KHULNA UNIVERSITY OF ENGINEERING AND TECHNOLOGY, KUET

SESSIONAL REPORT

Course No: CSE 2200

Department of: Computer Science and Engineering

Project Platform: Android

Project Title: Tuition_Bank

Remarks

Date of Submission: 21.06.21

Name: Partho Choudhury Shoumya

Roll: 1807021

Year: 2nd

Semester: 2nd

OBJECTIVES

Objectives:

1. To help one to find tuition close to his/her residence and suitable in terms of subject preference and salary through android app.

2. To assist one to find best tutor among wide range of options and within limited budget capability.

INTRODUCTION

Introduction:

"Tuition_Bank" is an android based tuition finding application. By using this app, one can find tuition based on one's location, class and subject preference. Also guardians can advertise to find suitable teachers within their budget.

This app uses "Firebase" database in backend to store, retrieve, update and delete data. User's personal information such as email, password etc. are stored in authentication section of firebase to approve requests of users of signing in or signing up.

Advertising tuitions data are stored in realtime database of firebase and are retrieved when someone searches for a particular type of tuition list.

This app has an interactive and eye-catching UI so that users can easily understand how to use this app and hence, fulfill their need.

Detailed Description:

- The application starts showing a splash screen for 5 seconds.

- When a user installs "Tuition_Bank" app and opens it for the first time, an introductory slider of 4 slides will be shown informing the way and value of using this app. The user will be of mainly 2 types: 1) Tutor, 2) Tuition provider (Parent or student)

- Then if user is not already signed in, signup activity will come up in front. A "Login" button will be shown to direct user to login activity of this app. If a user wants to register him/herself in this application, he/she will provide necessary information in signup activity and click signup. On successful registration completion, user will be directed to the dashboard. On the other hand, if already an account exists, user will provide credentials to login activity and click login button. On successful registration completion, user will be directed to the dashboard.

- In dashboard a user will find 3 functions to perform. 1) Post Tuition, 2) Search Tuition and 3) Logout. If user clicks of "Logout" button, he/she will be logged out from the app exit the app.

- If user clicks on "Post Tuition" button, he/she will be directed to the post tuition activity. There he/she will provide all the necessary details such as area, salary, class, week days, contact number etc. and click submit button. Then a new tuition post will be stored in firebase and this advertisement will be used in tuition search from here on.

- If user clicks on "Search Tuition" button, user will be directed to the search tuition activity. In that activity user needs to provide user's preferred area to find tuition, preferred class to find tuition and preferred subject to find tuition. Then upon clicking the "Search" button, a list of available tuitions fulfilling all the criteria that user provided will be shown in a new activity. User can easily contact the advertiser by following the contact details

of any listitem. If user long press on any of the list item, a popup will appear containing all the fields of tuition details. There will be two buttons named "Update" and "Delete". If this particular list item was posted by this current user, then user can update any fields value by providing new value to this popup filed and then click "Update" button. Also by clicking on "Delete" button, user can delete this particular advertisement. But if current user is not the one who posted this tuition advertisement, then a toast will appear saying "Unauthorised attempt to update/delete" and the functions will not be performed.

Flowchart:

Below is the flow chart of "Tuition_Bank" app depicting all the functionalities:
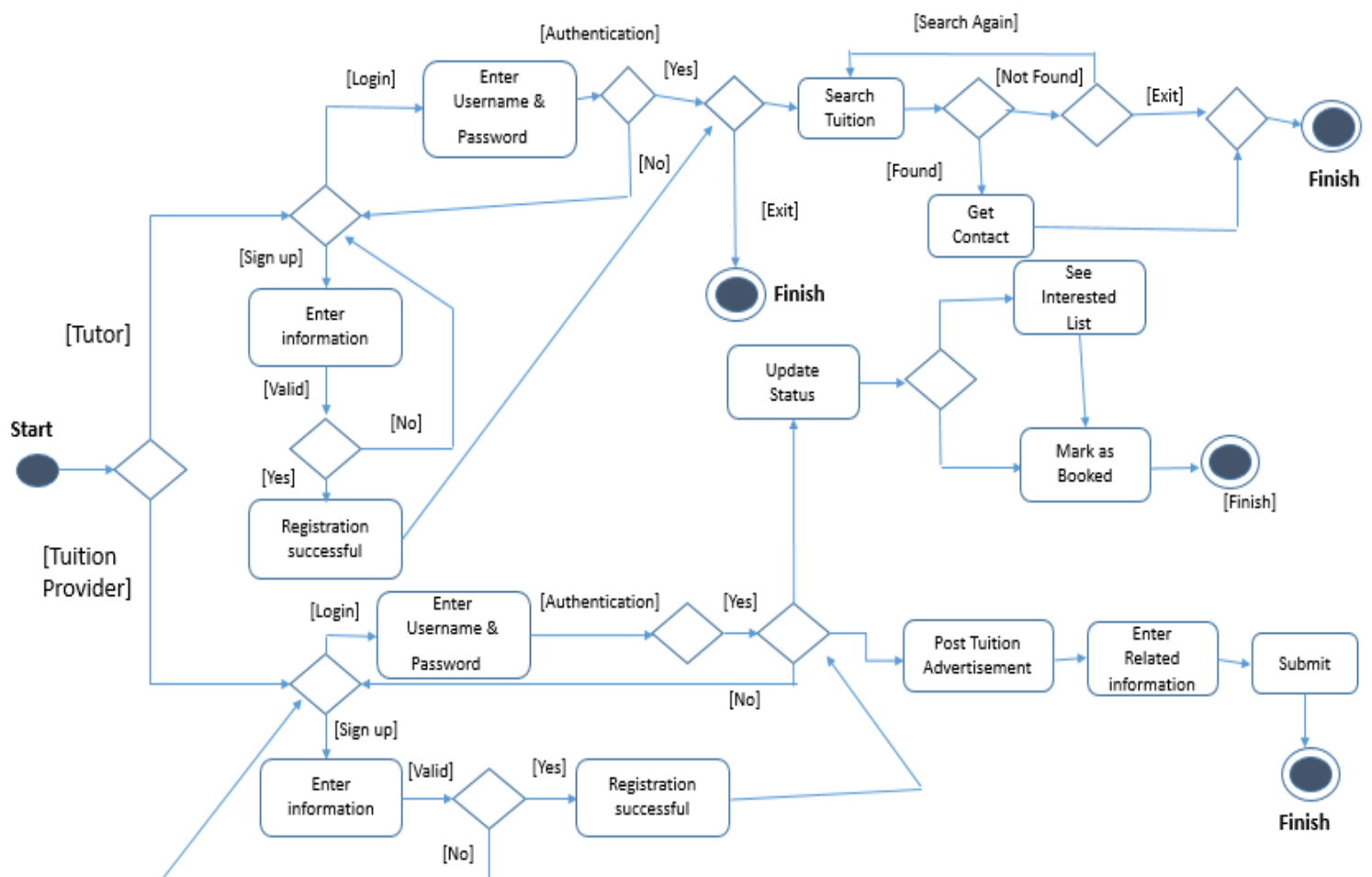
Fig 1: Flowchart of "Tuition_Bank" app

