Application Development 2 (Mobile)
420-952-VA section 05812
Vanier College

Tutor Hiring App.

Final Deliverable

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Submitted To:

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TABLE OF CONTENTS

1. INTRODUCTION

Technology makes our lives much easier. Everything is far from our fingertips. There are many ways and devices of using technology such as Computers, Mobile Devices, and much more. Many people are comfortable using Mobile devices for convenience and security. Here I am also developing a mobile application called Tutor Hiring App, which will make parents' lives easier in finding a perfect Tutor for their children.

System Planning

a. **Business case:** Education is important to human life and in the cycle of the 21st century, it is hard to maintain a standard education level where many social media are keeping our young generation from studying. A good tutor can make learning enjoyable for a student, so, it is time to develop a platform for parents to find an ideal tutor for their kids to teach them a satisfactory level of a subject where they feel weak. On top of that, using technologies we can create employment opportunities for a tutor to make some extra money.

b. SWOT Analysis:

c. Strengths:

1. Using a secure Android Operating System to develop the application.
2. Using Different Activities to make the application easier.
3. Using Intent Class to keep the application data consistent.
4. Data structures such as Array, ArrayList, etc., and SQLite databases are used during the development process.
5. Different widgets have been used to make the application more understandable.

Weaknesses:

1. Cannot be successful without a wide range of advertisements.
2. Collecting tutors to register for applications will be a challenge.
3. Collecting parents to register for the application will be a challenge too.

Opportunities:

1. Huge opportunities in social and business areas.
2. Employment opportunities for mobile developers.
3. A great deal of teaching and learning practices for both Tutor and Parents.
4. A good amount of profit will be obtained from commissions from both Tutors and Parents while using the applications.

Threats:

1. Stolen data from the database of the application.
2. Use of fake tutor experience to get extra priority.

3. Lack of manpower to maintain the application.
4. Lack of funds to continue offering the updated application.

d. Constraints: Every project has to manage six constraints: **Scope, Risk, Benefits, Schedule (Time), Budget, and Quality**. The success of a project depends on the skills and knowledge to take into consideration all these constraints and develop the plans and processes to keep them in balance.

1. **Scope:** This project is considered in our scope based on lessons we have gotten from our professor so far. Using different Widgets, Activities, Classes, Data Structures, Orientations, Database etc.
2. **Risk:** There would be a huge risk if data were not stored safely.
3. **Benefits:** Parents and Tutors both contributors will be benefited from this application.
4. **Schedule (Time):** The amount of time dedicated to this project would be very tight to deliver the deliverables on time because of other three projects of three different courses need to be submitted at the very same time.
5. **Budget:** Since this project is part of our course, there is not much to worry about the budget.
6. **Quality:** The quality of this project is excellent, since most of the concepts we have learned during our course.

e. **Feasibility:** Feasibility studies examine potential risks to determine whether they're worth taking. A comprehensive feasibility study can distinguish real economic opportunities from investments that could fail.

A project description must include **a detailed description of the project scope what the project will do and how it will do it**.

The scope of this project is reasonable since we have the necessary materials and support from our teacher.

This project will connect the parents with tutors to hire them for their kids.

Parents and tutors have to be registered in order to use this application. Once they register, Parents will find the Tutor who is a perfect match for their children based on their Subject and the Hourly fees of the tutor. When Parents find the ideal tutor, they will confirm the reservation of a tutor on a specific date and time. Finally, pay and exit from the application.

f. **Project Management:** Project management is **the use of specific knowledge, skills, tools, and techniques to deliver something of value to people**.

I will use my knowledge of Android OS with Android Studio IDE to develop this project. Here the user will get the taste of different Widgets, Orientations, and message display using Toast Class, inter-connection between activities using Intent class, and display the same data in different orientations using Bundle Class and many Buttons, TextView and EditText are used to display and receiving input from users. End of this project users like Parents and Tutor will be happy to have an application that gives them an opportunity to help each other.

System Analysis

a. Fact-Finding and answer the following questions:

Who: This project will be used by Parents and Tutors.

What: Parents will find tutors for their children.

Where: Possible to use any location but for now because of time constraints considering using only local locations City of Montreal and surrounding areas.

When: The application can be used at any time.

How: Users can use this application to download into their phones.

Why: This application is to solve the problem of a parent finding a tutor for their kids.

b. Requirement Modeling:

Outputs: A necessary description of a tutor object will be displayed as a result when a parent searches for a tutor by Subject.

Inputs: Parent's and Tutor's objects will be inserted as input.

Processes: ArrayList data structure, SQLite Database, and various types of variables are used to complete this application.

Performance: Performance is at a satisfactory level.

c. Data and Process Modeling as in Structured Analysis:

Process modeling is the study of what the business does now and what it should be doing. Data modeling is the study of what data the business needs to enable these activities to be completed.

This project directs users to register as a Parent by ParentRegisterActivity or a Tutor by TutorRegisterActivity depending on the choice made by users if the users are not already registered. The data needed to enable those activities for the Parents are the parent's full name, full address, and telephone numbers, and for the Tutors, the tutor's full name, full address, telephone number subject name, hourly fees, and experience.

Once they are registered application will redirect to the specific activity pages such as ManageParentActivity or ManageTutorActivity depends on the user type.

ManageParentActivity: It holds multiple functionalities such as:

1. **Find Tutor**:

a). Here a Parent can search for a Tutor by a subject, if any Tutor offers the search subject, a brief detail will be displayed such as First name, Last name, Telephone number, Hourly fees, and Experience.

b). Once the Parent finds the searching Tutor, the reservation will be possible to make by clicking the ReserveTutor button.

c). Before the final confirmation, parents need to be confirmed their information by clicking the Confirm button. A reservation confirmation with the specific Parent and Tutor will be displayed upon confirming the Parent details.

2. **Update Parent Info.:**

a). Here a Parent can update their profile.

3. **Manage Child:**

a). Here a Parent can do the CRUD operation on their children's saved data. Can be possible to add a new child by pressing the Add button or

b). View, Update or Delete by pressing View, Update, Delete ImageButton.

ManageTutorActivity: It gives a Tutor to Update their profile by pressing Update Tutor Info. Or Exit from this operation of the application.

Tutor Hiring App. Toolbar:

The Toolbar of Tutor Hiring App. has many useful shortcuts such as:

1. **Find Tutor** with a **searching icon**,
2. **Google Maps as a means of contacting us** using a maps icon.
3. **Update Parent Info.**
4. **Update Tutor Info**
5. **Contact Developer:** This menu is giving multiple ways to connect to the developer of this application, such as Full name, and ID # with **Vanier College visit Link**, **GitHub Link,** and **LinkedIn Link**.

d. Modeling Documents:

1. Functional Decomposition Diagram:

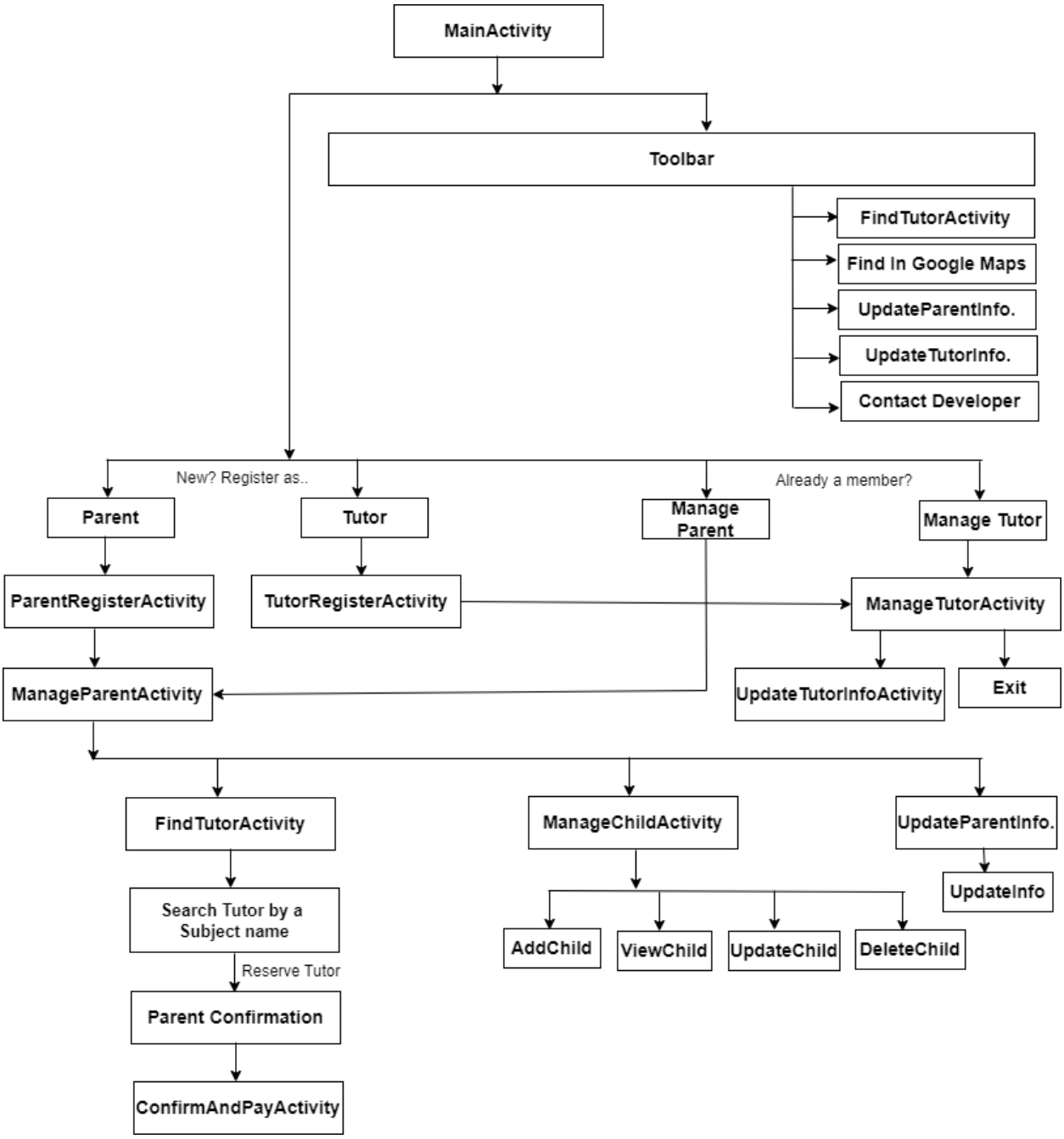


Fig: Functional Decomposition Diagram (FDD) of Tutor Hiring App.

2. Data Flow Diagram

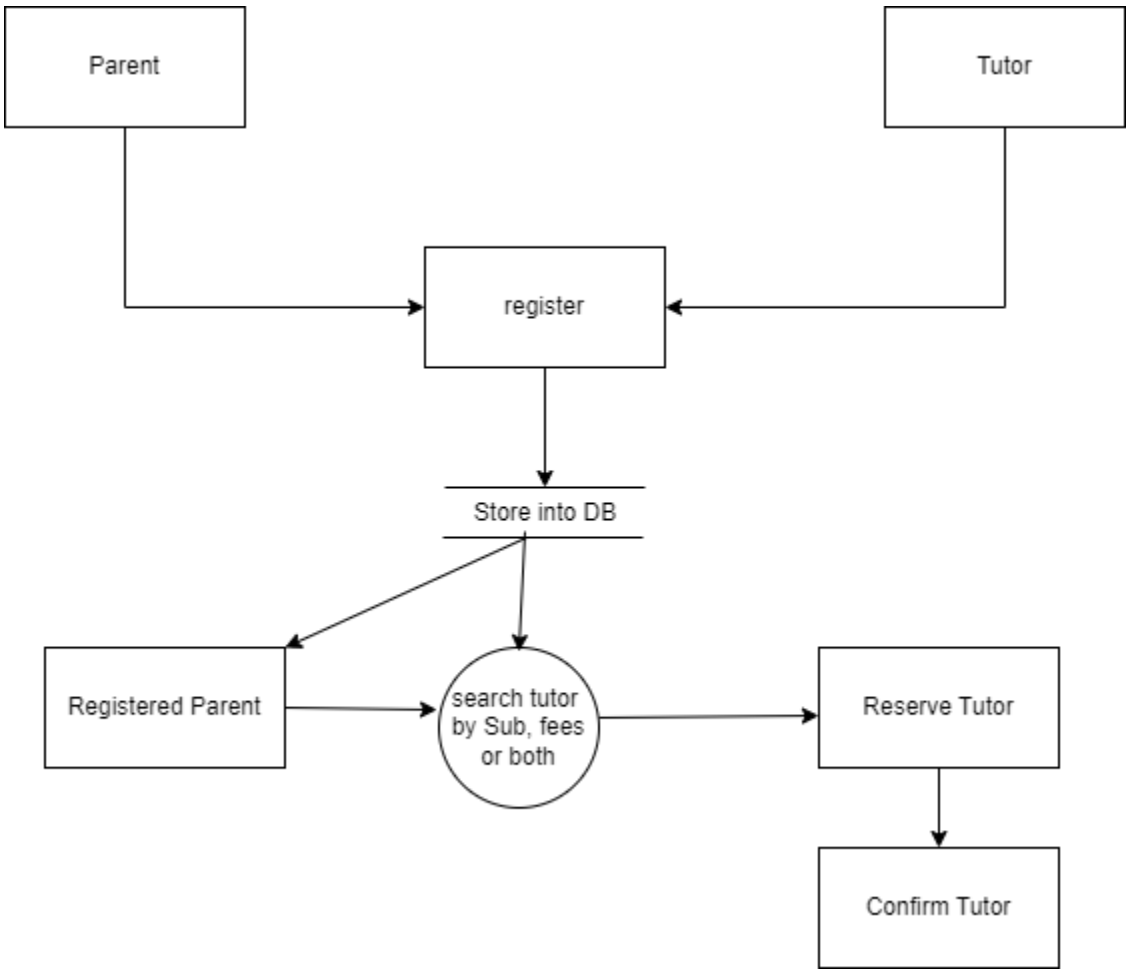


Fig: Data Flow Diagram (DFD) of Tutor Hiring App.

