Software Requirement Specification
For
Vaccination App

Group#9

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1. Introduction

1.1 Purpose

This document lists down the foremost details about the Vaccinator App, a GUI of standalone android application to keep track of already given vaccines by the vaccinator and due ones to both parents and vaccinator. It also provides the full guide to use this app.

1.2 Document Conventions

Font Name: Calibri (Body)
Font size:
Heading – 18 Sub heading – 14 Paragraph – 12

Document Alignment: Justified

1.3 Intended Audience and Reading Suggestions

This document is intended for development team including developers and interface designer, project manager, client, testers, users and documentation writers. Each can view this document for his/her needs and get aid out of it. The table of contents shall serve as the focal start for all kinds of references by interested audience.

1.3.1 Client

The requirements are enlisted along with features, as requested by the client. He/she can cross check the requirements perceived by the team and can request them to modify or change it.

1.3.2 Developers and interface designer

Developers and interface designer in the team can see this document to get clear about requirements, user interface and functionality of the application and can modify it as needed.

1.3.3 Project manager

This document will aid project manager to keep track of the completed tasks and due ones to assign them to different members of the team. He will be able to see the requirements are being completed as per client requirements.

1.3.4. Users, Testers and Document Writers

The overall flow of the system is discussed in the document that promotes understanding of the functions hence proving useful for testers, users and document writers.

1.4 Product Scope

This system will help vaccinators and parents to get all of the information in a fist. Vaccinators do not have to use different platform such as paper or registers to gather or know about child's current vaccines record i.e. if a vaccinator wants to know about any child's current vaccine's record of already given or due ones, he/she does not need to roll the pages of different platforms because all of these information will be available on a single platform. Not only vaccinators can get benefit from it but it will also help parents to see their children current record by viewing updated record from the vaccinators. They will also receive notification from app when some vaccine is due. Basically, this is the replacement of registered base system. In short, the main purpose of this app is to bring all the information on a single platform so that both will be able to get benefit out of it and mutual understanding between both remain consistent.

1.5 Definitions, acronyms & abbreviations

Acronyms	Full Form
App	Application
UI	User interface
CNIC	Computerized National Identity card
CRC	Class Responsibility Collaborator
API	Application Programming Interface

2. Overall Description

2.1 Product Perspective

The traditional vaccination system is paper or register based. Vaccinators manually add new child's record to their registers and keep track of his/her vaccines. In this case it is very difficult to keep records of the already given vaccines and due ones, and inform their parents about it. Consequently, to add new child and to keep tracks of his/her vaccination becomes cumbersome and arduous task without a dedicated database. Vaccinator app is the proposed solution to the exiting register based system, a standalone android application serves this purpose. Its UI will allow vaccinator to add new child and to keep track of his/her vaccines and get notified about due ones. On the other hand parents will be able to view their children's record and get notified about due ones. With this help, parents will be able to take their children to vaccination centers and give vaccines to the children, at that instant vaccinator will be able to update their children's record.

2.2 Product Functions

There will be two main users of this application; Parents and Vaccinators. Functions which application let them perform are illustrated below in fig:

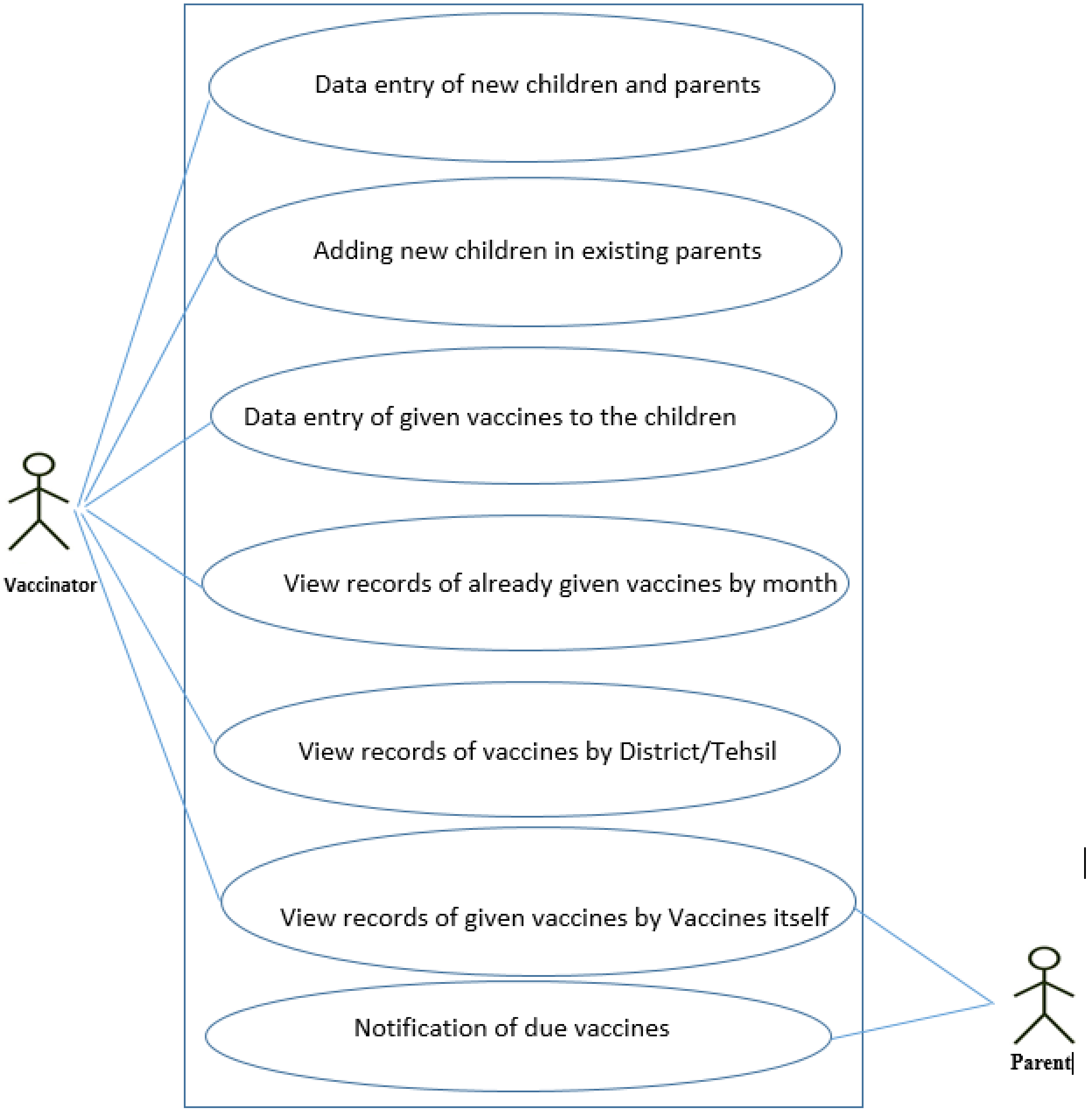

Data entry of new children and parents
Adding new children in existing parents
Data entry of given vaccines to the children
Vaccinator
View records of already given vaccines by month
View records of vaccines by District/Tehsil
View records of given vaccines by Vaccines itself
Notification of due vaccines
Parent

Figure: 1

2.3 User Classes and Characteristics

There will be two main users of this application; Parents and Vaccinators. Vaccinators are more privileged to use this application in term of more functionalities they have. Once they login with the secret key provided by their department, they will be able to register new parent against CNIC number, add their children, update their children's vaccination record once been delivered and get notification of due vaccines based on date. On the other hand, parents will only be able to view their children's record based on CNIC number and get notification of vaccines which are due. To get more insight, product's function figure above can be viewed.

2.4 Operating Environment

The application has a few prerequisites:

- Android device with enough power and minimum android version 5.1 or above.
- All data of the user will be stored in the remote database so for this purpose this application needs Internet connection to store and retrieve data to/from the database.