Schema Diagram:

The schema diagram or E-R diagram of "Tuition_Bank" app is as follow:
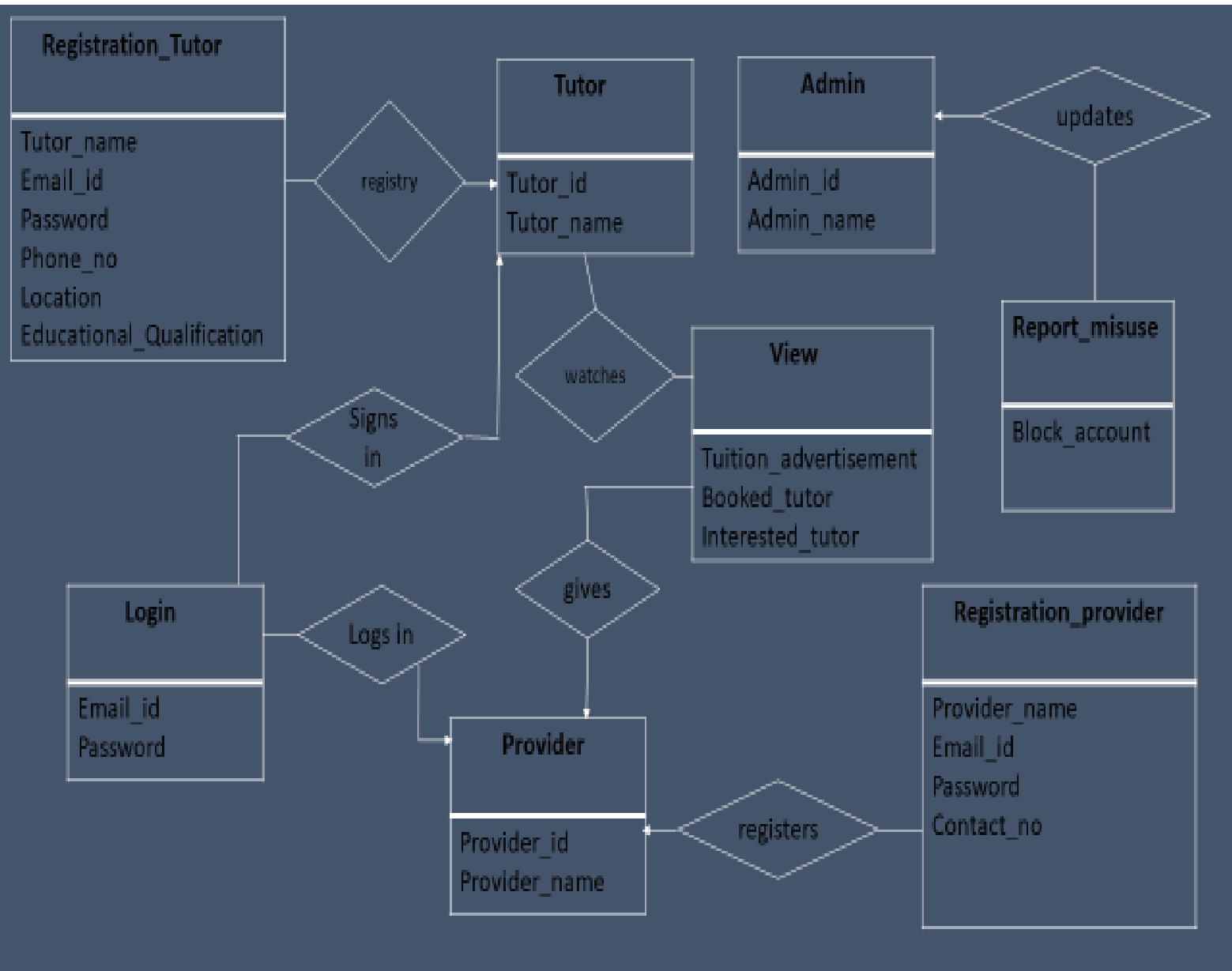
Fig 2: Schema diagram of "Tuition_Bank" app

Sequence Diagram:

Sequence diagram is used to model the interactions between the actor and the objects of the system along with interactions between the objects themselves. Sequence diagram shows the sequence of interactions that take place during particular use case. "Tuition Bank" has five use cases namely,

