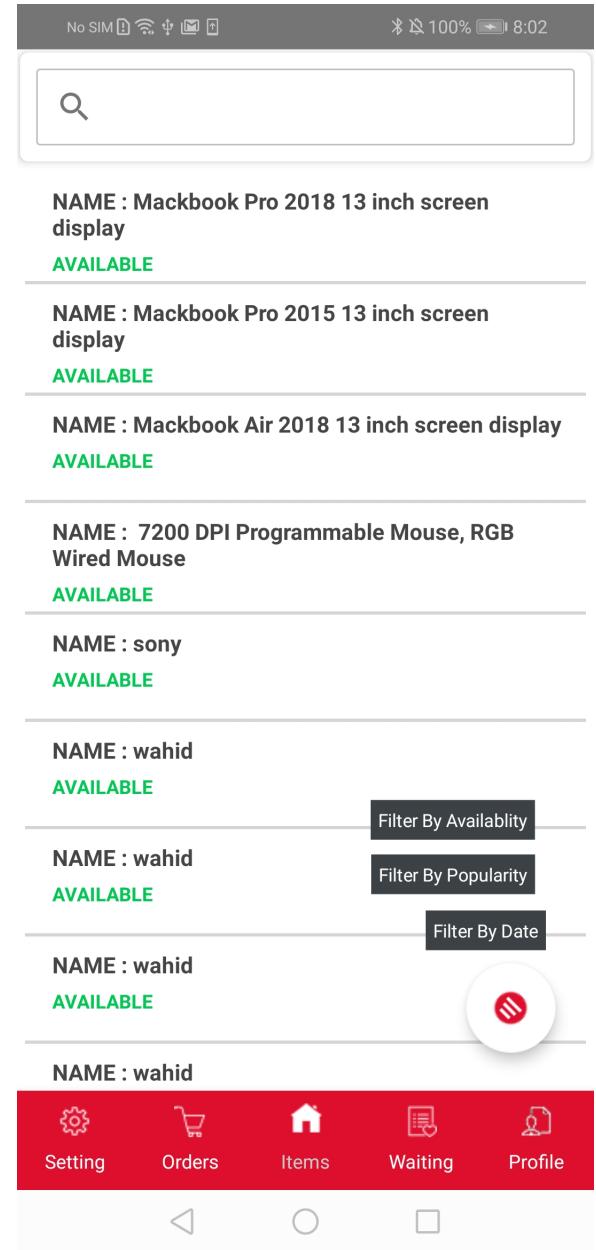
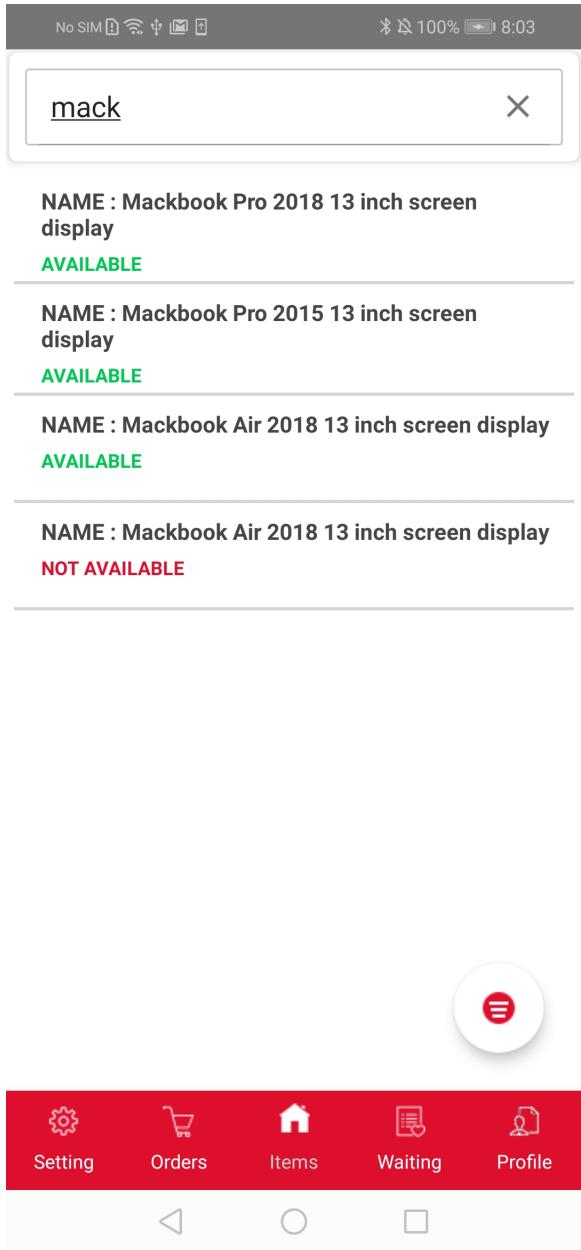
FEEDBACK SCREEN