e. Object Modeling using UML (Unified Modeling Language) notation:

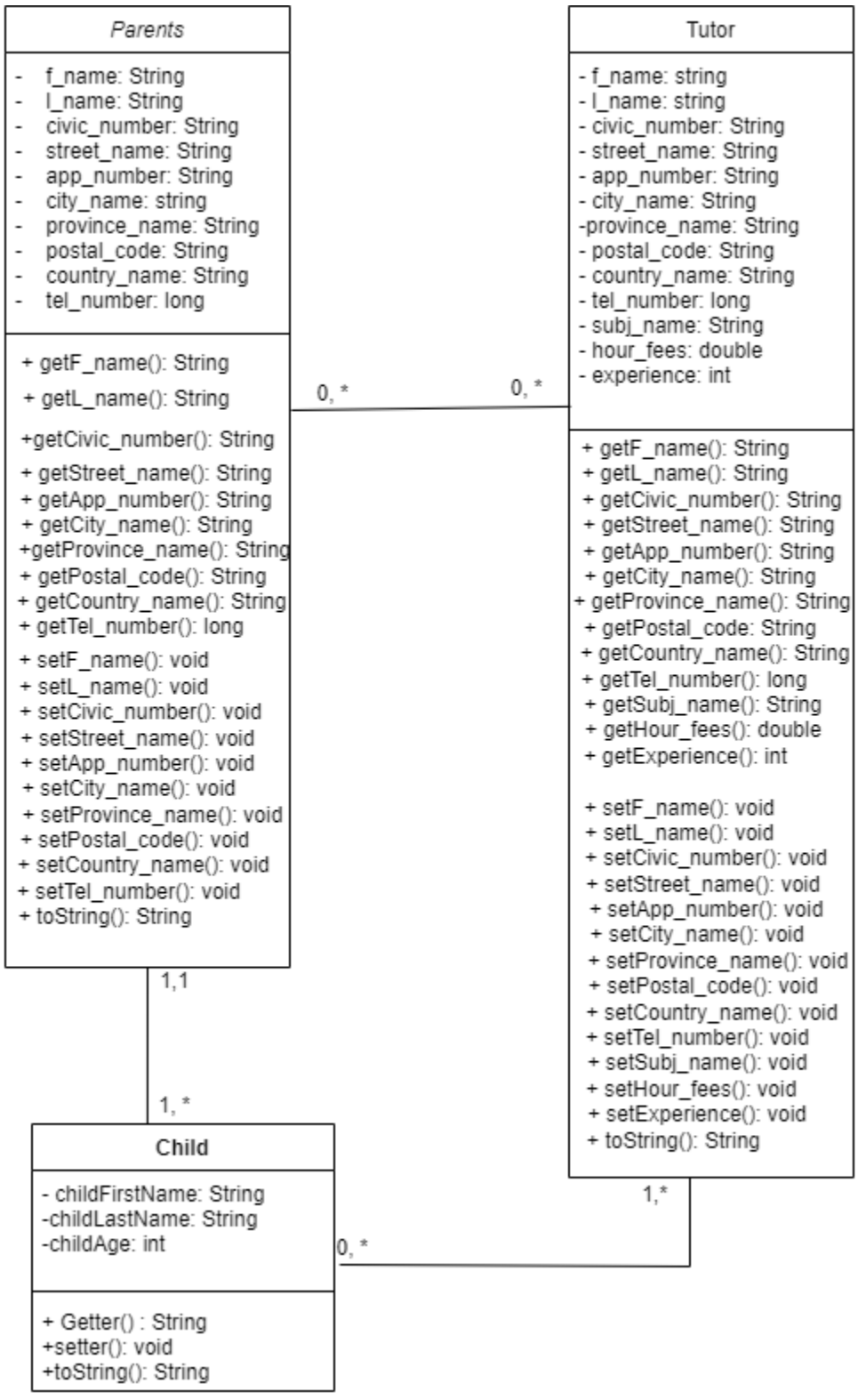


Fig: UML diagram of Parent and Tutor and Child Classes.

f. Data Dictionaries:

for a Parent:

Variable names	**Types**	**Description**
f_name	String	Parent's first name
l_name	String	Parent's last name
civic_number	String	Parents's home number
street_name	String	Parent's street name
app_number	String	Parent's app. number
city_name	String	Parent's city name
province_name	String	Parent's province name
postal_code	String	Parent's postal code
country_name	String	Parent's country name
tel_number	long	Parent's telephone num.

For a Tutor:

Variable names	**Types**	**Description**
f_name	String	Tutor's first name
l_name	String	Tutors's last name
civic_number	String	Tutor's home number
street_name	String	Tutor's street name
app_number	String	Tutor's app. number
city_name	String	Tutor's city name
province_name	String	Tutor's province name
postal_code	String	Tutor's postal code
country_name	String	Tutor's country name
tel_number	long	Tutor's telephone num.
subj_name	String	Tutor's subject name
Hour_fees	double	Tutor's hourly rate
experience	int	Tutor's years of experience

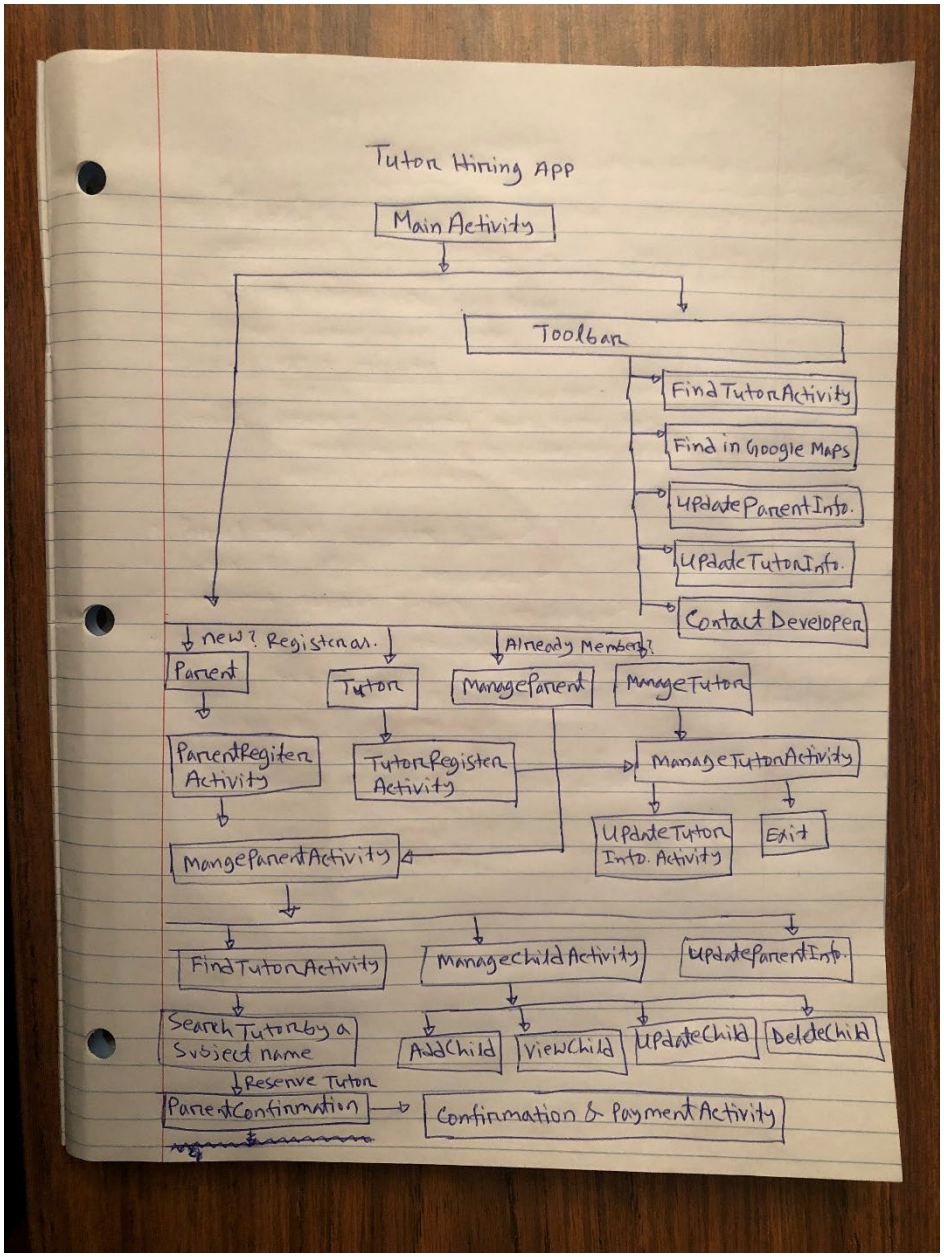
For a Child:

Variable names	**Types**	**Description**
childFrastName	String	Child's first name
childLastName	String	Child's last name
childAge	int	Child's age

System Design

a. Development Strategies: Blueprint mobile app design:

Tutor Hiring App Project Blueprint:



b. System Design for Prototyping: First prototype Physical Design:

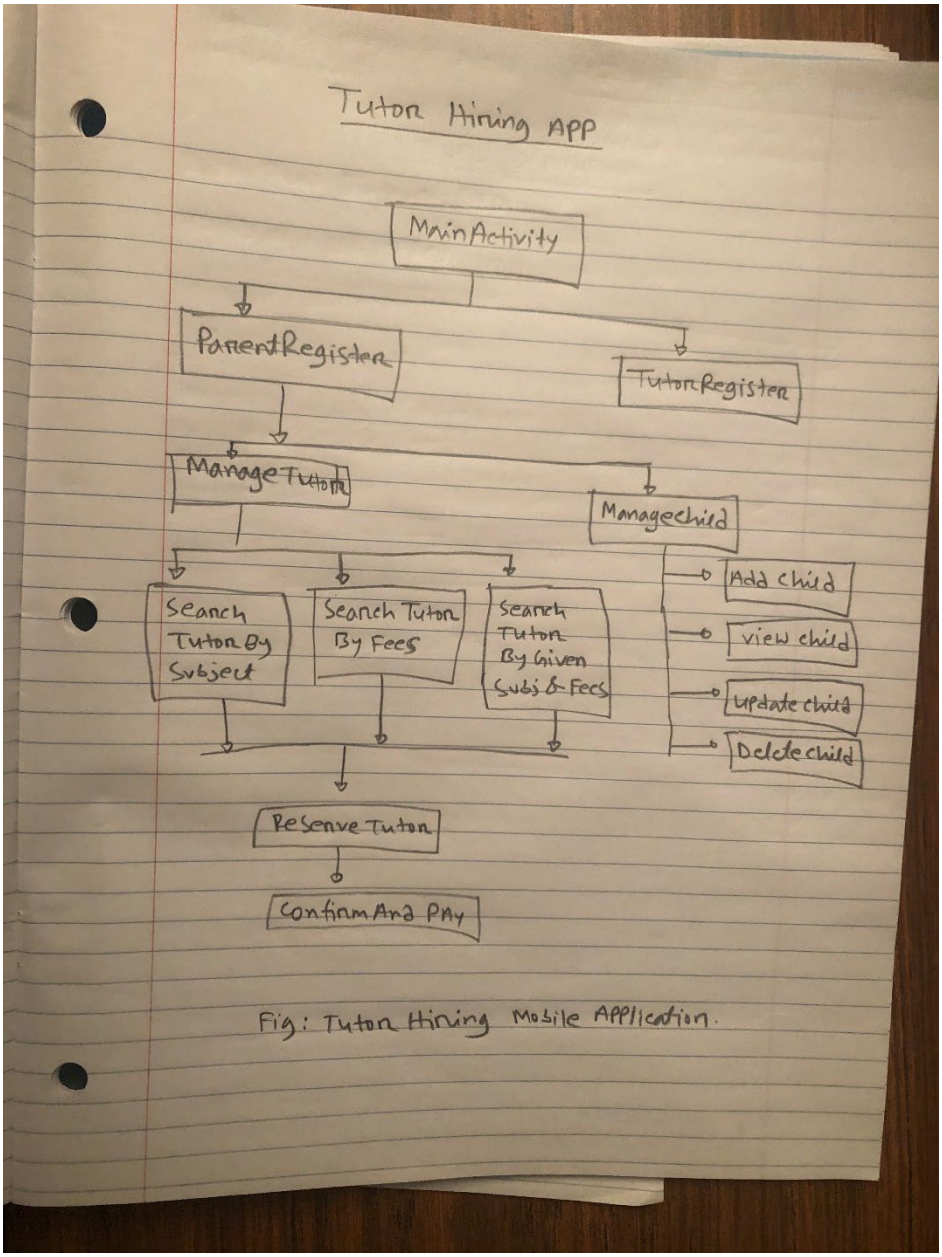


Fig: Tutor Hiring App first draft

c. Output design: type of Report to be printed or visualized on mobile screen:

1. Exception Reports:

Display an error message when Pressing the Register button in ParentRegisterActivity.