2.5 Assumptions and Dependencies

There are some assumptions and dependencies which should be fulfilled pre hand to use this application which are listed below:

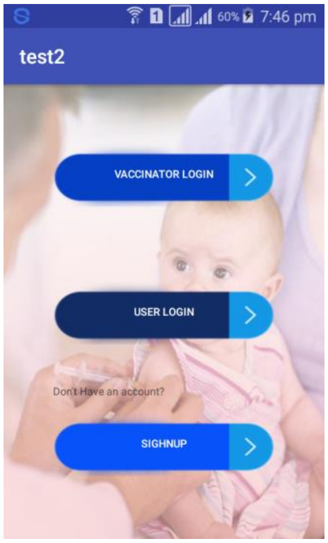
- Both user's device should have android operating system installed on their device.
- User's device should have enough power to run the device
- Users should have fair internet connection.
- Vaccinator will be the employee of vaccination serving department.
- Secret key will be provided to vaccinator by department to sign up.
- Parent should see their children data if they are registered.

3. External Interface Requirements

In this section we will describe in detail the usability of application for the user that how can he/she will use this application. We will also describe the required software and hardware for this application. We will also explain the communication part of this application.

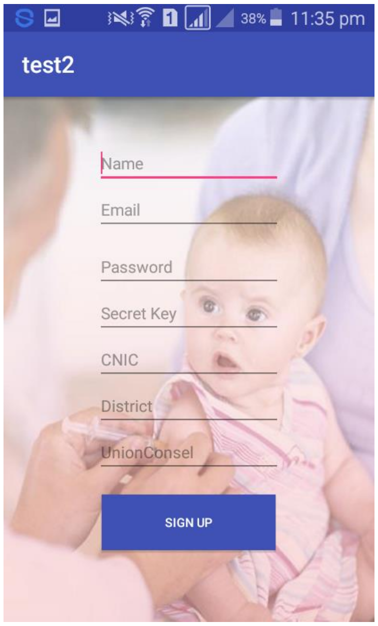
3.1 User Interfaces

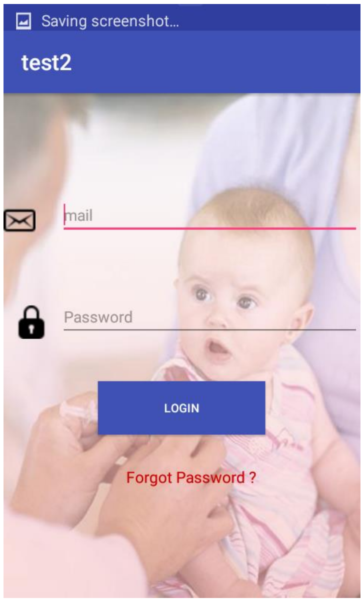
Registration Activity



Description:
Both users encounter this window first of all. If they are not registered, they first sign up else login into their respective accounts.

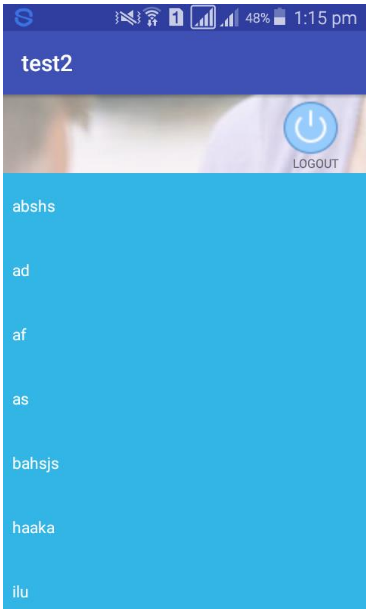
<u>Parent sign up and sign in</u>





Description:
Left side of the window sign up user while right side of the window allows user to sign into his/her accounts.