GENERATE ISSUE SCREEN

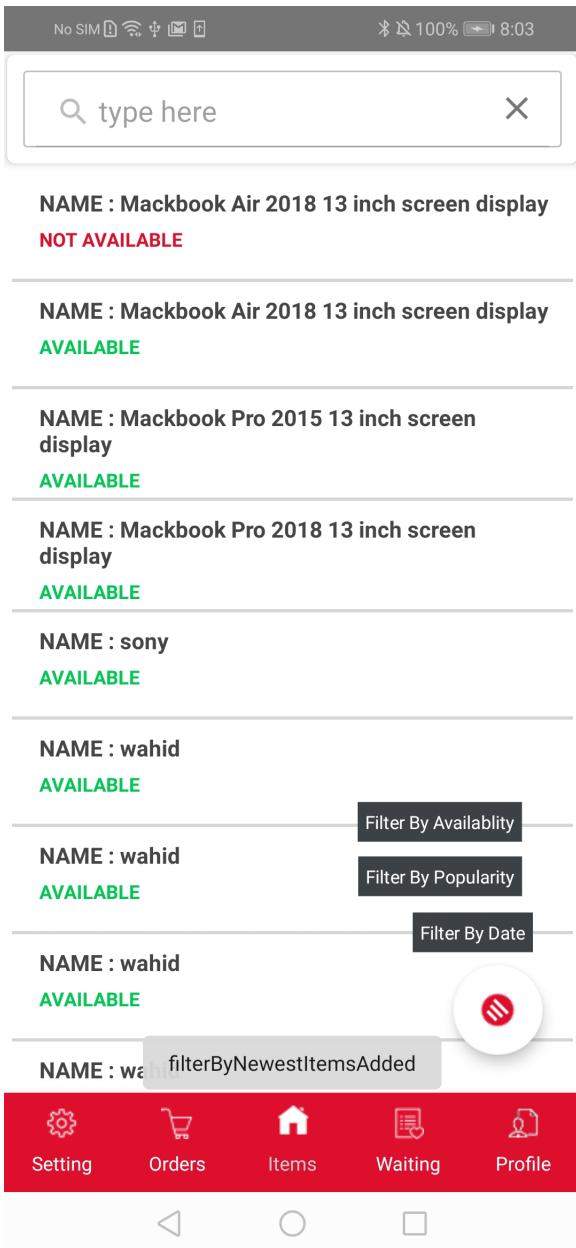


WAITING LIST SCREEN

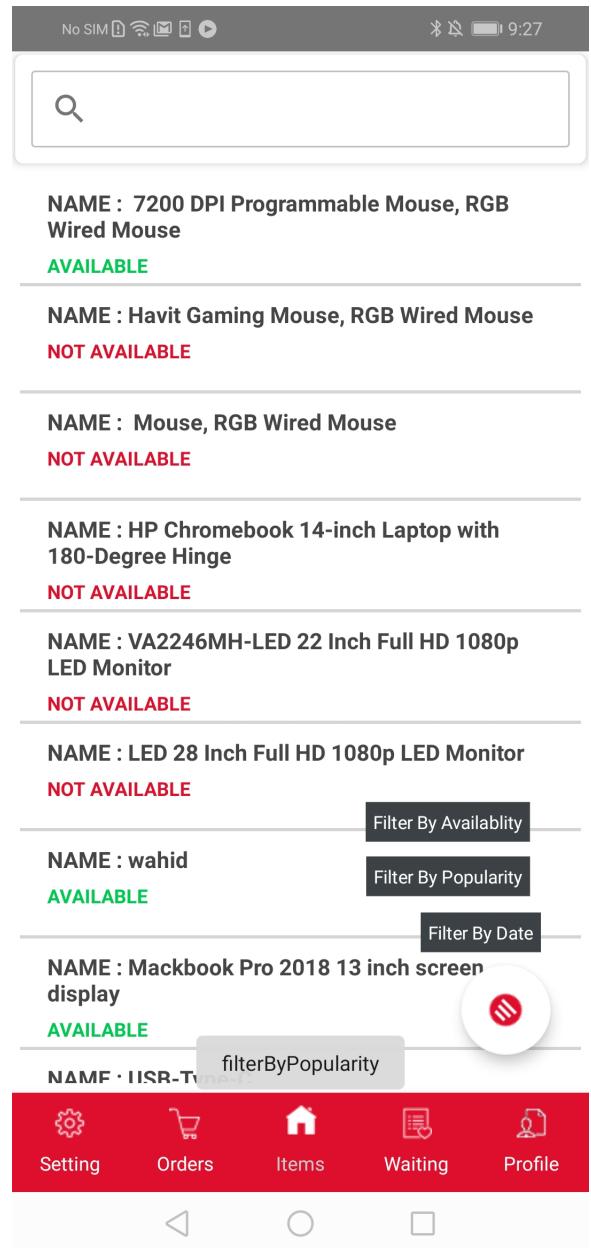


FILTER BY SEARCH KEYWORD SCREEN

FILTER BY AVAILABILITY SCREEN



FILTER BY NEW ITEM SCREEN



FILTER BY POPULARITY SCREEN



OPENING DAY : Mon - Sun

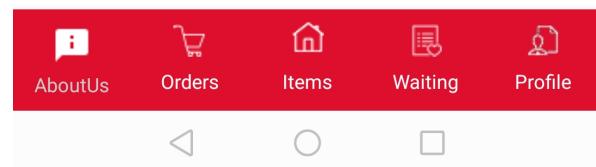
TIMING : 8:00 AM-4:30 PM

CONTACT US : +1(514)292-1514

**TekHub is an android application to help
Cegep de la gaspesie students to lend
computer related stuff from the college.**