Display an error message when Pressing the Register button in TutorRegisterActivity.

Display an error message when Pressing the Reserve Tutor button without selecting a Tutor in FindtutorActivity.

Display an error message when Pressing the Save Record button in AddChildActivity.

Display a message when entering any wrong input for example entering a string into the tel_number field rather than numeric values, etc.

2. Summary Reports:

Keep a record of the activity of a Parent or a Tutor on a daily basis or weekly basis based on how frequently their activities are in the application.

d. User Interface Design:

There are multiple User Interface designs are shown below such as MainActivity, ParentRegisterActivity, TutorRegisterActivity, ManageParentActivity, ManageTutorActivity, FindTutorActivity, ManageChildFragment, UpdateParentInfoActivity, UpdateTutorInfoActivity, AddChildActivity, ViewChildActivity, SearchTutorActivity, ConfirmParentActivity and ReservationConfirmation Activity with the portrait orientation and Landscaping orientation.

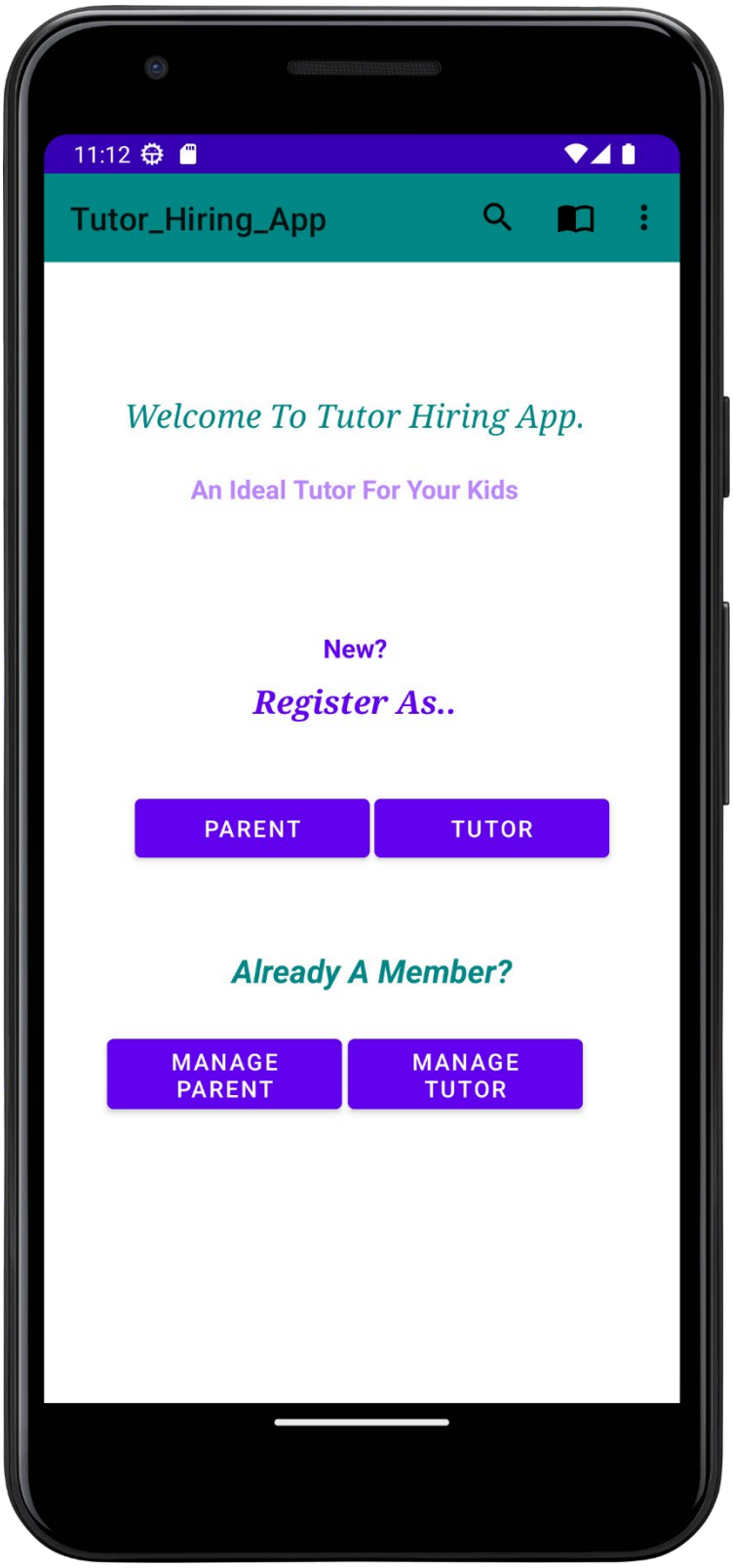


Fig.: User Interface design of MainActivity Portrait Orientation.

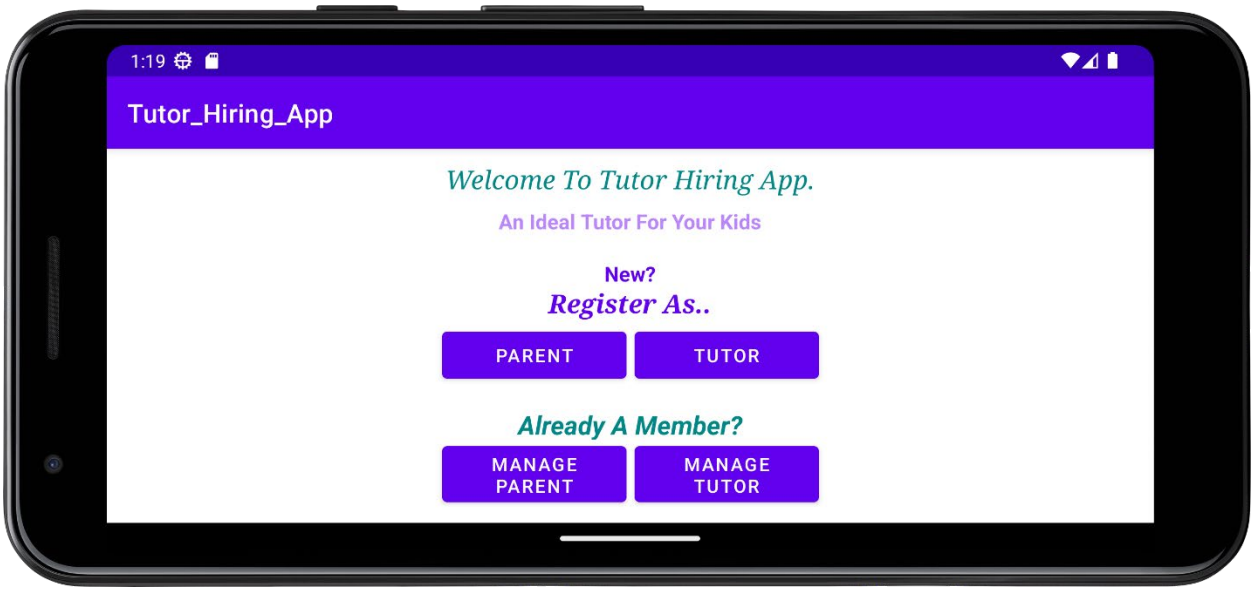


Fig.: User Interface design of MainActivity Landscaping Orientation.

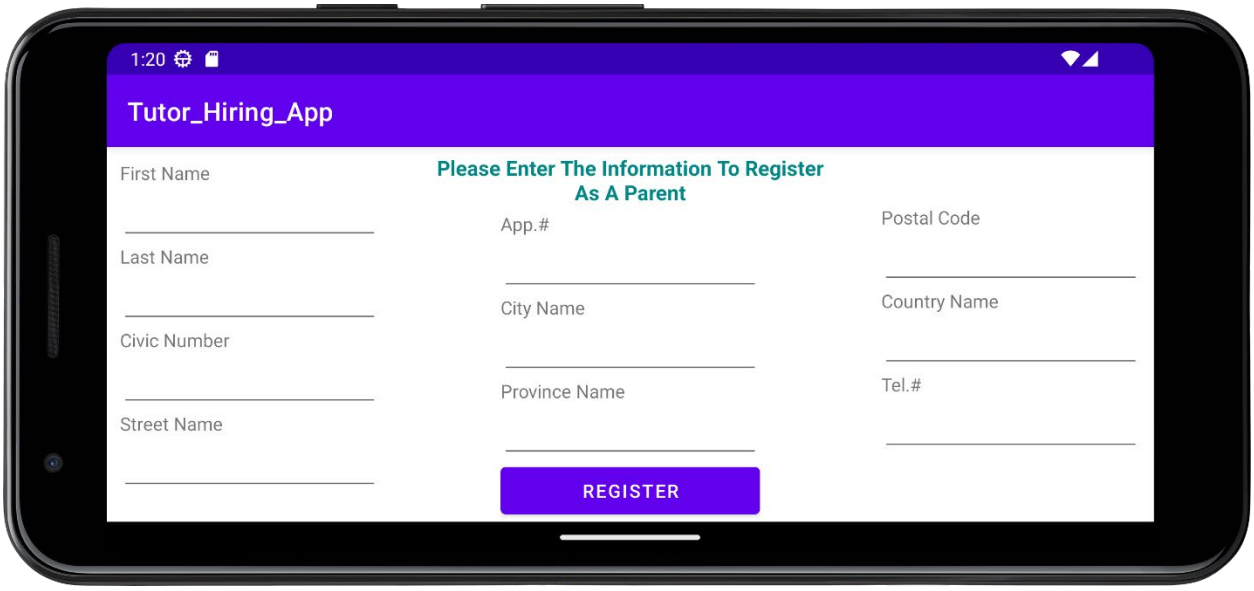


Fig.: User Interface design of ParentRegisterActivity Landscap Orientation.