1. Sign up as provider.
2. Sign up as tutor.
3. Post Advertisement.
4. Search for tuition.
5. Update tuition status.

Sequence diagrams for use cases are shown in below:

1. Sign up as provider/tutor:

Using this use case, user can sign up as a provider. The sequence of interactions for this use case is shown below:
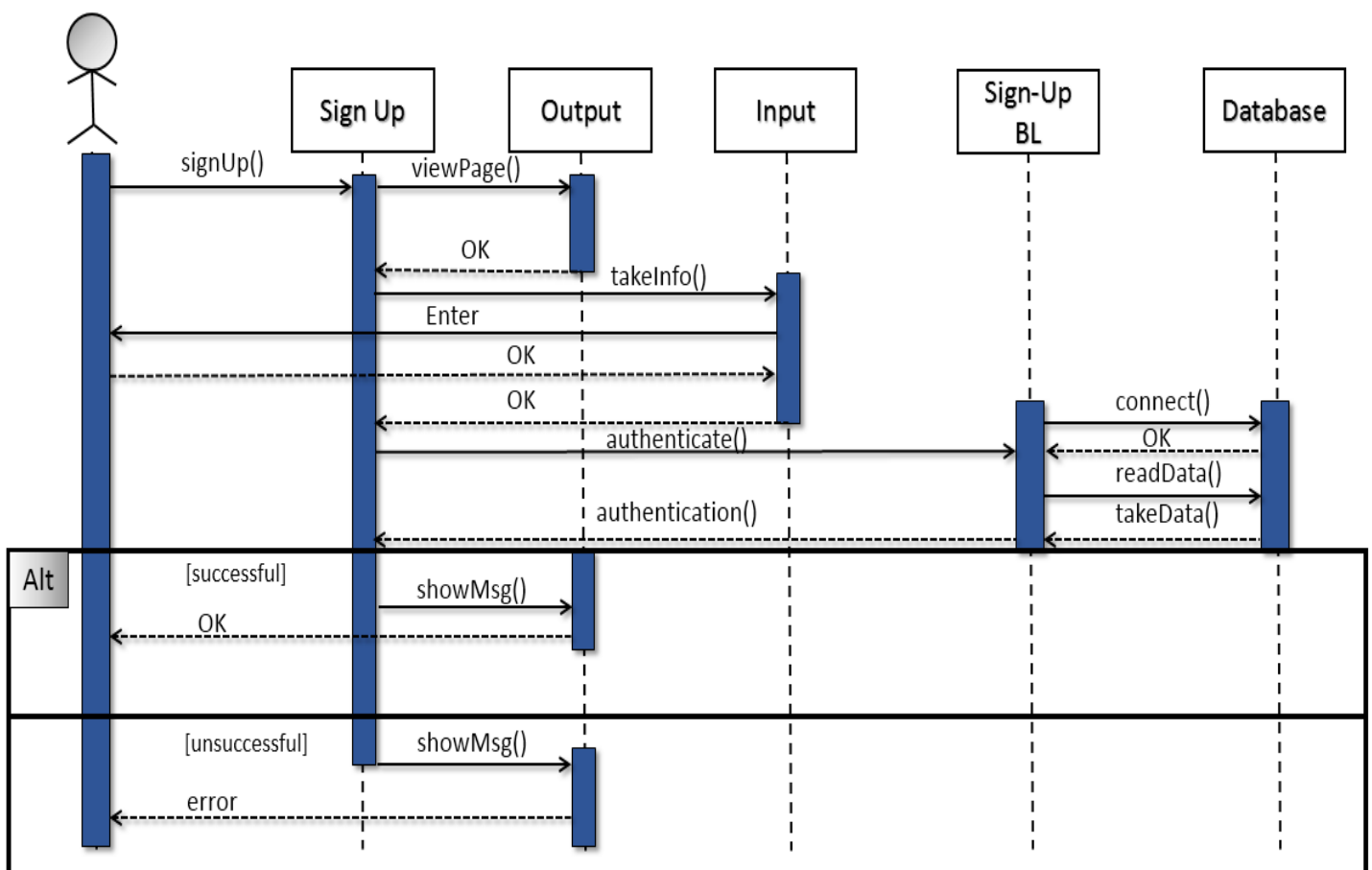
Fig 3: Sequence diagram for sign up as tutor/ provider

