

FARMER ASSIST

¹Chandrababha K S, ²Gangadharashetty P J

¹Assistant Professor, ²Student, VII Semester
Computer Science & Engineering

¹Siddaganga Institute of Technology, Tumakuru, Karnataka, India.

Abstract: In rural areas every KVK (Krishi Vignana Kendra) must contain the agricultural equipment provided by the government for the farmers. But they are maintaining a ledger to note down the list of equipment remaining at the center and the equipment issued to the farmers. It is tedious for the officers to monitor the equipment and also to the farmers to get the details about the available equipment. As a solution to the above mentioned problems, an interactive android application is developed for the farmers to check the availability of the equipment and also a web application on the administrator end to maintain the database of the equipment served to farmers and also the available equipment. The proposed system will offer an Android Application for farmers to conveniently find if the required agricultural equipment available in SIT. And also a web application for admins to manage the equipment available and to monitor the issued equipment for loans. The system will have the entire data in cloud, admin can login to do required operations and user can view the availability of equipment from their paces directly via android app. The admin will be having complete controls on managing available equipment and on issuing the equipment by simply signing in the form generated by the web app with the essential details. This will reduce the burden of admins to do manual entry and to monitor their returns. And also the burden of farmers to visit the KVK to get the details about availability of the device.

Index Terms: Web Application, Android, Firebase

I. INTRODUCTION

It has been observed that farmers are facing problems in going to the KVKs, which are far away from their places, just to get the details about whether the agricultural equipment for rent is available or not. It really consumes time as well as money for them to do above job. So we thought of developing a platform which reduces the farmers work by developing an android application through which farmer can register and get the details of availability of equipment directly from his place. Coming to the manager who manages the issue and retrieval of all these equipment, He has to manually maintain a ledger of the issued equipment to the farmers. It is very difficult to do all these manually and to check regularly. In order to overcome this we thought of developing a Web Application specifically for the admin to monitor the issued and available equipment directly without having a ledger. All the data will be saved in the cloud, so that he can access from anywhere, anytime within a fraction of seconds.

In order to achieve this we are using various tools and technologies like:

1. Android Studio
2. HTML, Bootstrap, JS
3. Firebase Cloud

PROBLEM STATEMENT

To develop an Android Application for farmers and to develop Web Application for admins to fetch the details of available agricultural equipment, cost and other information without consuming much time.

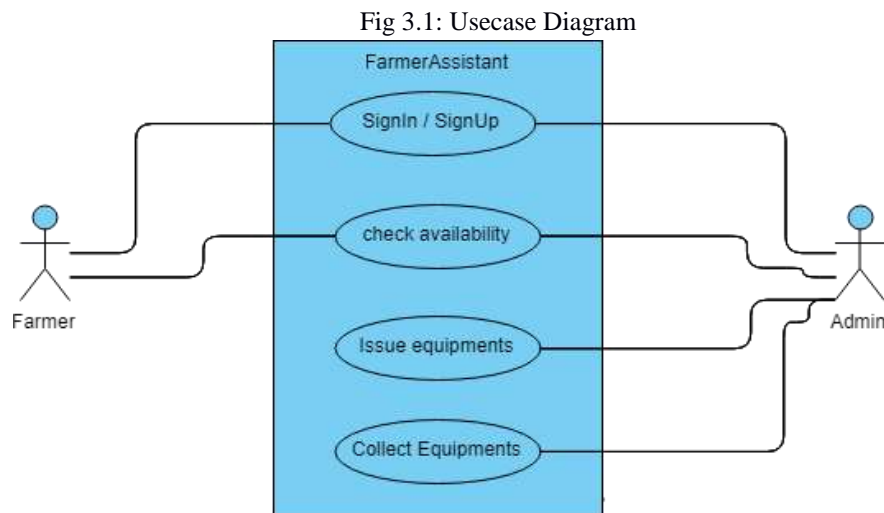
II. LITERATURE SURVEY

All the KVKs are maintaining the details of the shared agricultural equipment in a ledger. No web application for the Gramapanchayat officers to monitor the shared equipments. The existing systems are not automated.

III. DESIGN

This section deals with the realization of technical specification, design, software component and standard algorithm. It includes methods which are implementations of those methods specified by the interface.