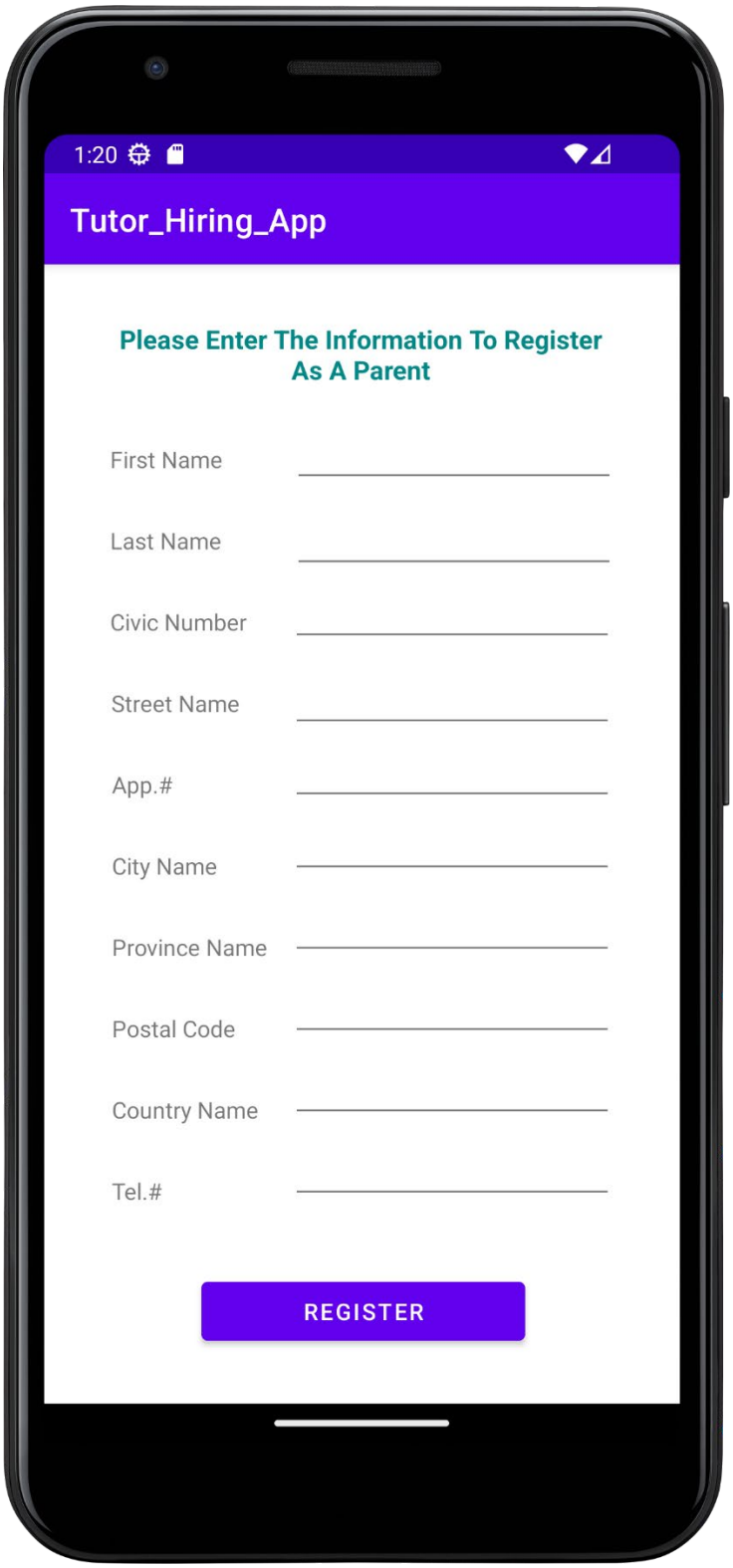


Fig.: User Interface design of ParentRegisterActivity Portrait Orientation.

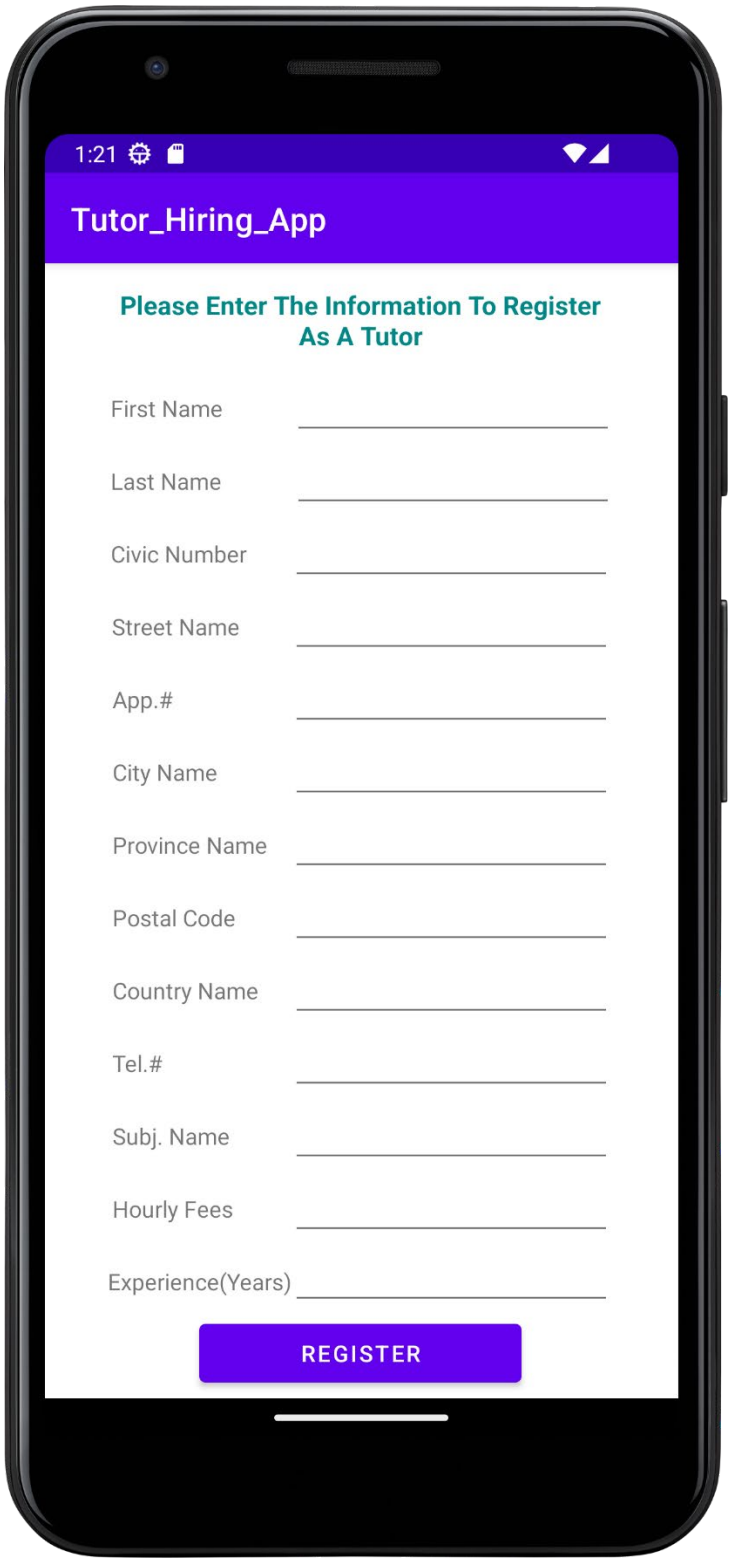


Fig.: User Interface design of TutorRegisterActivity Portrait Orientation.

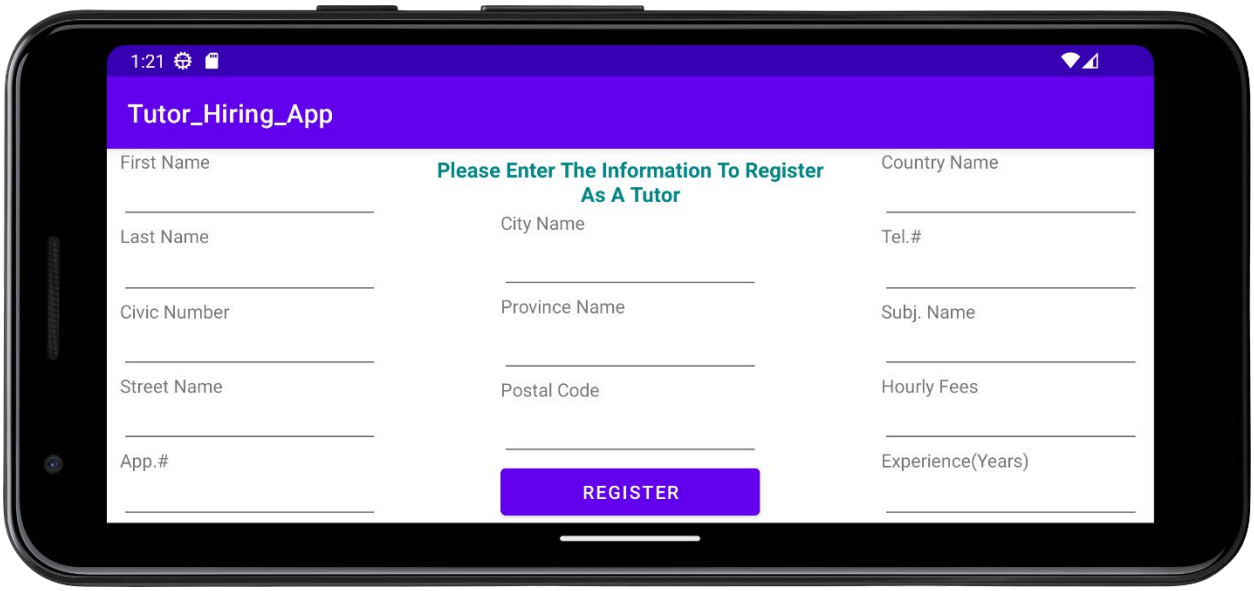


Fig.: User Interface design of TutorRegisterActivity Landscap Orientation.

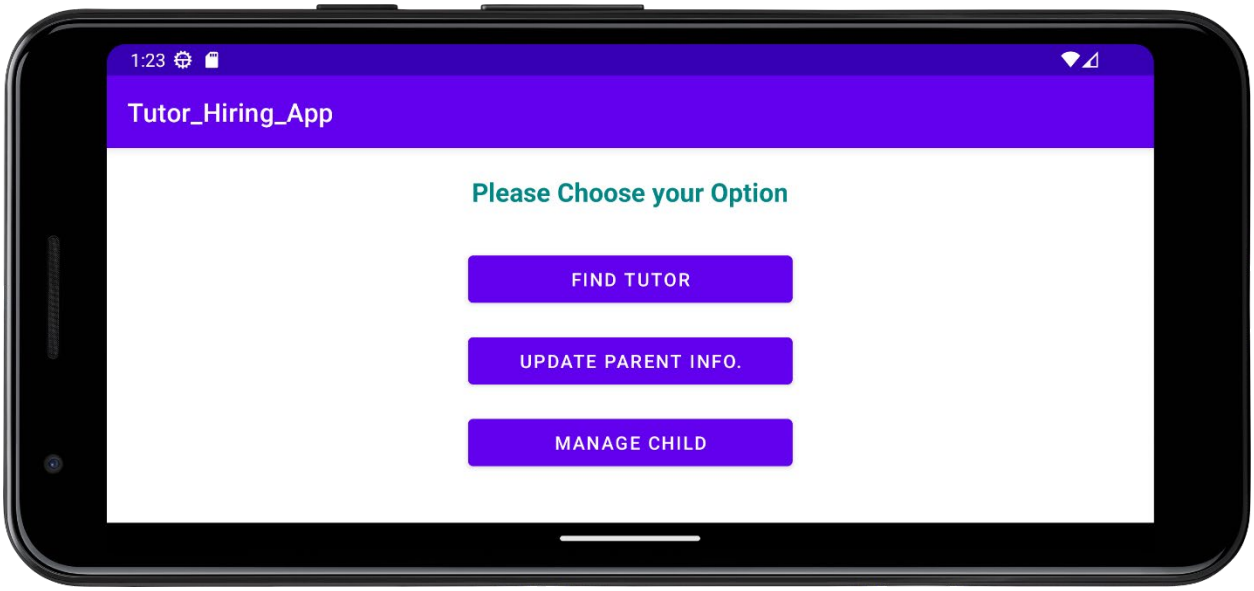


Fig.: User Interface design of ManageParentActivity Landscap Orientation.