2. Login as provider/tutor:

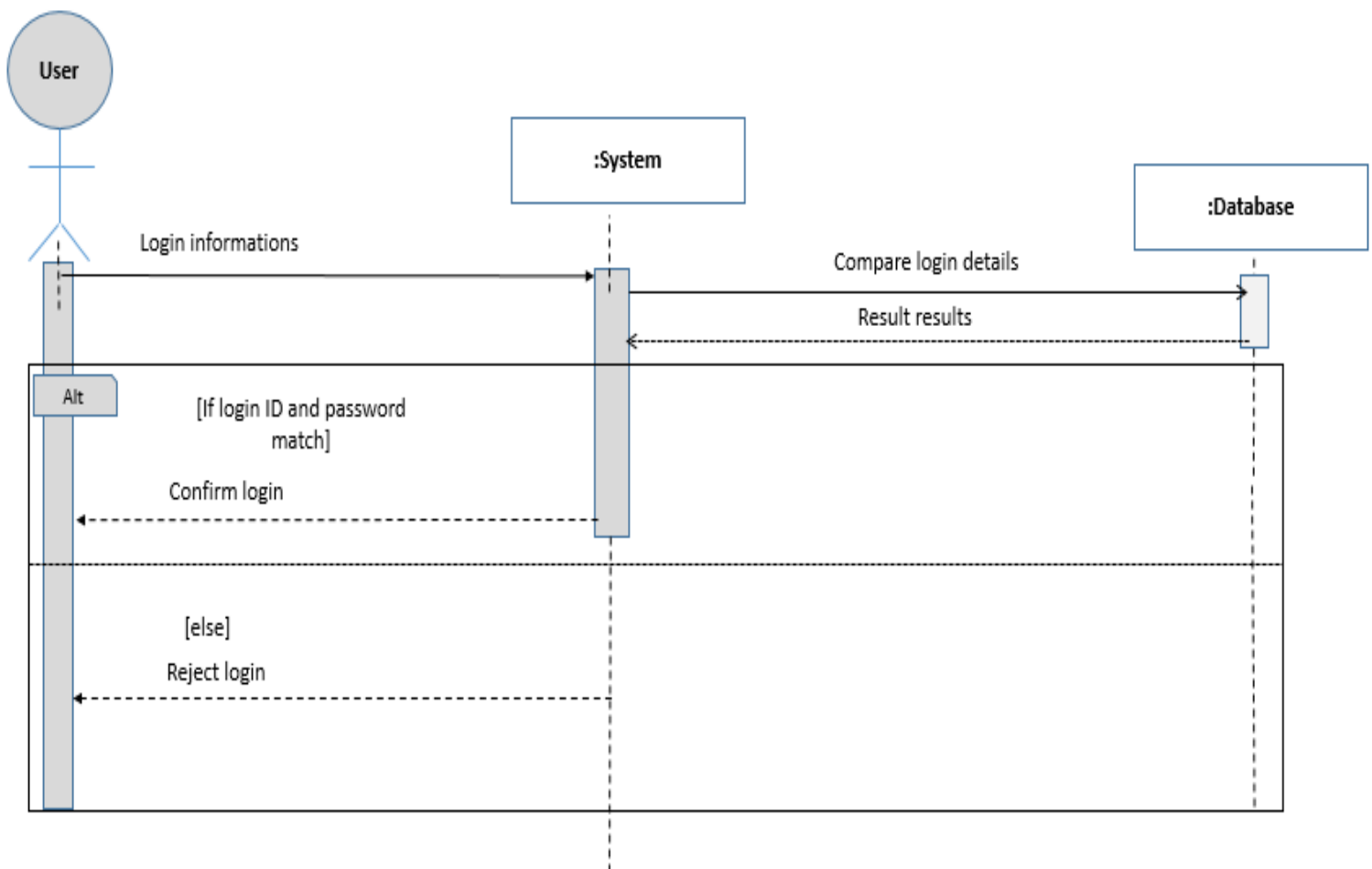Using this use case, user can log in as a provider. The sequence of interactions for this use case is shown below:

Fig 4: Sequence diagram for login as tutor/provider

3. Post Advertisement:

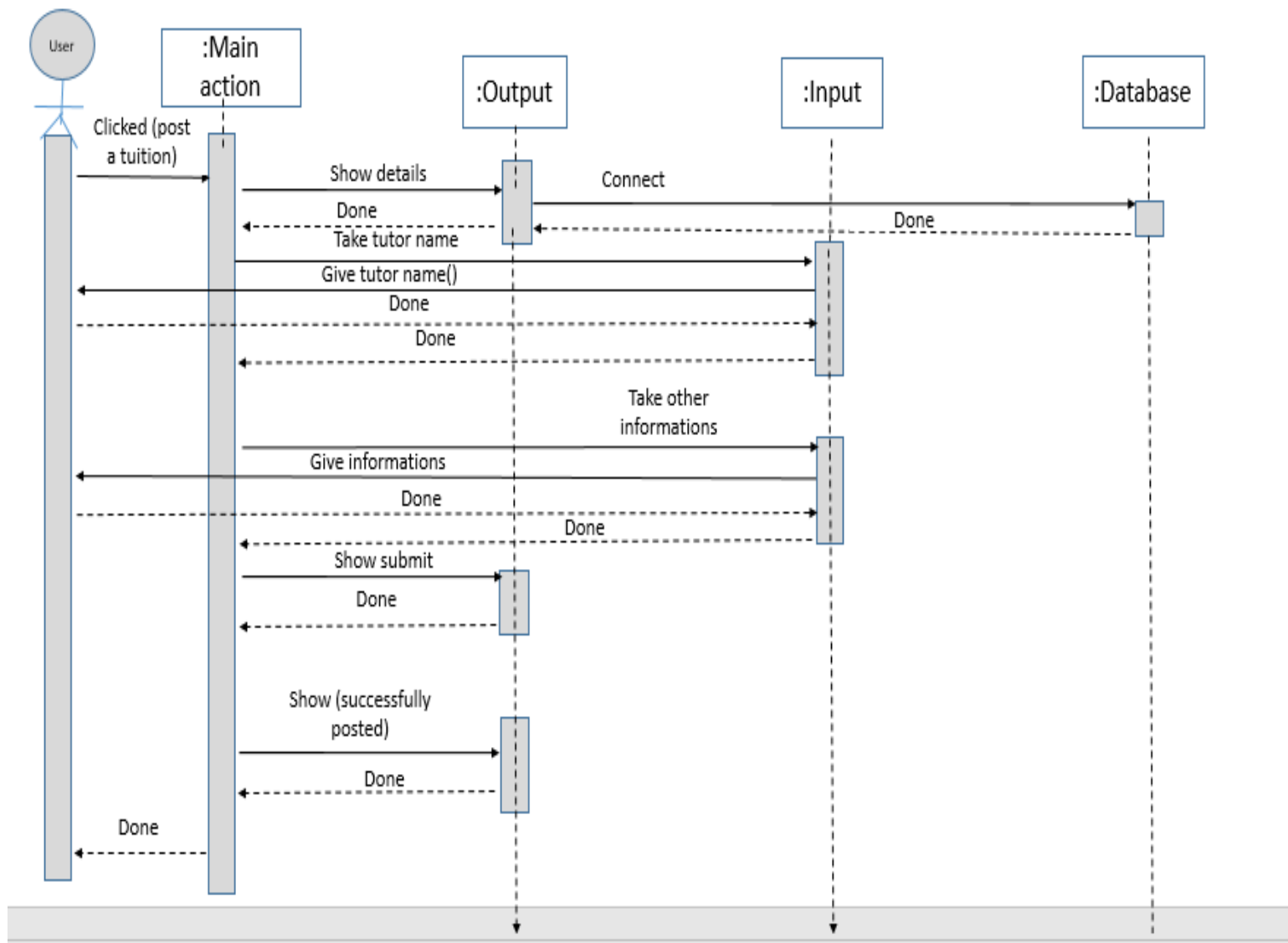Using this use case provider can post advertisement:

Fig 5: Sequence diagram for post advertisement

4. Search for Tuition:

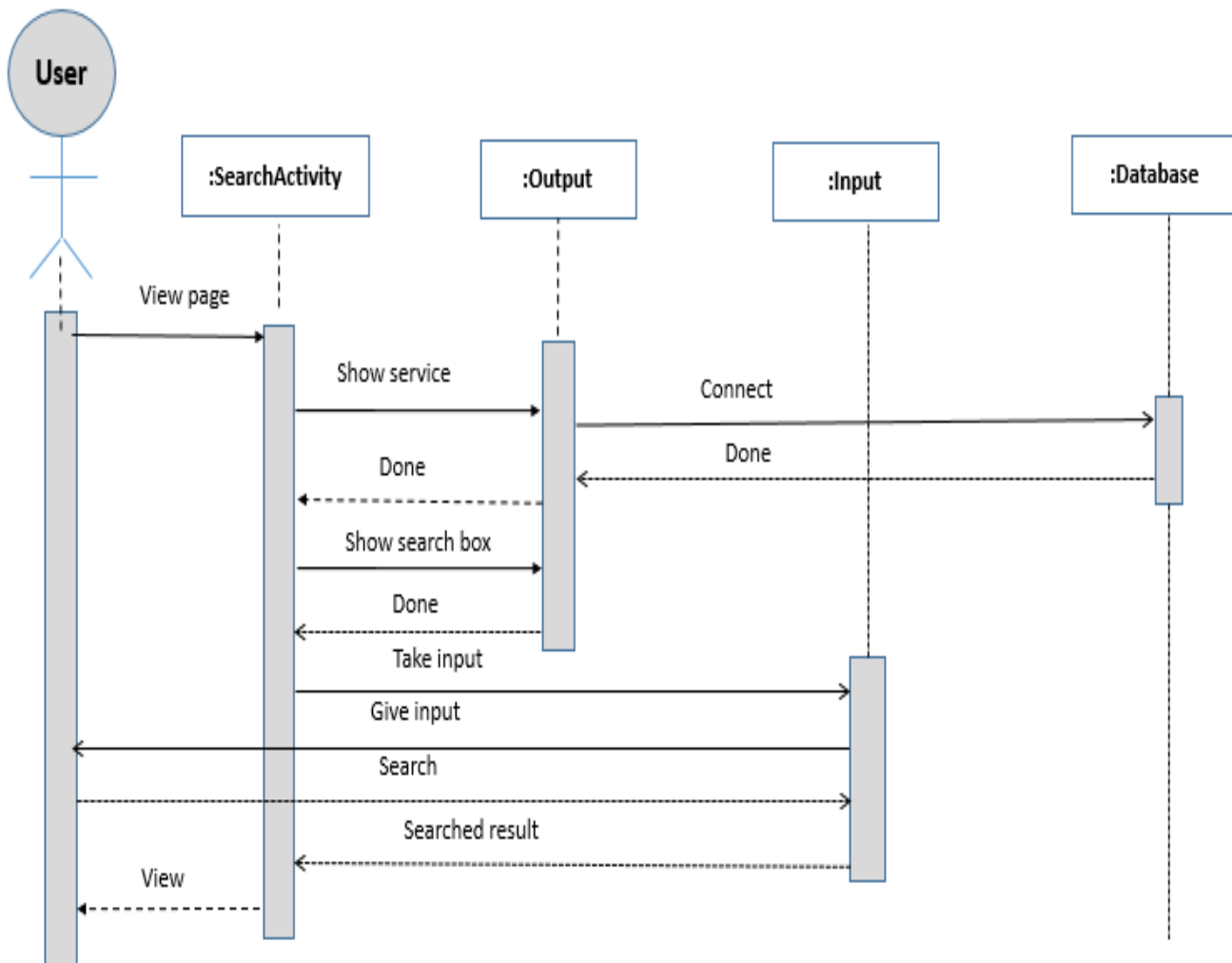Using this use case tutor can search for tuition:

Fig 6: Sequence diagram for search tuition

5. Update Tuition Status:

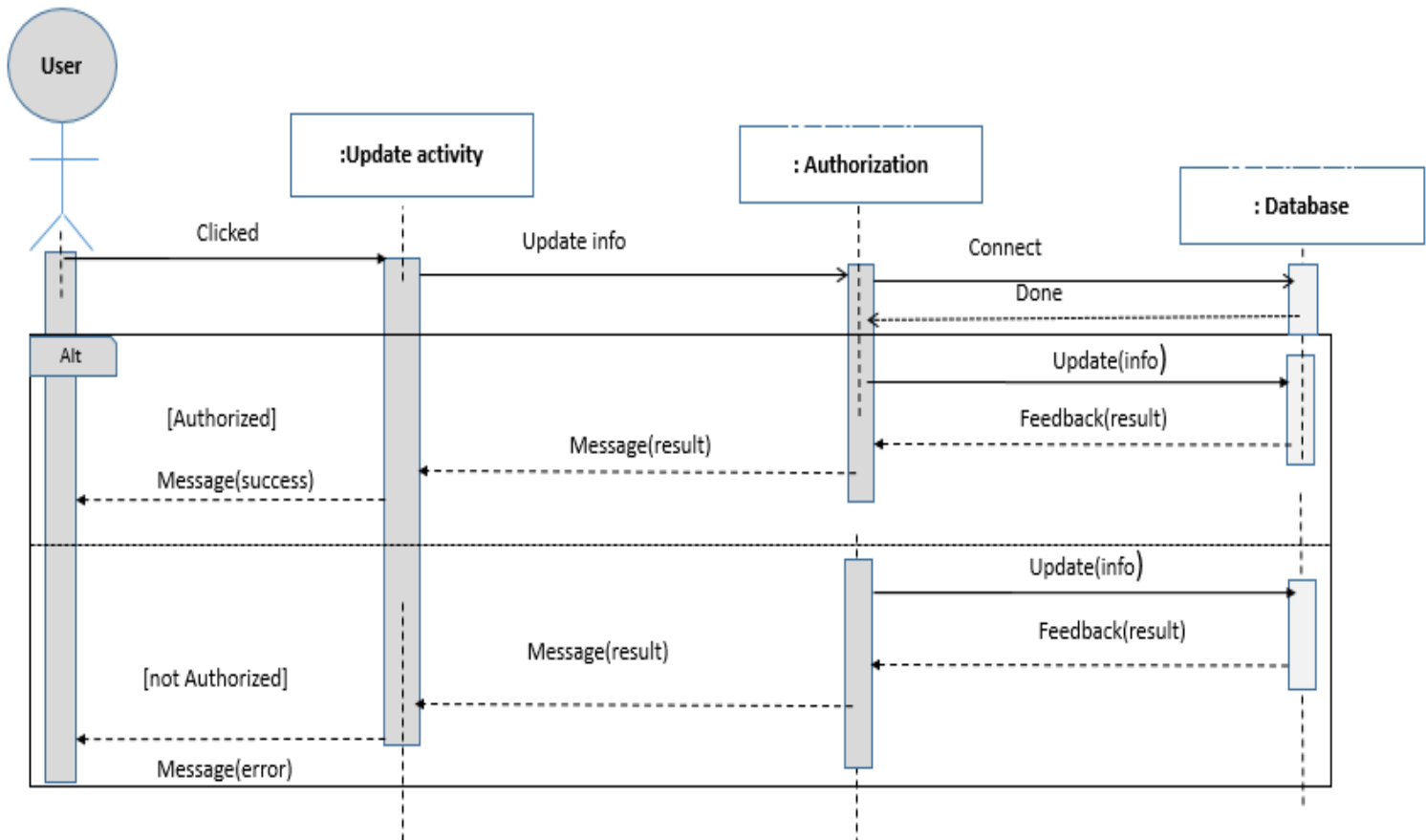Using this use case tutor can update tuition status:

Fig 7: Sequence diagram for update tuition status
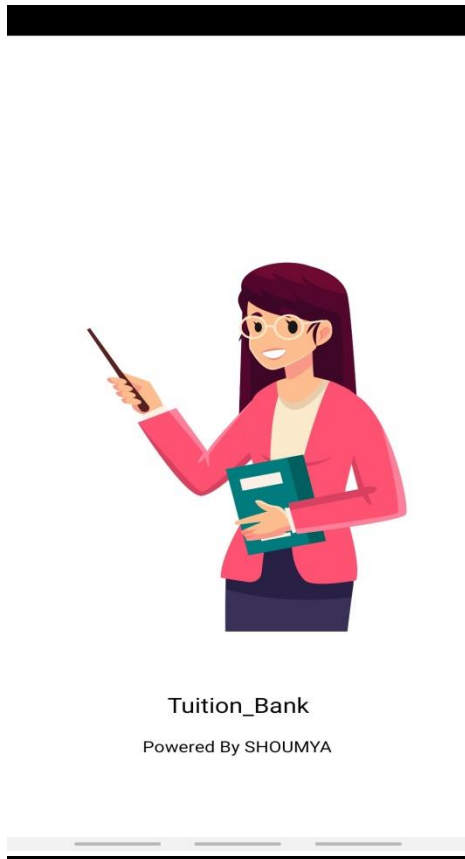
Detailed visualization:

Tuition_Bank

Powered By SHOUMYA

Fig 8: Splash Screen at the beginning

Registration

✉ Email

🔒 Password 👁

SIGNUP

Already Registered?