<u>Parent home screen</u>



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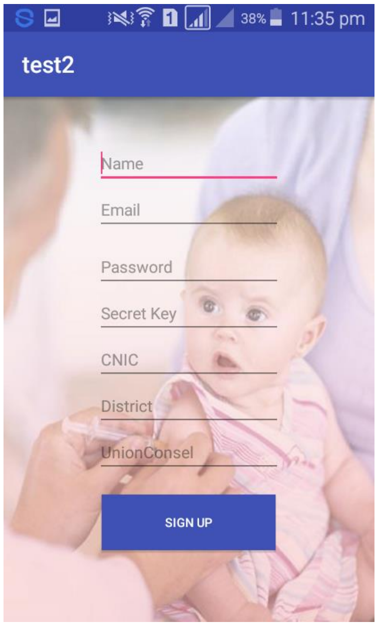
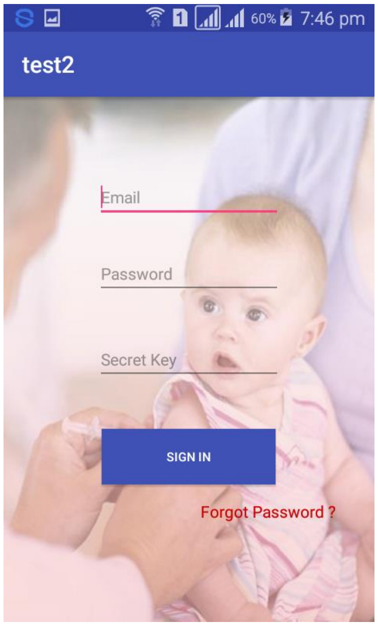
Description:

This is the home page of parent’s screen where they can view all their children. In case of click on any to view his/her data, a new activity serves this purpose.

Vaccinator sign up and sign in

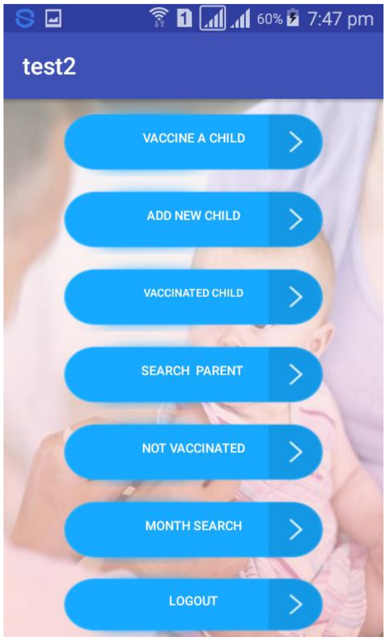




Description:

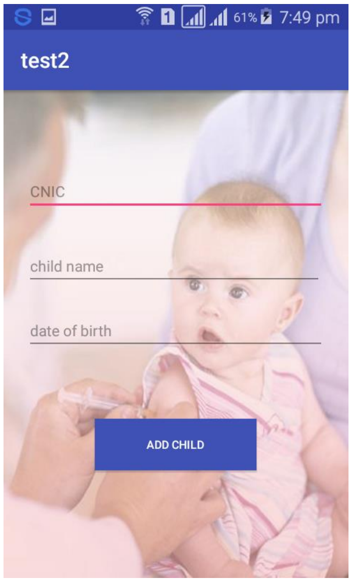
Left side of the window signs up vaccinator while right side of the window allows him/her to sign into account. Here sign in needs a secret key which will be provided by the department to vaccinator who will be the employee.

Vaccinator’s home page



Description:
This is the home page of vaccinator’s screen where he/she can play around with different available operations.