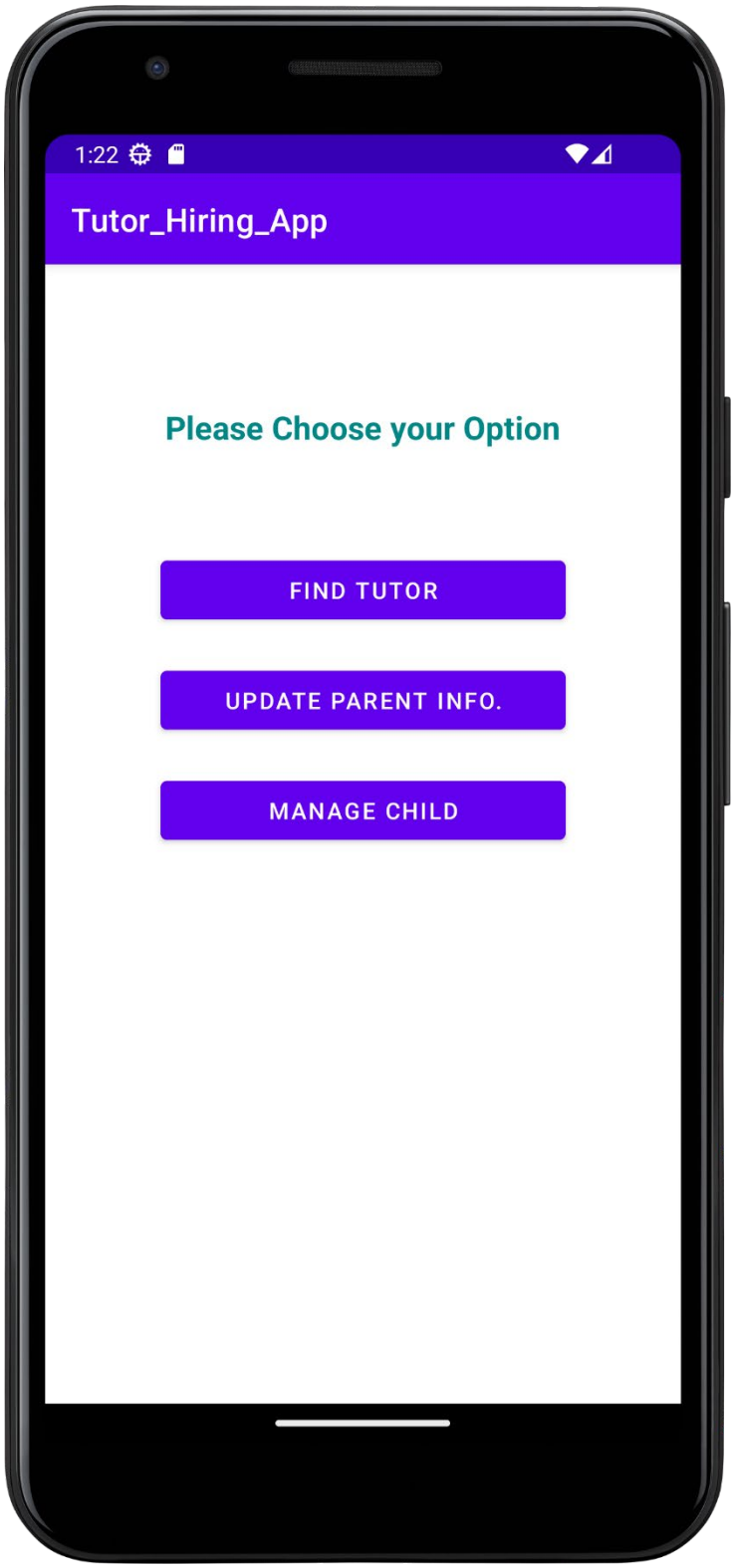


Fig.: User Interface design of ManageParentActivity Portrait Orientation.

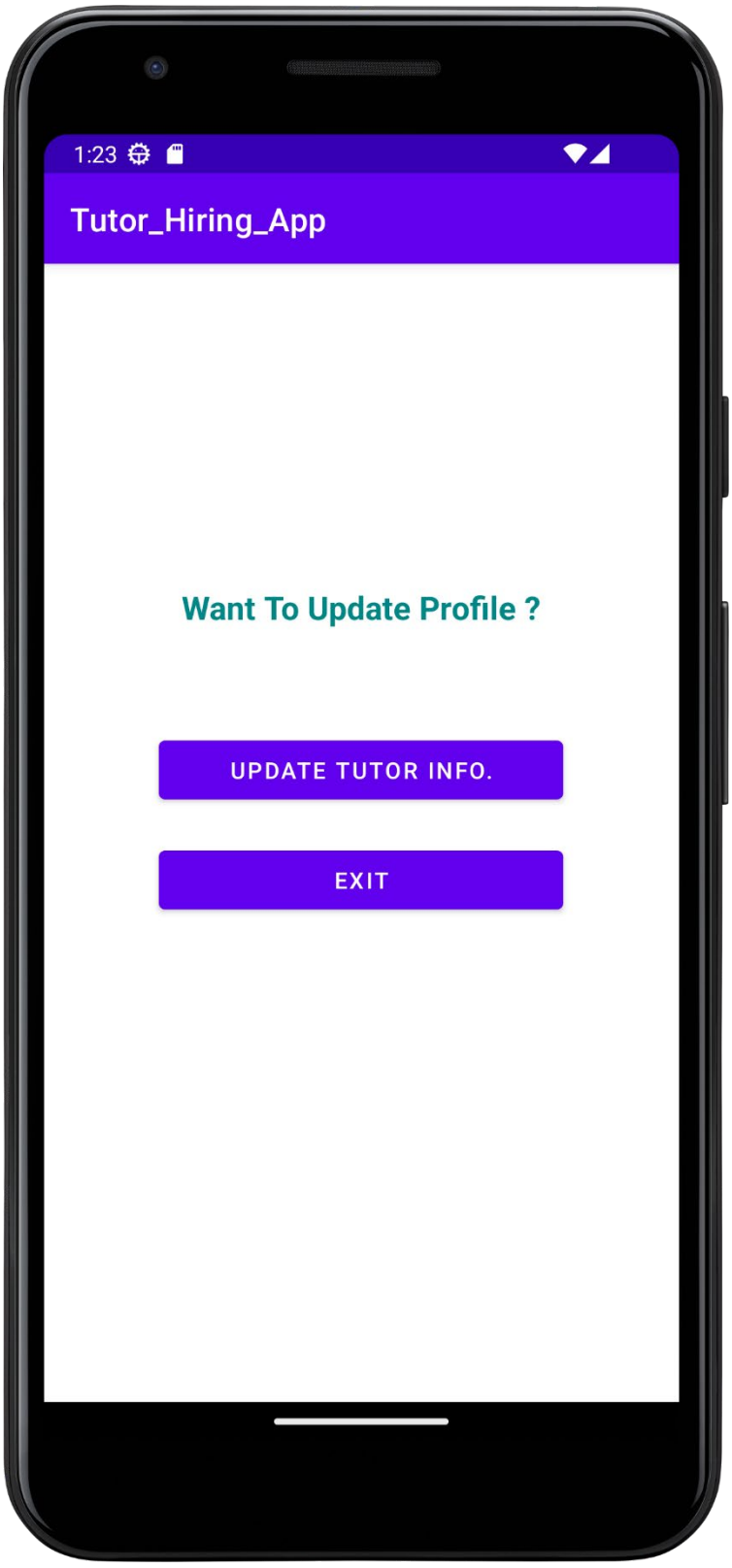


Fig.: User Interface design of ManageTutorActivity Portrait Orientation.

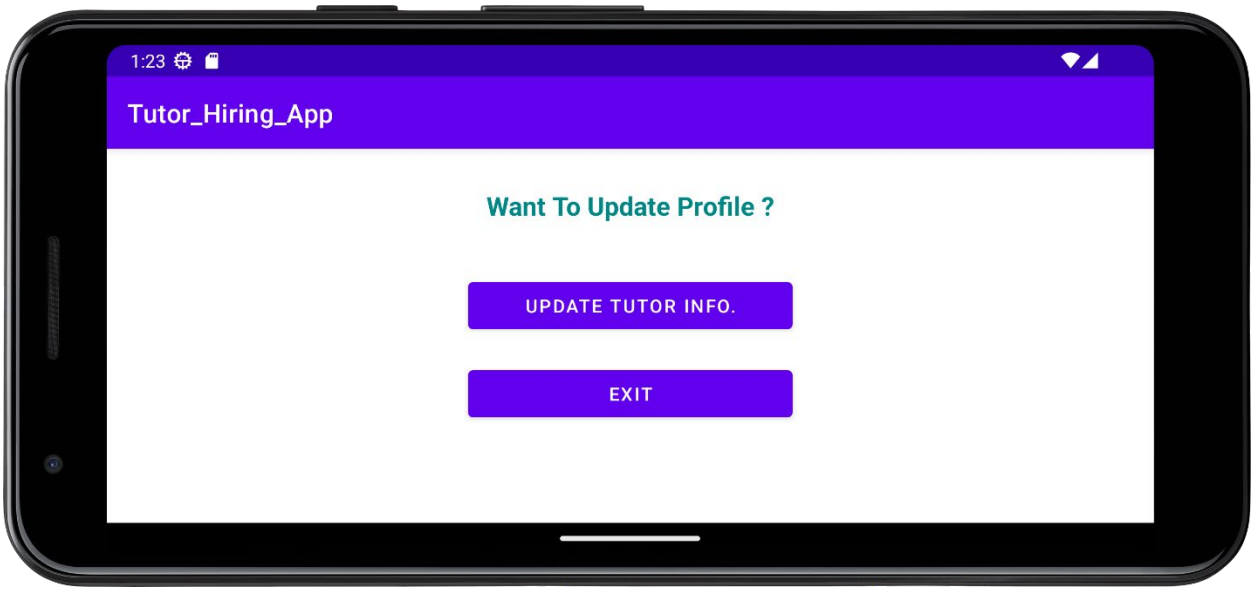


Fig.: User Interface design of ManageTutorActivity Landscap Orientation.