Login Here
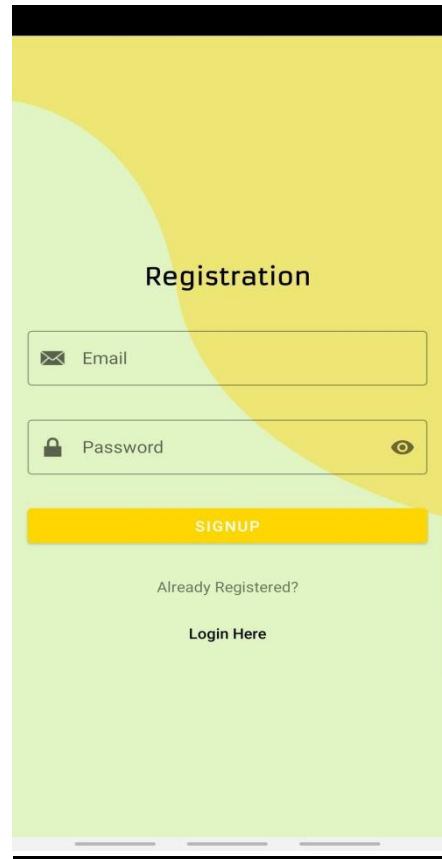
Fig 9: Registration Screen

Login

✉ Email

🔒 Password 👁

LOGIN

Not have an accountt? **Signup Here**
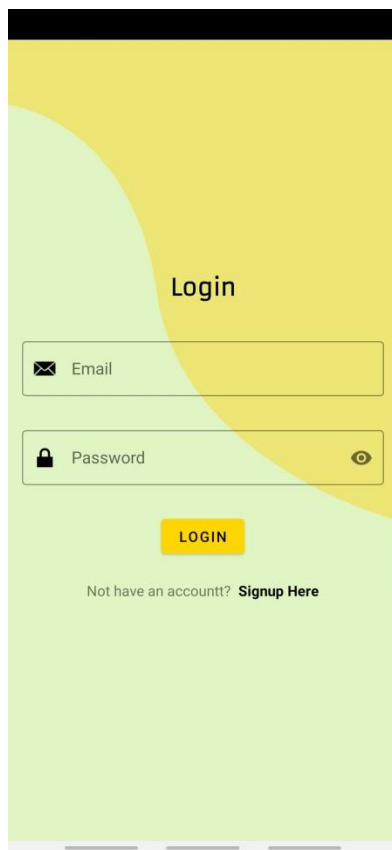
Fig 10: Log in Screen