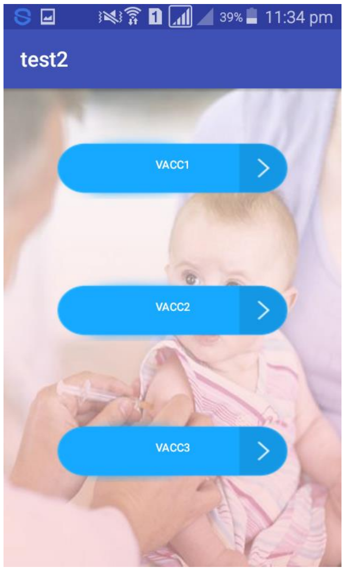
Adding a child

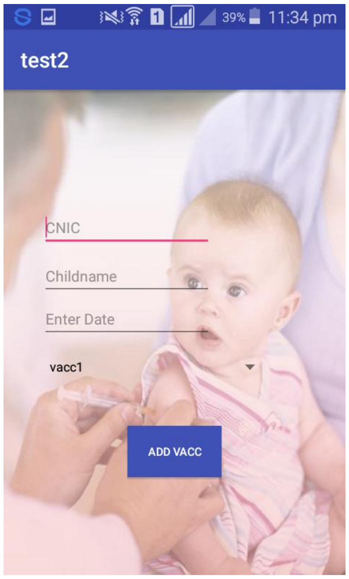


Description:

When a particular parent come to vaccinator to register a new child, he/she will be able to add child through this window.

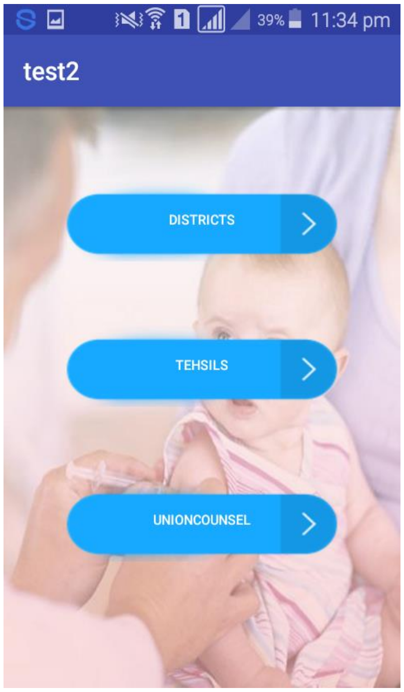
Giving vaccine to particular child

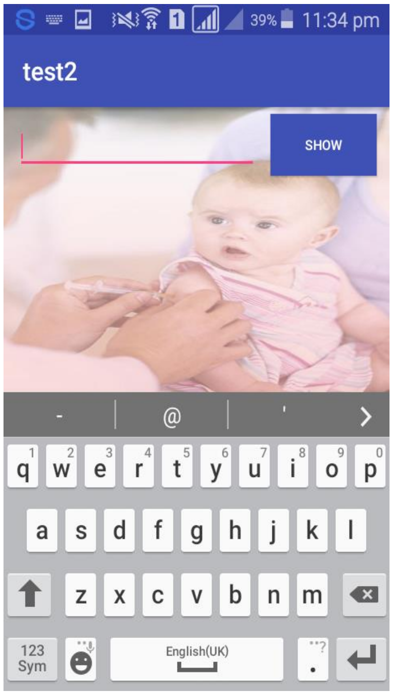


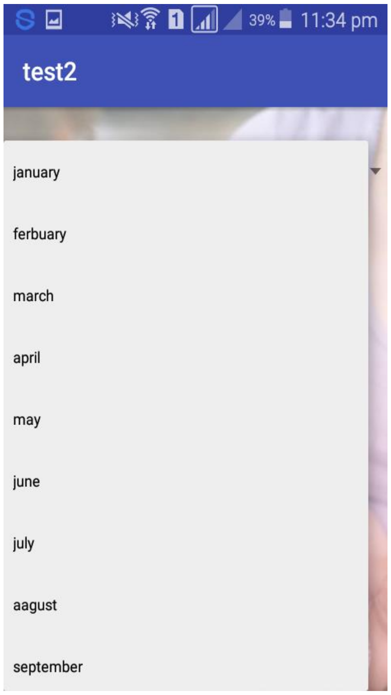


Description:
When a vaccinator wants to give a vaccine of particular type to a child, above windows will help him/her to deliver vaccine to a particular child.