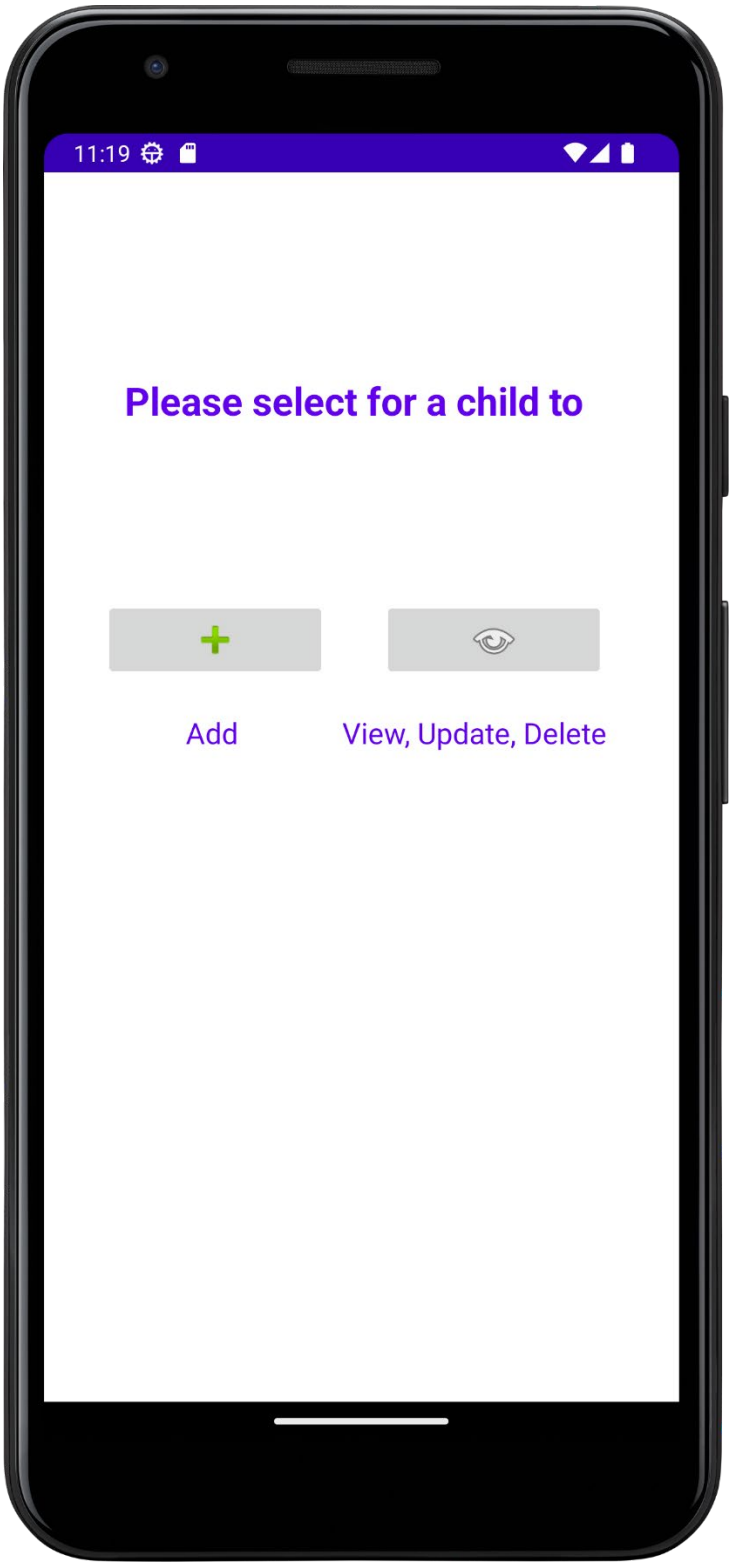


Fig: ManageChildFragment

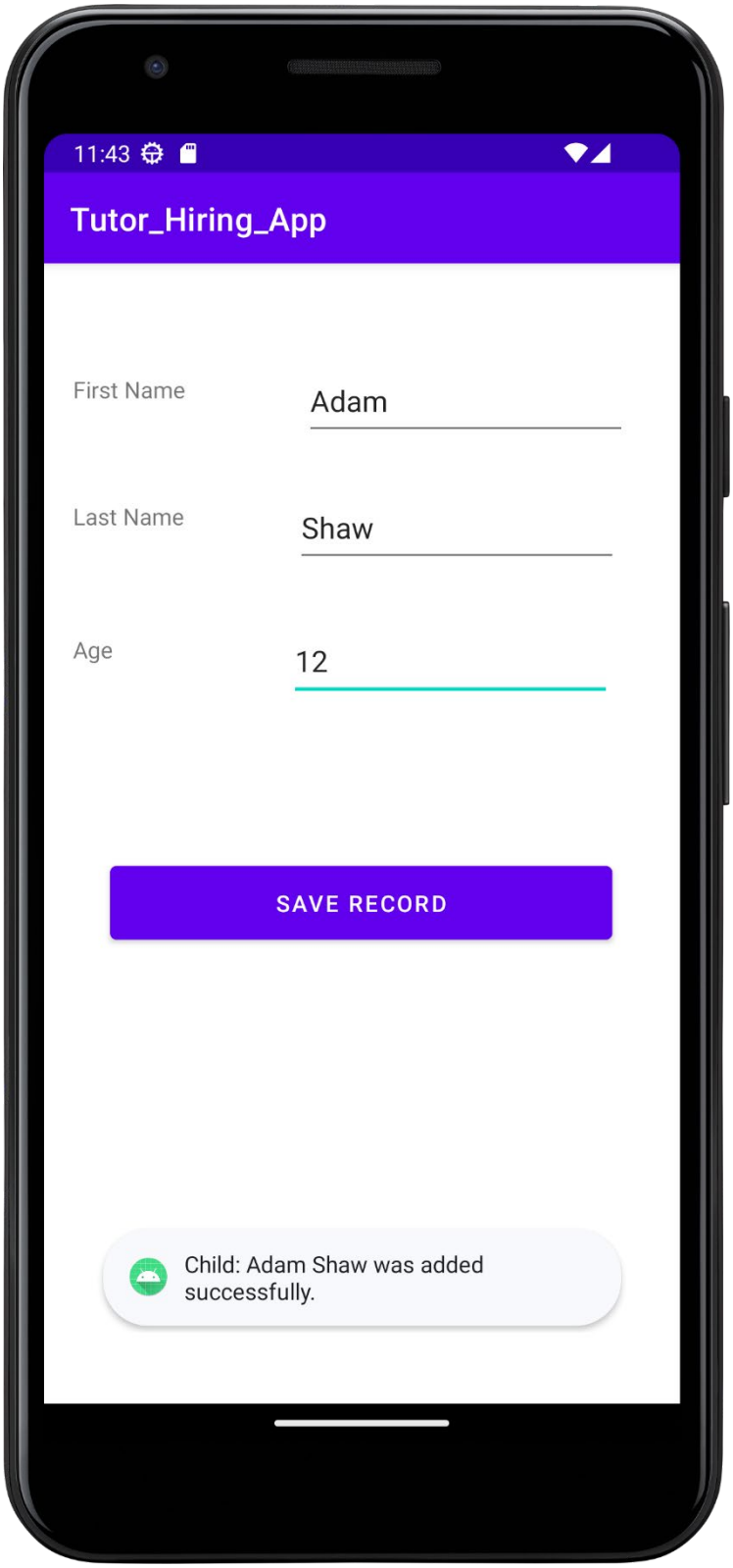


Fig: AddChildActivity

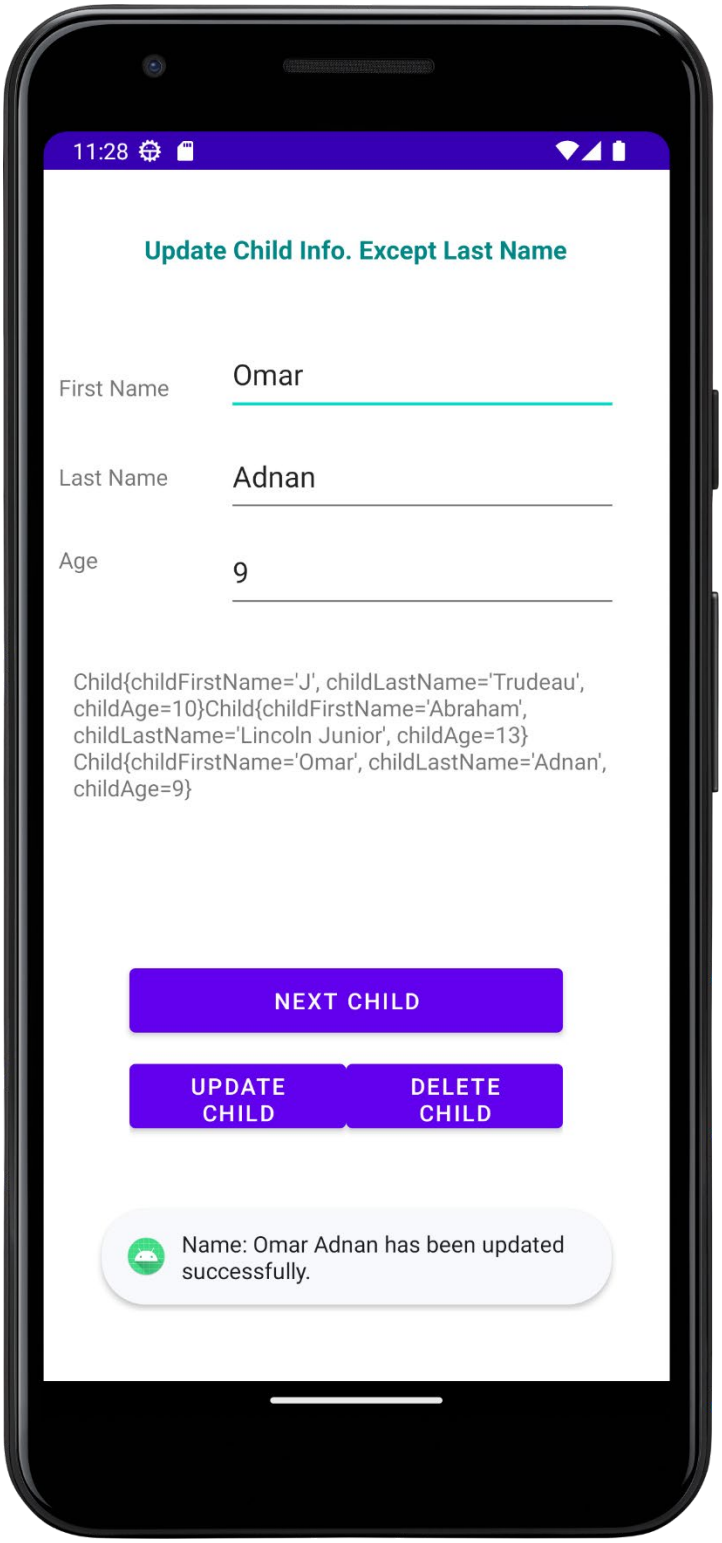


Fig: Update and delete child.