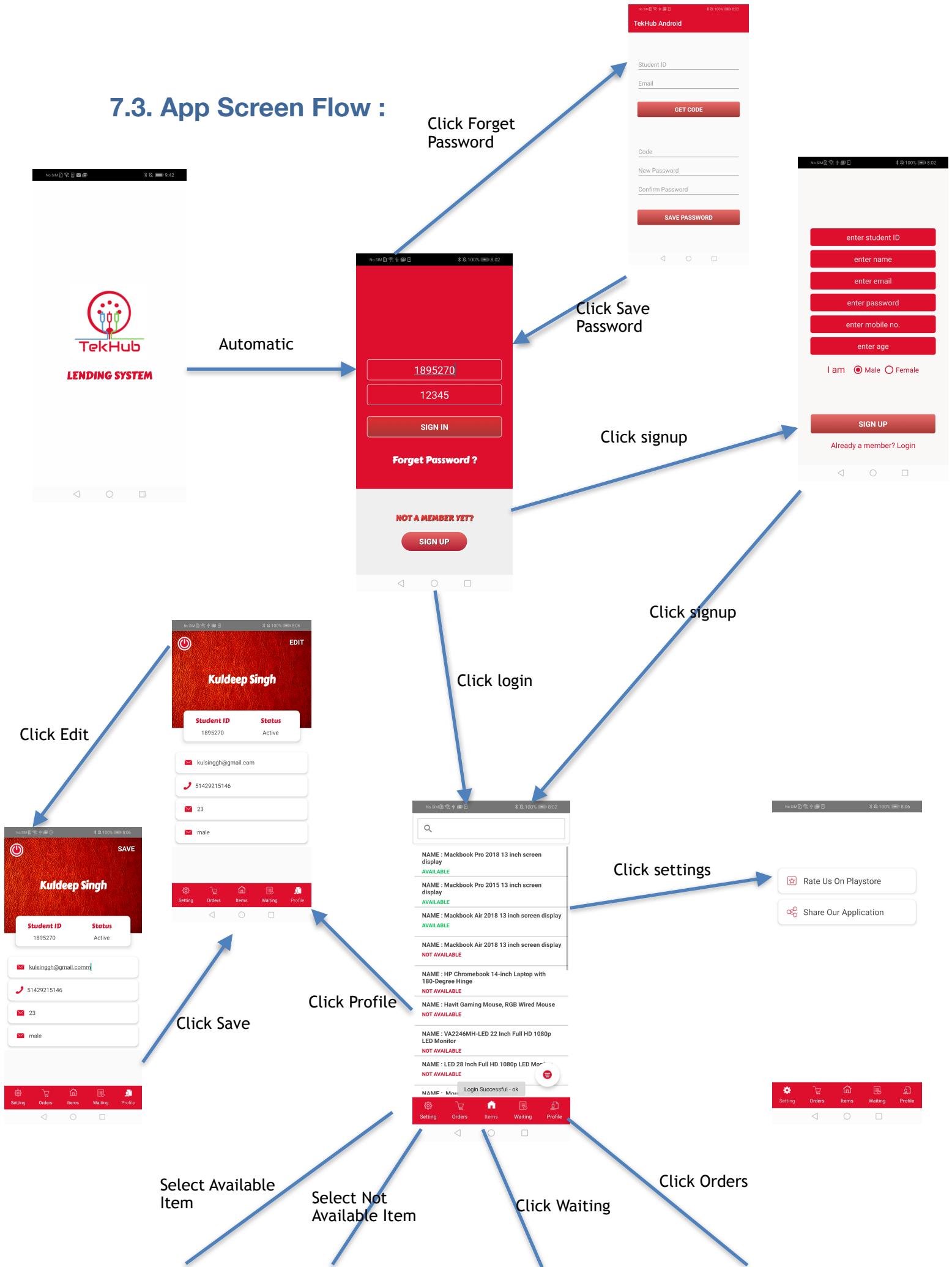
 Rate Us On Playstore

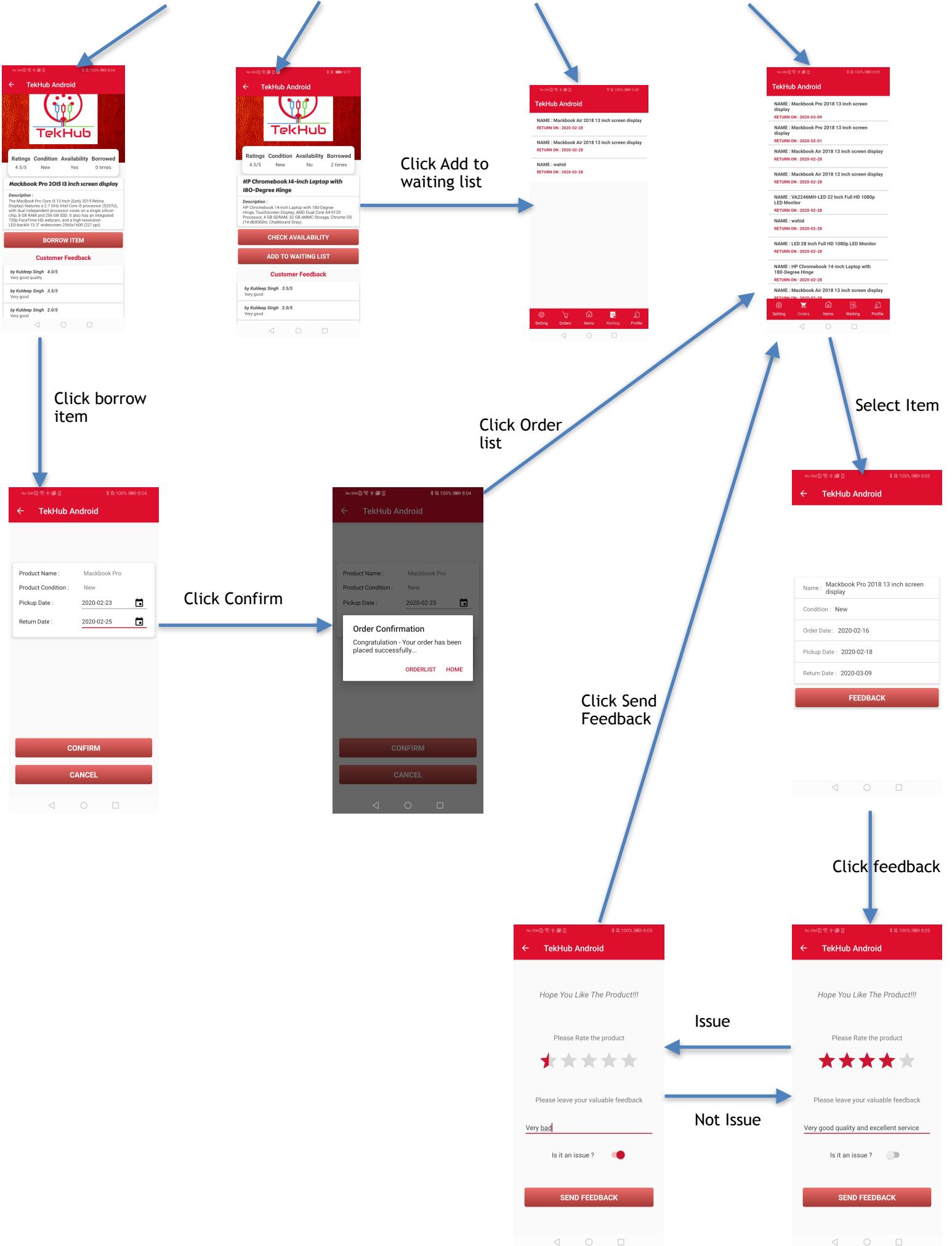
 Share Our Application

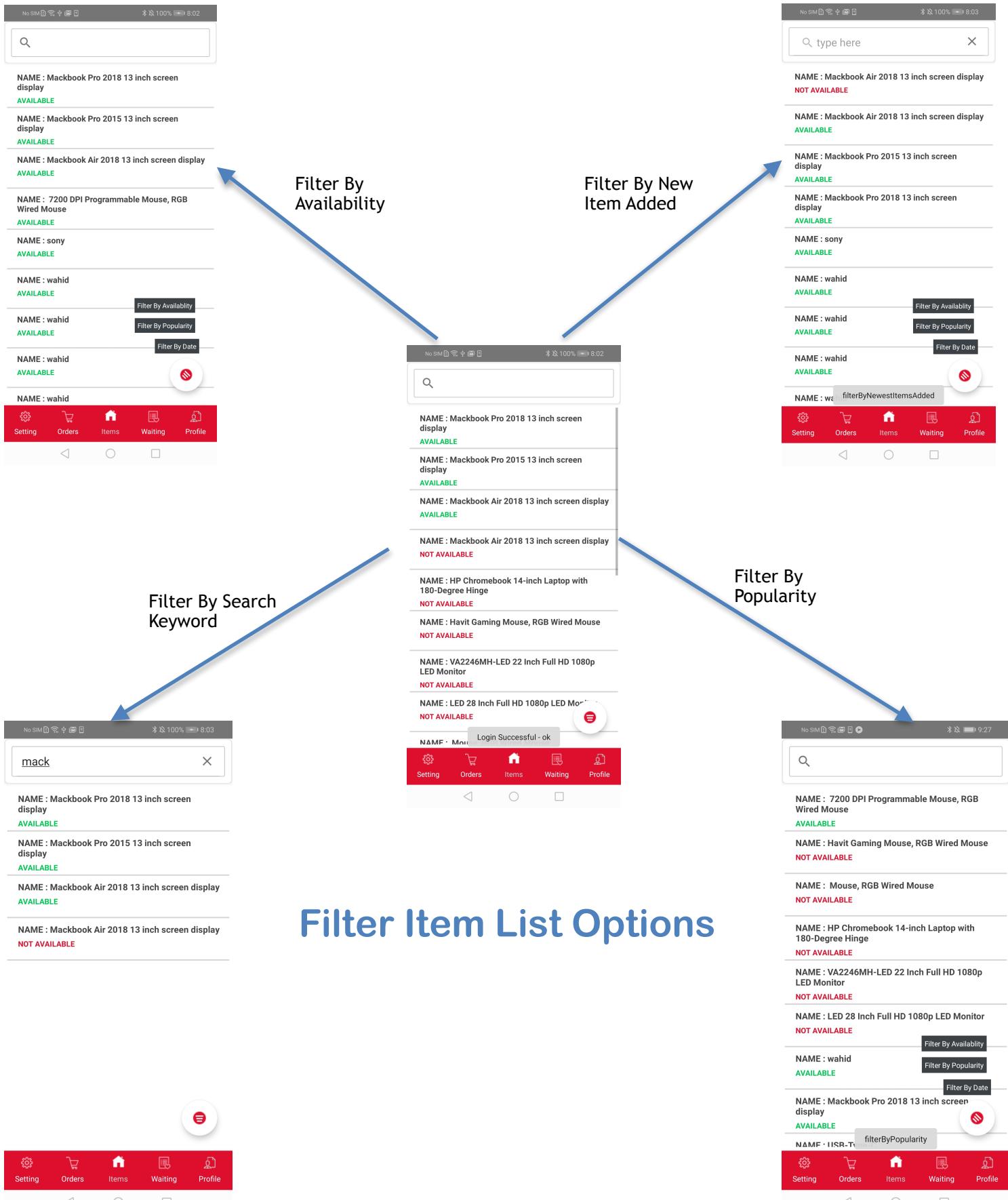


SETTINGS SCREEN

7.3. App Screen Flow :







8. Use Case Scenario:

8.1. Signup :

Use case ID	Signup	
Use Case Name	Signup the new students	
Created by	Asma Rokadiya	Last updated by:
Primary Actor	Student	
Secondary Actor	Database	
Description	When students use the application for the first time, they can create an account using registration page.	
Triggering event	Student wants to register with the application	
Precondition	Student must enrolled in cegep and active student.	
Flow of events	Actor	System
	Student enters the details based on requirements of fields. Student click the button for register.	System verifies that all required field is completed by student. Store the data in database. Login page will open.
Alternative flow of events	Actor	System
		System verified that all information is submitted by student. If any field left to enter by student the process of registration will not successful.