Different type of searches by vaccinator

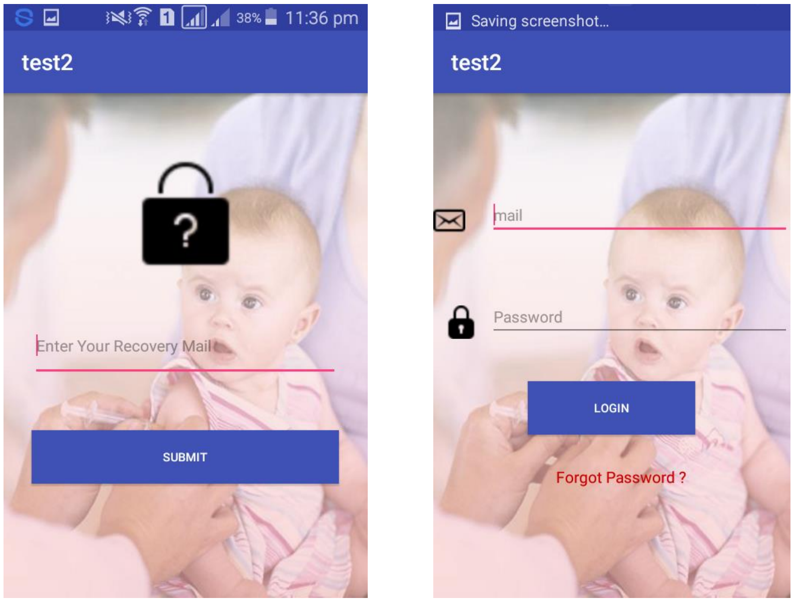






Description:
Our application allows vaccinator to perform different types of search operations mainly search by month, search by district, search by tehsil & union counsel and search by parent CNIC.

In case of forgot password by both users



Description:
In case of forgetting password, both will provide an email address. An email will be sent to user's email account. Upon verifying and setting up new password it will be updated in the data base and after that, they can sign in through this new password using sign in activity.

3.2 Hardware Interfaces

Since this is the android application, so it's obvious to have android device supporting at least Lollipop version of Google API 21. To operate through this application, device must have enough power and internet connection to send data and retrieve data to/from the server.

3.3 Software Interfaces

It's an android application, so it must be installed on both vaccinator and parent device supporting android operating system of version 5.1 or above. To operate through this device, it needs proper internet connection to send or retrieve data to/from the database.

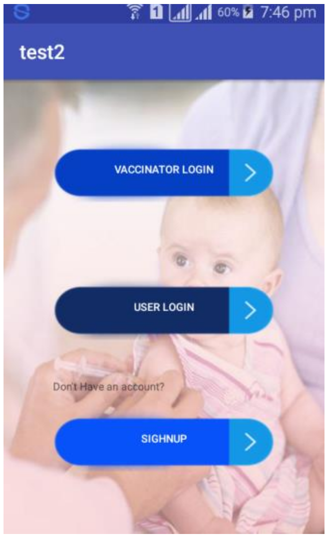
3.4 Communications Interfaces

As communication between system and server is important so user will need internet as a communication medium for retrieving data from Server. Moreover, the operating system is also a playing a vital role in communication.

4. Functional requirements

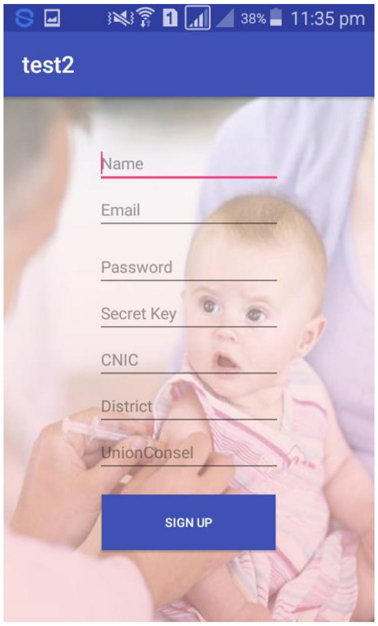
This section includes the requirements that specify all the fundamental actions of the software system.