Login

Email
✉ shoumyac1@gmail.com

Password
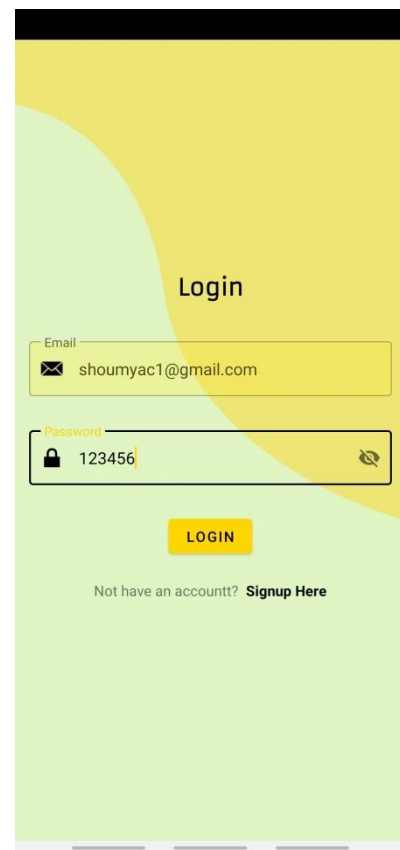🔒 123456 👁

LOGIN

Not have an accountt? **Signup Here**

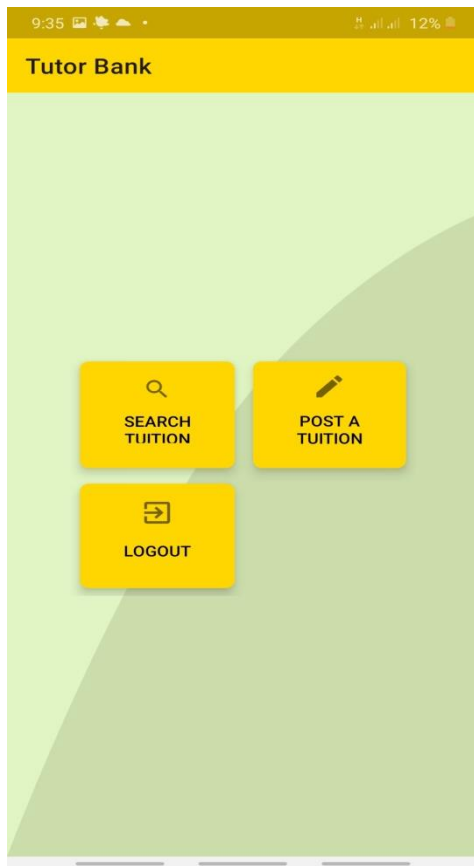**Fig 11: Log in with a valid Email**

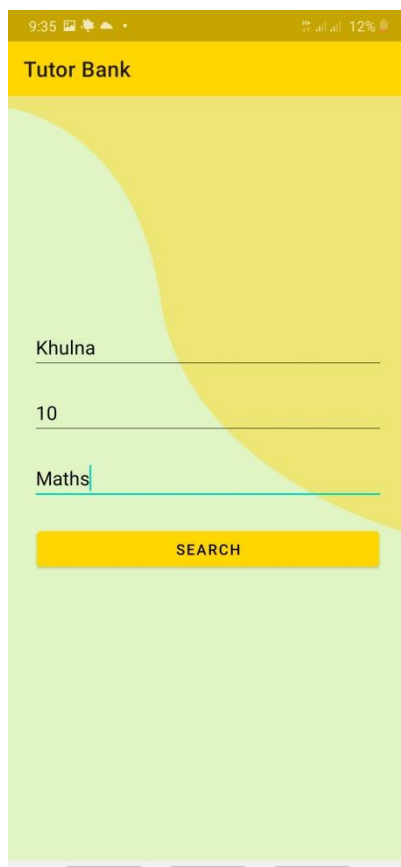**Fig 12: Home Screen**
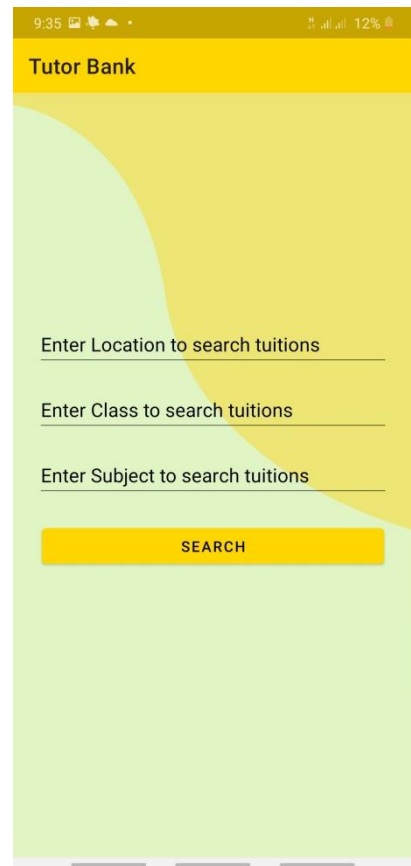
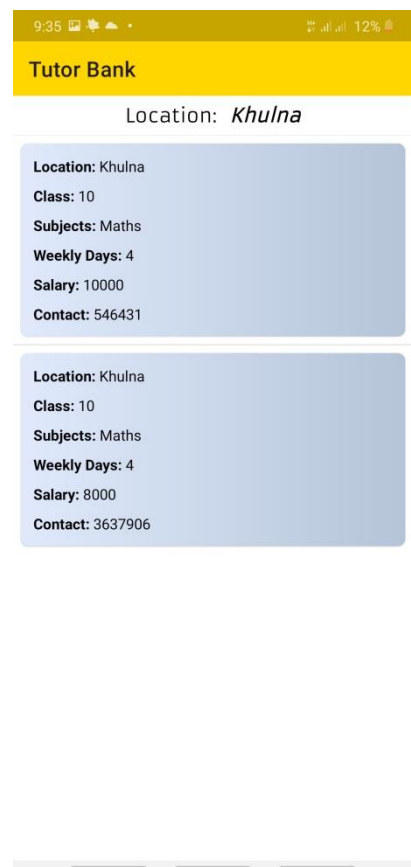**Fig 13: Search Tuition**

Fig 14: Search for tuition

Fig 15: Search Result

Fig 16: Posting a Tuition

Fig 17: Inserting Tuition Details

Fig 18: Tuition Posted!

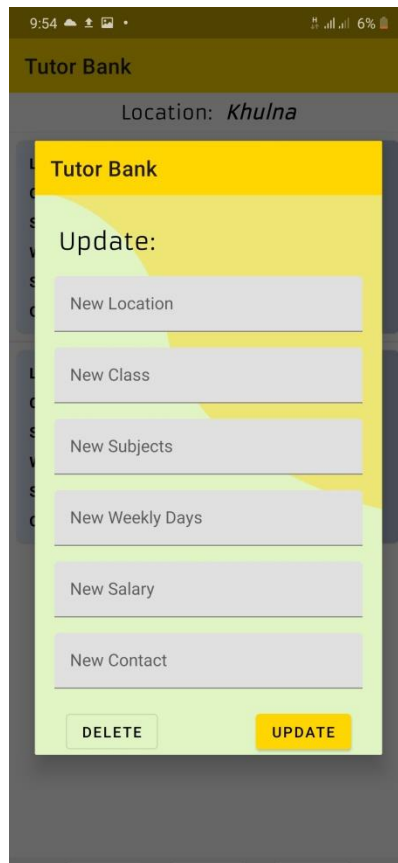**Fig 19: Tuition is found while searched**

Fig 20: By Long pressing in the list item of tuition list, It can be updated or deleted if that particular advertisement was posted by the current user.

TARGET VS. ACTUAL ACCOMPLISHMENTS

Target:

The initial target was to make this android application useful for tutor providers and mentors. Hence the usage of a beautiful and eye-catching UI was necessary. In addition, to make this app dynamic, the usage of a realtime database was a must. Intention was to design this app as efficiently as possible so that its stability increases and bugs decreases.

Accomplishments:

The success that this application achieved was beyond all expectations. A number of students and mentors tried this app and gave very positive feedbacks. The UI of this app was found very interactive and astonishing. The usage of Firebase database made this app truly dynamic one and hence, users found necessary information in a sheer speed. The functionalities of this app was designed very carefully and implemented as efficiently as possible. As a result, there were rarely any bugs in this app.

RISKS AND ISSUES

Risks and Issues:

1. The "Tuition_Bank" app was developed for android version 5.1 or above. So any android device that runs below that version won't be able to use this app.

2. Firebase database was used in this app to make this app dynamic one. So data retrieval and update operations are fully dependent on internet connectivity and speed of the internet connection. Sometimes these operations may take a while to complete and hence users may find it annoying to use this app.

3. Firebase is a Google owned third-party database. So if Google's servers go down, then the app will become completely useless.

Discussion and Conclusion:

"Tuition_Bank" android application project was chosen to be developed for a variety of reasons. But most important one among them was to help one to find and provide tuition opportunities with ease and free of media charge using modern technologies.

We learnt about android mobile platform and how to use it to develop applications in our first lab. Then we started to work on our projects from scratch. Sometimes things became very tough. Then our teachers guided us to overcome the hurdles.

After some lab days, Firebase database was introduced to us and we learnt how to use it in our application to make the app dynamic.

We followed all the instructions during lab works and while developing projects. As a result, the projects were built almost perfectly. During development phase, we became confused a number of times on how to implement a desired feature. Then we used available online resources to solve the problem. In addition, our mentors were always there to help us to solve all the problems.

We learnt many things while developing the "Tuition_Bank" project. Surely this immense experience will help us in future to develop better applications.

REFERENCES

References:

1. https://docs.oracle.com/en/java
2. https://developer.android.com/docs
3. https://material.io
4. https://firebase.google.com/docs
5. https://stackoverflow.com