3.1 Use Case of the proposed model:



As shown in the fig 3.1 use case diagram there are two end users, farmers and admins. The admin can add, delete, issue, and take back equipment. Whereas the farmers can view the equipment which are available for rent.

3.2 ACTIVITY DIAGRAM

Fig 3.2 shows the activity diagram for both web application and Android Application.

Flow of events in Android Application

1. The existing user needs to login to the application.
2. If he/she is a new user, he/she needs to register to the application and enter the password
3. User will be redirected to the main page where he/she can view the equipment which are available.

Flow of events in Web Application

1. The admin needs to login to the application.
2. He can view the equipment available.
3. He can issue the available equipment by filling the form and taking the signature on the form generated.
4. Admin can also see the equipment issued to the farmers and can take back by deleting the issued item.

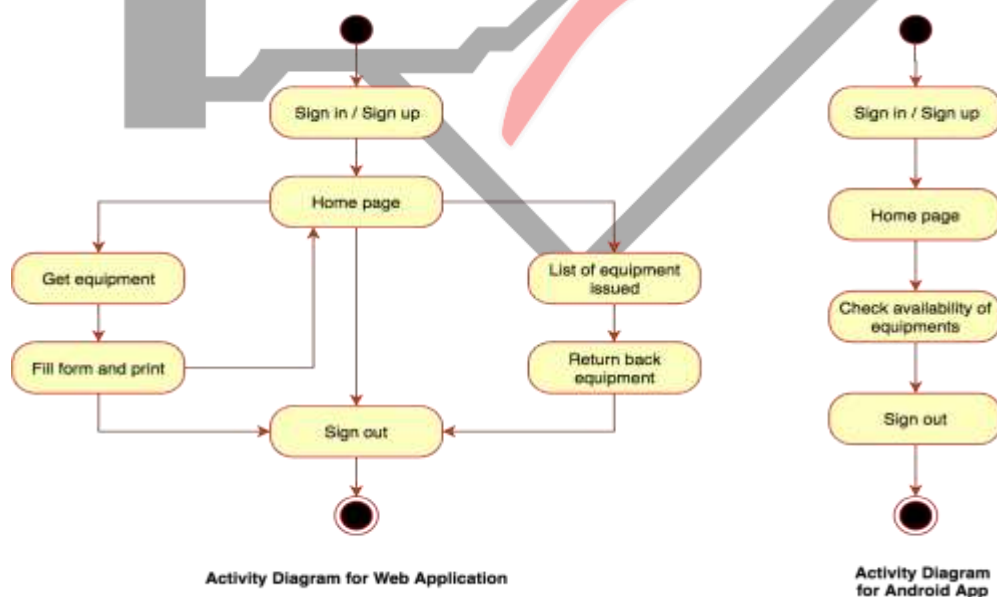


Fig 3.2: Activity diagram for both web application and Android Application

IV. IMPLEMENTATION

Web App is using Firebase API like Firebase Database, Firebase Authentication to fetch the data from the database and to authenticate user respectively.

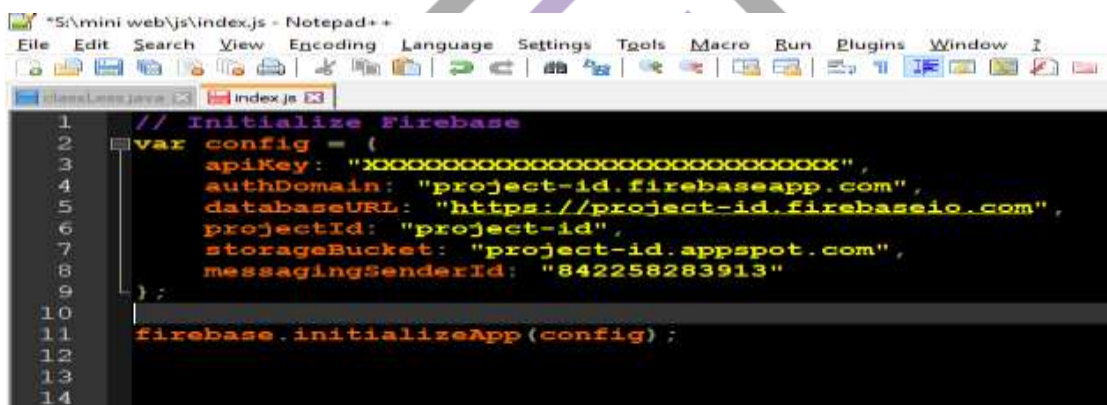
When the user sign in into the web app, he will enter into the home page, which is having various features like:

1. View the available equipment:
 - a. You can view the equipment left.
 - b. Images of the equipment, which helps the user to identify it easily.
2. Issue equipment to the farmers:
 - a. He can buy the equipment by via get and buy button which is available for every equipment.
 - b. Once he/she wish to buy the equipment, a form will be opened on new tab, he has to fill the form with proper inputs and click on submit.
 - c. Now it will ask to print a form, to get the signature from the user on hard copy for future use.
3. Collect the equipment back:
 - a. This is to get back the elements from the user
 - b. Select a rented tab on navigation bar.

4.1 WEB IMPLEMENTATION

4.1.1 *Firebase connection*

Using the credentials of the firebase cloud we will create a connection using JavaScript and initialize.

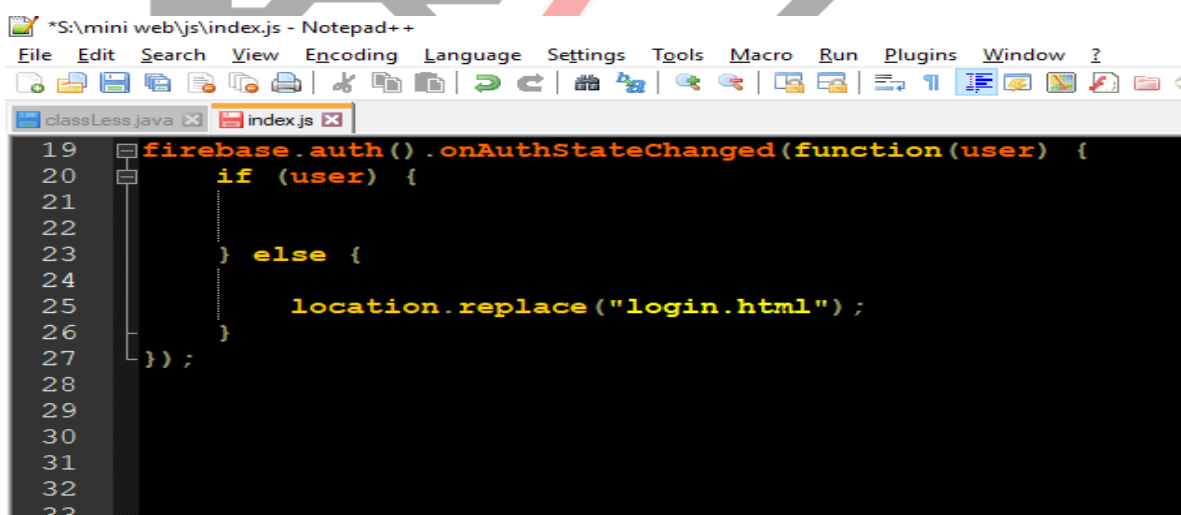


```

1 // Initialize Firebase
2 var config = {
3   apiKey: "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx",
4   authDomain: "project-id.firebaseio.com",
5   databaseURL: "https://project-id.firebaseio.com",
6   projectId: "project-id",
7   storageBucket: "project-id.appspot.com",
8   messagingSenderId: "842258283913"
9 };
10
11 firebase.initializeApp(config);
12
13
14
  
```

4.1.2 Sign In / Sign Up

Whenever user sign in or signup, we will authenticate using the code written below.



```

19 firebase.auth().onAuthStateChanged(function(user) {
20   if (user) {
21     // User is signed in
22   } else {
23     // User is signed out
24     location.replace("login.html");
25   }
26 });
27
28
29
30
31
32
33
  
```

V. CONCLUSION

The proposed solution to serve the need of farmers to fetch the information regarding the availability of agricultural equipment and to serve the need of manager in monitoring equipment issued to farmers is been solved by developing an Android Application for the farmer to interact and a Web Application for the manager.

REFERENCES

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