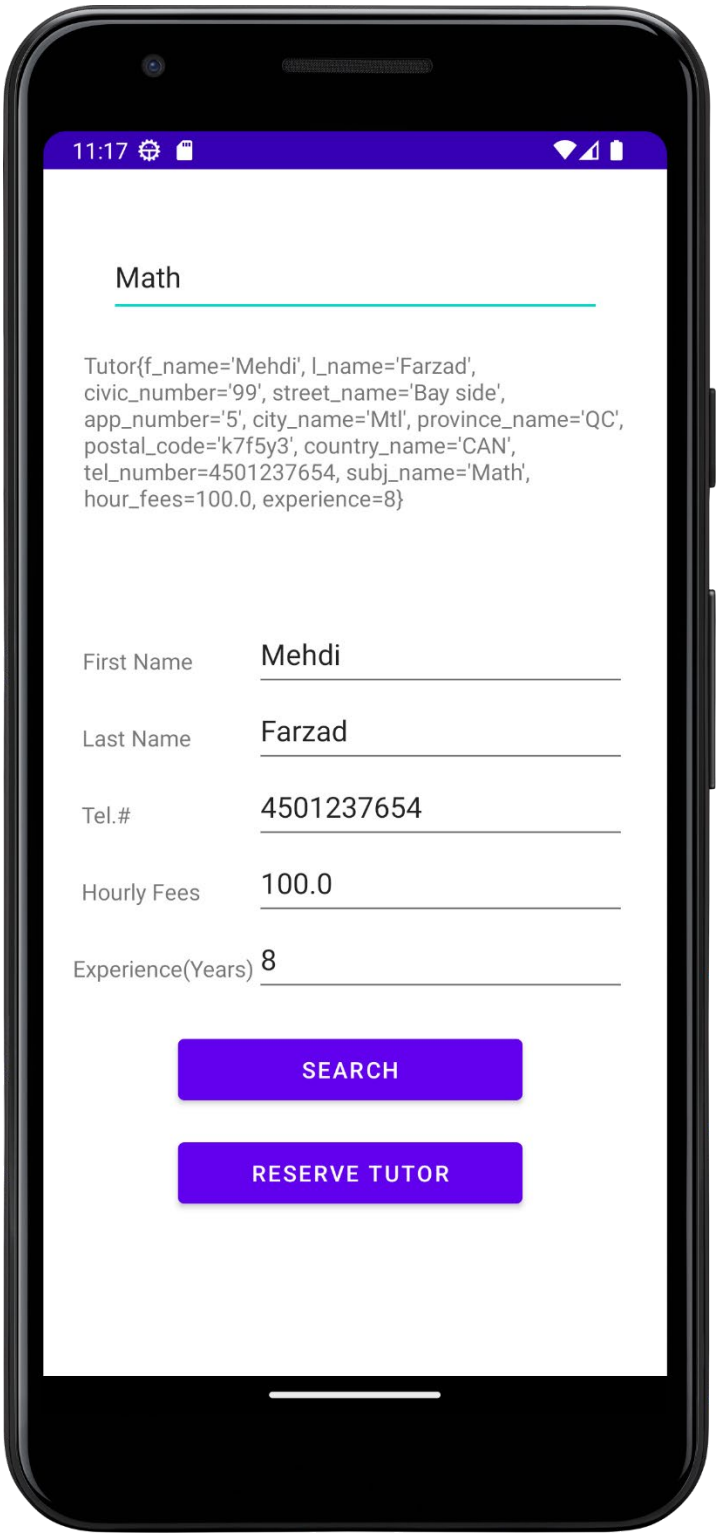


Fig: FindTutorActivity

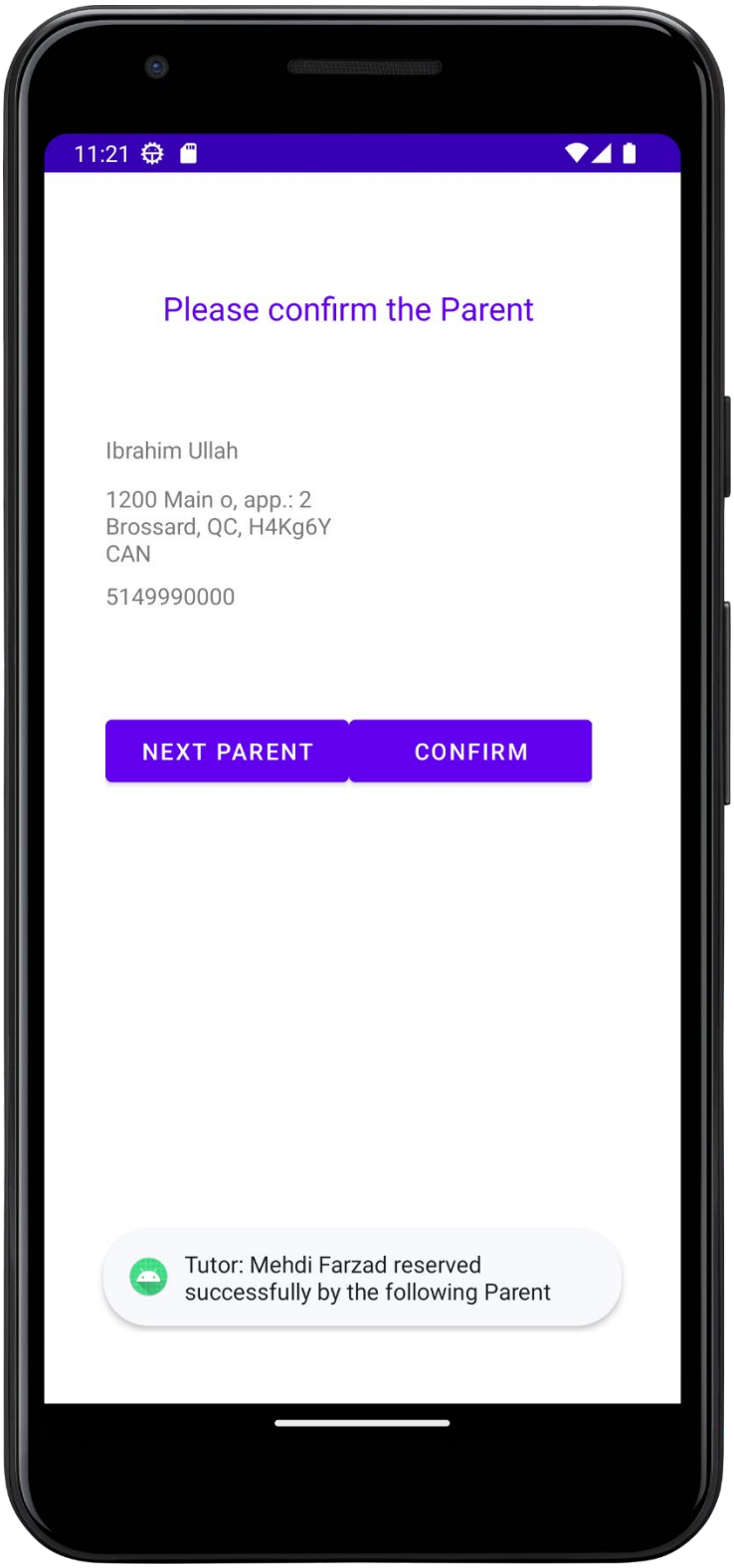


Fig: Parent Confirmation

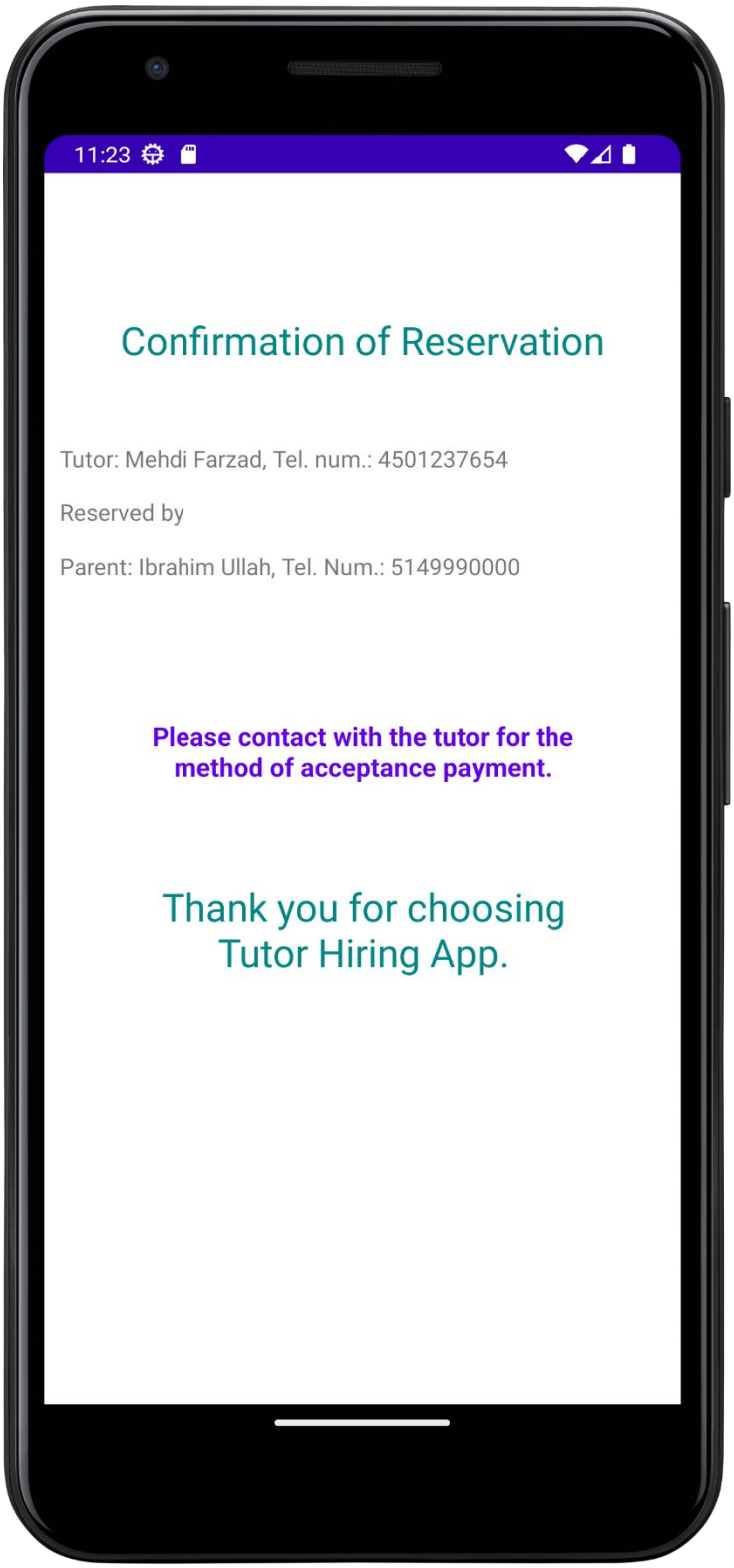


Fig: Confirmation of Reservation

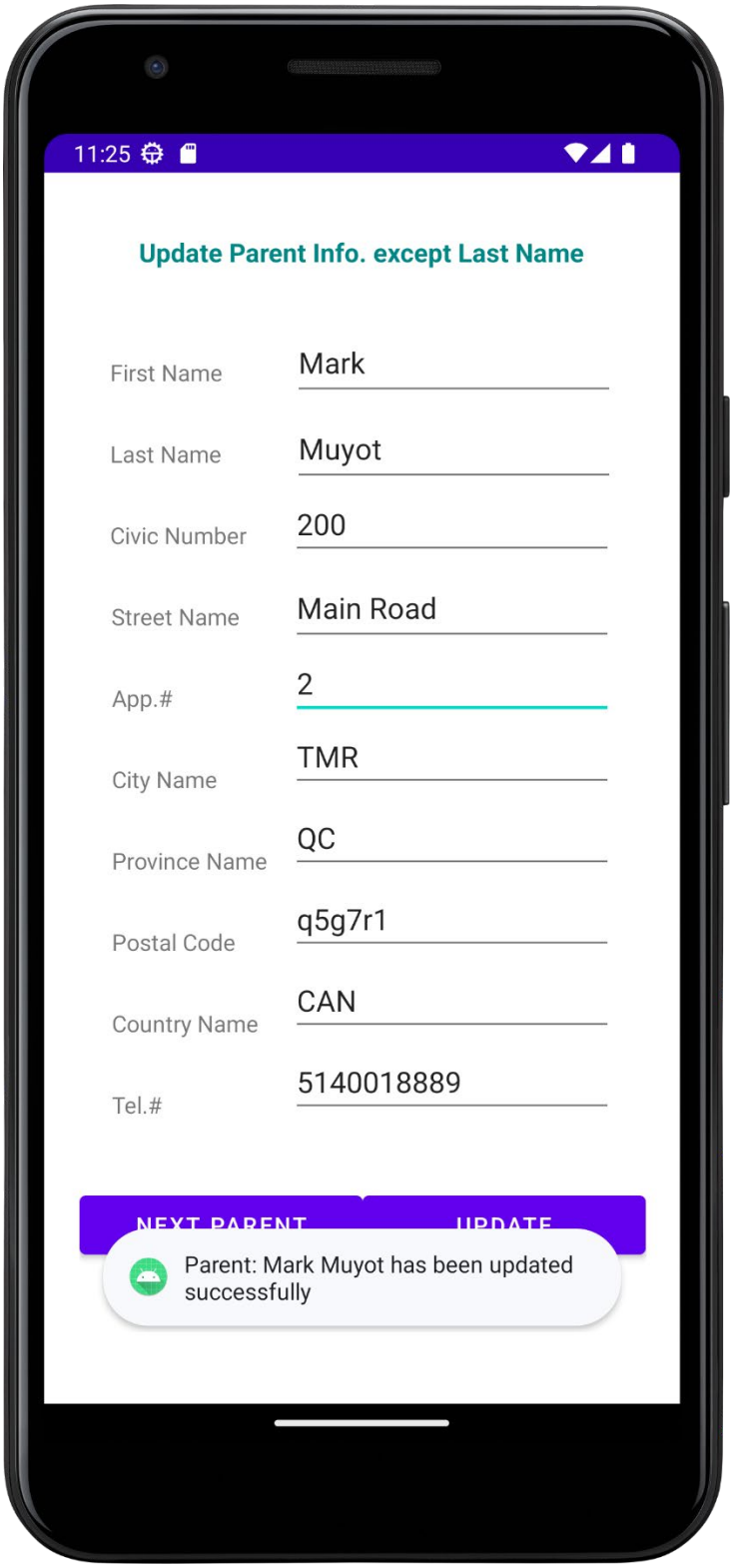


Fig: Update of Parent Info.

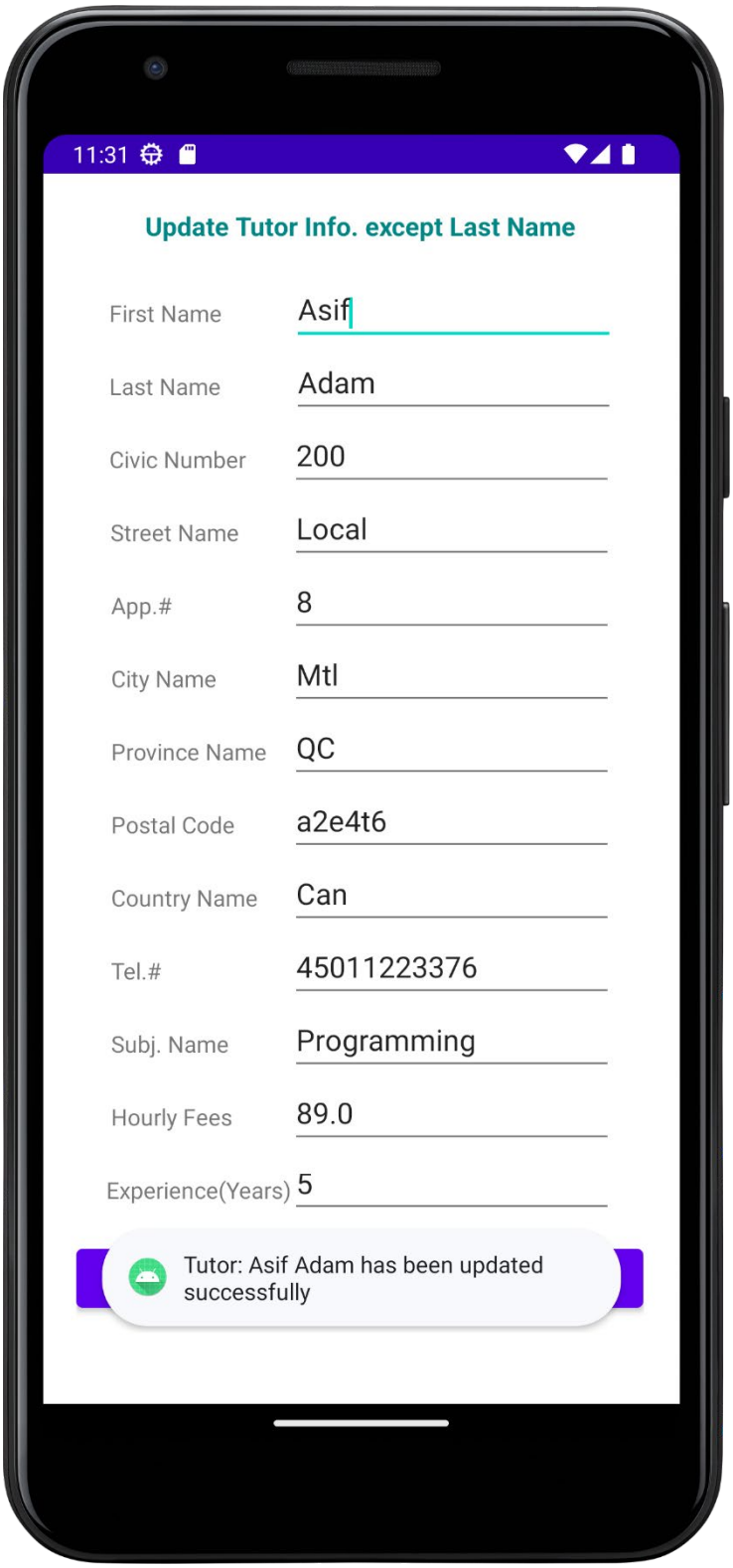


Fig: Update of Tutor Info.