8.2. Login :

Use case ID	Login	
Use Case Name	Login for the application	
Created by	Asma Rokadiya	Last updated by:
Primary Actor	Student	
Secondary Actor	Database	
Description	When student wants to login the application, the system will verify the login details and allow students to enter the main page.	
Triggering event	Student wants to login the application	
Precondition	Students must register with the application.	
Flow of events	Actor	System
	User enters the login details. Click the login button.	System verifies login details in database. Authentication successful. The main home page will open.
Alternative flow of events	Actor	System
		System check and verify all login information exist in database. If verification is failed it will display error message to student.

8.3. See Item List :

Use case name	See item list
Use case description	Student can view all computer related rental materials in the list
Primary actor	Student
Secondary actor	Database
Precondition	Student must login

8.4. Edit Profile :

Use case name	Edit profile
Use case description	Students can do changes in his/her profile for example update phone number, name, email etc
Primary actor	Student
Secondary actor	Database
Precondition	Student must have an account in the application and logged in.

8.5. Filter Item :

Use case name	Filter Item
Use case description	Student can filter the items in the list with his/her own requirements. For example newly added item, highest rating
Primary actor	Student
Secondary actor	Database
Precondition	Student must login

8.6. Search Item :

Use case name	Search item
Use case description	Student can search and choose the materials based on his/her requirements. For example Dell laptop, vga-hdmi converter
Primary actor	Student
Secondary actor	Database
Precondition	Student must login

8.7. Waiting List :

Use case ID	Waiting list	
Use Case Name	Item Waiting list	
Created by	Asma Rokadiya	Last updated by:
Primary Actor	Student	
Secondary Actor	Database	
Description	When a student wants to rent the item and if it's already taken by another student, in that situation the student adds that stuff in the waiting list. So that, when the item available, the student will get notification and he/she can rent the item.	
Triggering event	Student wants to add item in waiting list in the application	
Precondition	Students must register with the application.	
Flow of events	Actor	System
	Students login to the application. Students select the item and if it's unavailable, Student adds the item to the waiting list .	System verifies login details in the database. Selected item checks whether it is available or not. Added item store in waiting list of database.
Alternative flow of events	Actor	System
		System verified the login detail. If it will mismatch, the system displays error messages to students to try again.

8.8. Issues :

Use case ID	Generate Issue	
Use Case Name	Report an issues	
Created by	Sony Mathew	Last updated by:
Primary Actor	Student	
Secondary Actor	Database	
Description	When students rent the product and face any kind of issues i.e, broken,stolen or not properly working. In these cases students can report the issue to the admin.	
Triggering event	Student wants to report the issue with the application	
Precondition	Students must enroll in cegep and must rent the product.	
Flow of events	Actor	System
	Students login to the application. Rent the product. If there is an issue, they can submit report through an application	System verifies that Login details. System store the issue report in database and display to the admin
Alternative low of events	Actor	System
		System verified the login detail. If it will mismatch, the system displays error messages to students to try again.

8.9. Admin Login :

Use case name	Admin login
Use case description	When admin wants to login the application, the system will verify the login details and allow admin to enter the main page.
Primary actor	Admin
Secondary actor	Database
Precondition	Admin should have a valid credentials

8.10. Update Item List :

Use case name	Update item list
Use case description	Based on the existing item or new items, admin will update the list of items to be rented.
Primary actor	Admin
Secondary actor	Database
Precondition	Admin must login

8.11. Manage Student :

Use case name	Manage student
Use case description	Admin can remove and add or can make changes with students account
Primary actor	Admin
Secondary actor	Database
Precondition	Admin should login

FOR TEACHERS :

GitHub Android Link : <https://github.com/Gilpix/TekHub>

Trello : <https://trello.com/invite/b/sR9hoZK9/ae98fa84712abfb41aa2e998a322d32f/lending-system-app>

Github Webcalls Link : <https://github.com/Gilpix/TekHub-WebCalls>