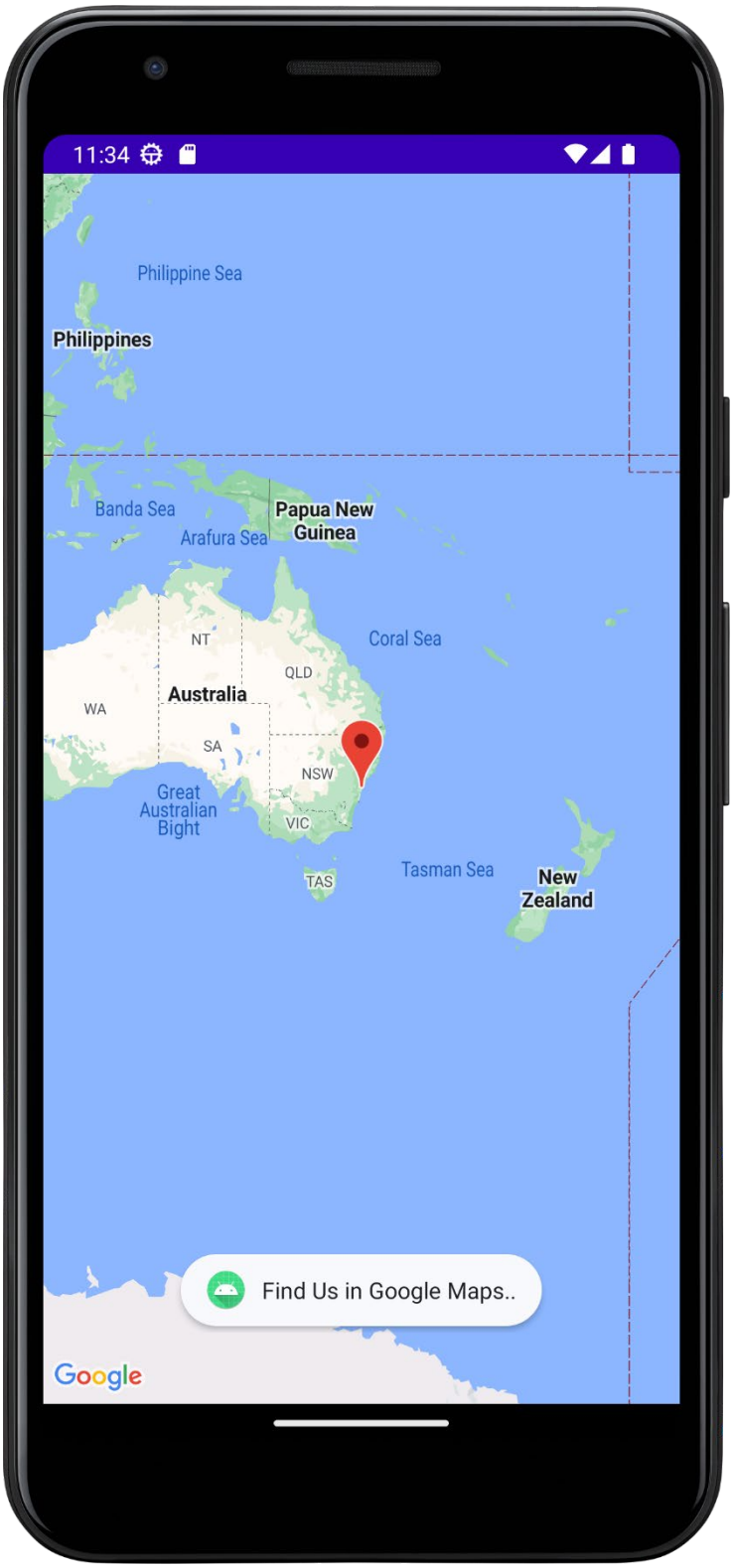


Fig: Toolbar menu Find us in Google maps

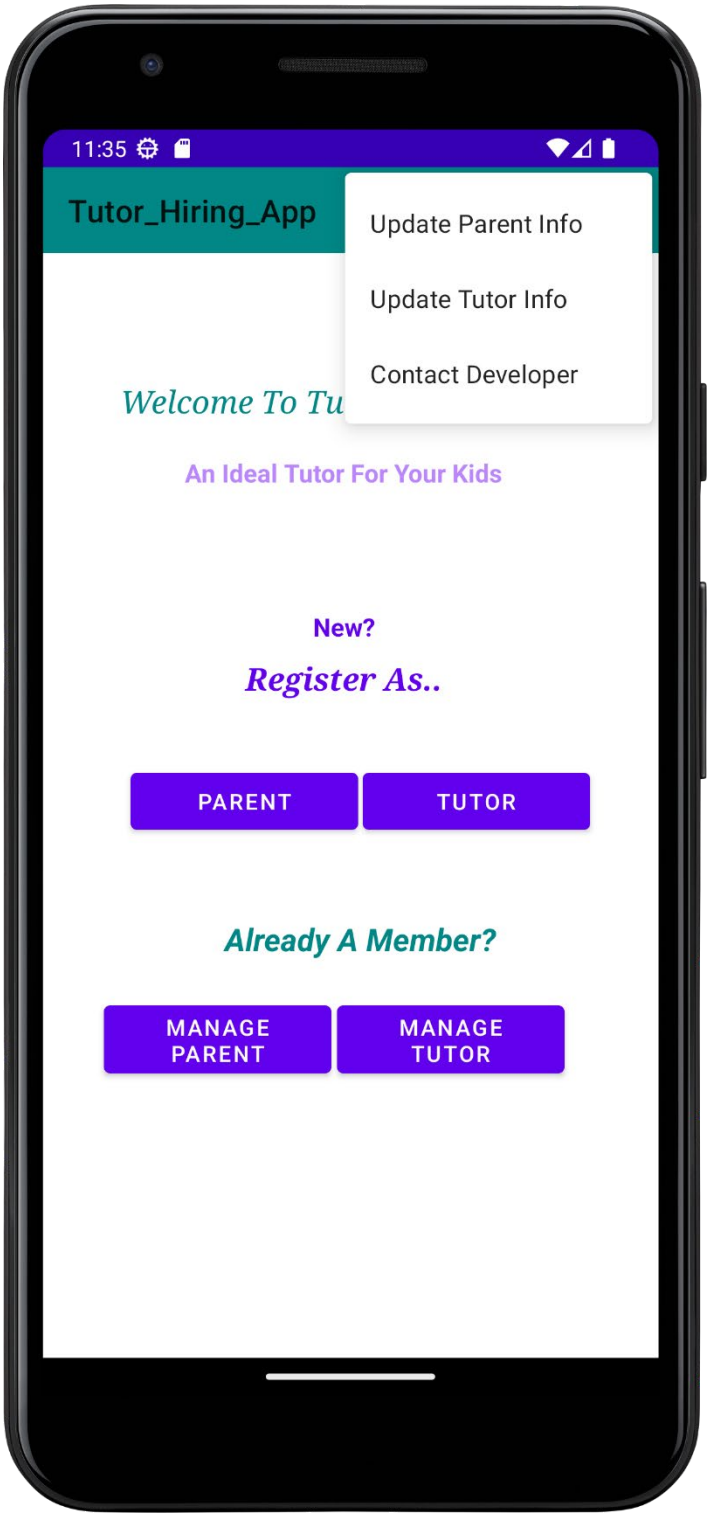


Fig: Toolbar menu of multiple Activities.

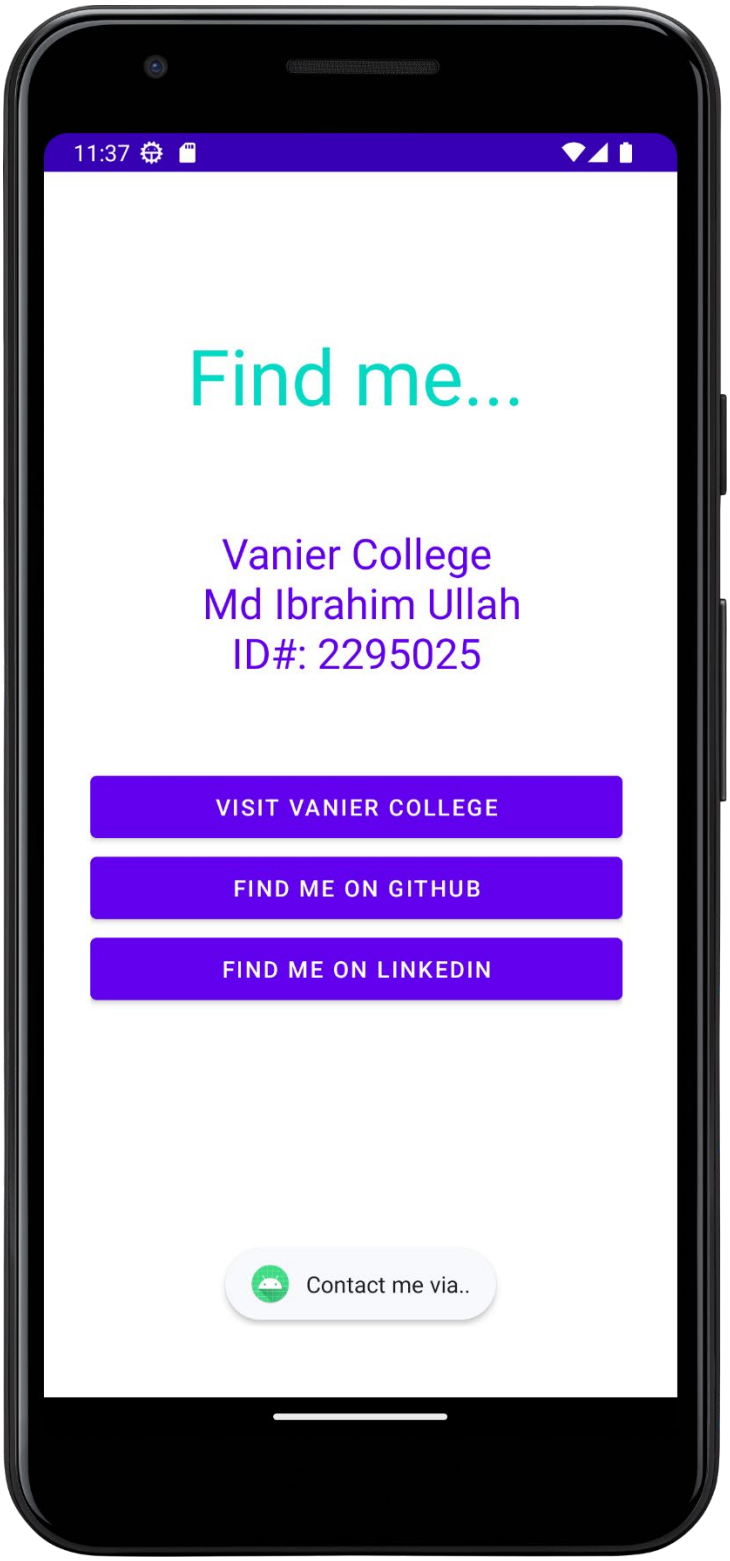


Fig: Contact Developer

e. Data Design:

1. Use Data Structure: In this application, ArrayList data structure is used.

2. File System: There are not any file systems mentioned in this application.

3. Database System: In this project, we have used SQLite Database to store data and perform multiple operations across the application, such as using CRUD operations when a parent **Adds, Update, Views or Delete** a child from her list and also searching a tutor from the database based on a subject. Also, Parent and Tutor information can be **Added**, **Viewed**, **Updated, or Deleted** periodically.

System Implementation (Source Code) Prototype:

The source code of this project for deliverable 3 has been added to a .zip file.

System Testing:

All testing have been done successfully.

Project Innovation

This project is very innovative and promising for the development of families and society. The reason to chose this project is to help parents with an ideal tutor by their matching where I can contribute using my learnings and experience.

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