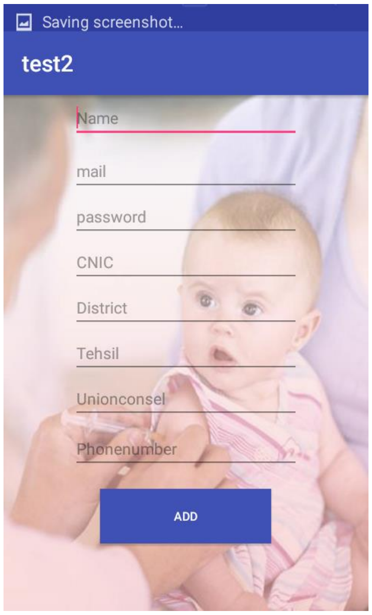
4.1 Use case 1:



Name	**Home Screen**
Actor	Father, Vaccinator
Pre-Conditions	Name, Phone No, CNIC, Postal Address
Flow	User and Vaccinator will trigger the sign in or sign up button and provide the information.
Triger	Sign up Button, User Login, Vaccinator Login
Qualities	User and Vaccinator will be added to fire base. Error checking and Error prevention are also included.

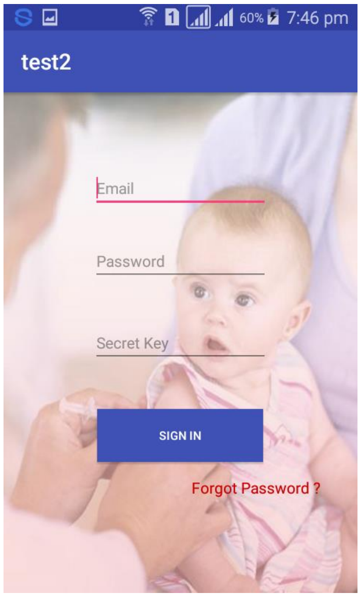
4.2 Use case 2:

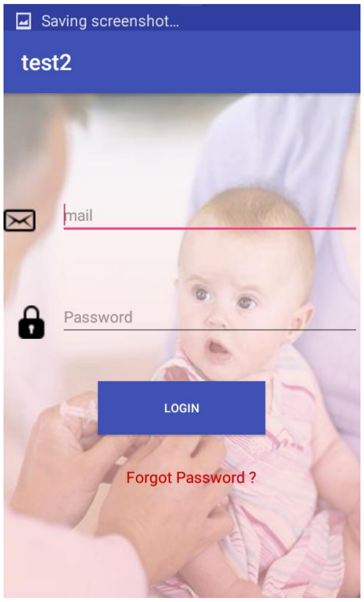




Name	**User, Vaccinator Sign up**
Actor	User, Vaccinator
Pre-Conditions	Name, Email, password, Secret Key, CNIC, District, UnionConsel, Phone
Flow	After getting per-Condition values they will be directed to their home pages and all their data will be saved in firebase.
Triger	Sign up Button
Qualities	Error checking is included.

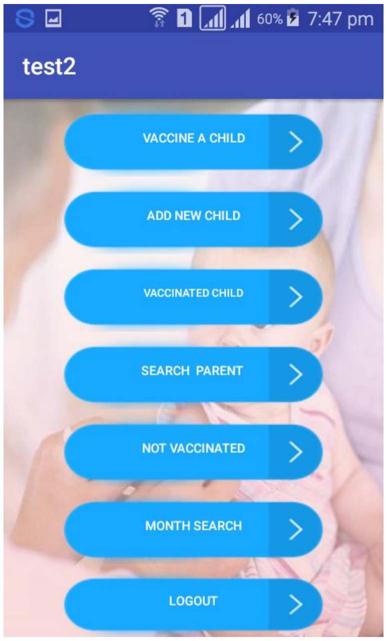
4.3 Use case 3:





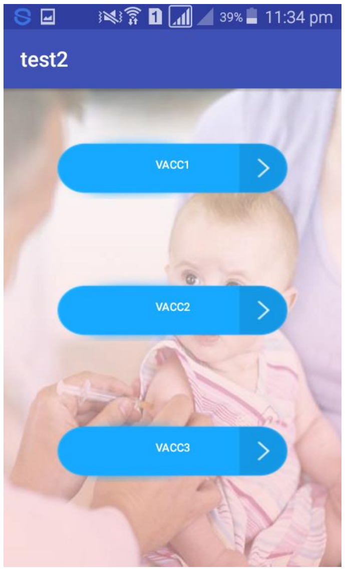
Name	**User, Vaccinator Sign in**
Actor	Vaccinator, User
Pre-Conditions	Name, password, Secret Key , mail, password
Flow	After getting per-Condition values they will be directed to their home pages accordingly.
Triger	Sign in Button
Qualities	Error checking is also included

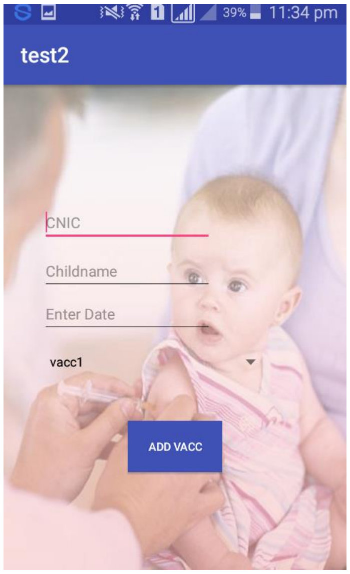
4.4 Use case 4:



Name	**Vaccinator home Screen**
Actor	Vaccinator
Pre-Conditions	A vaccinator should have the data of child to add and data for searching.
Flow	Vaccinator can add and search a child by clicking respective buttons. He can mark (done) a child after doing the vaccination of a child. He can search by parent or by month.
Triger	Vaccine a child, add a child, Vaccinated Child, Search Parent, not vaccinated, Month Search, Logout.
Qualities	Searching is time saving for vaccinator.

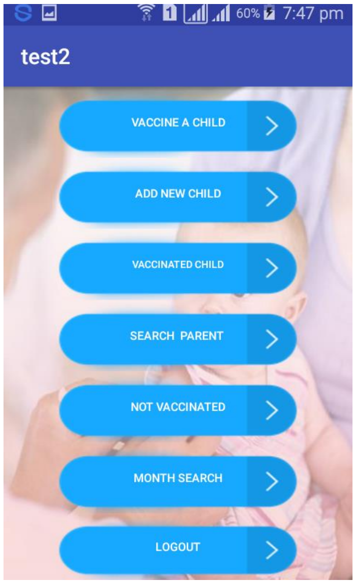
4.5 Use case 5:

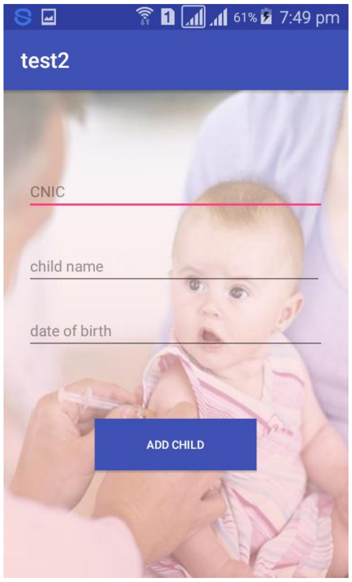




Name	**Vaccine a child**
Actor	Vaccinator
Pre-Conditions	CNIC, Child name, Enter Date
Flow	User and Vaccinator will trigger the vacc1, vacc2, vacc3 buttons and he will be directed to vacc1 activity where he will provide the required data.
Triger	ADD VACC Button
Qualities	Child name, date and vacc1 will be added to fire base. Error checking and Error prevention are also included.

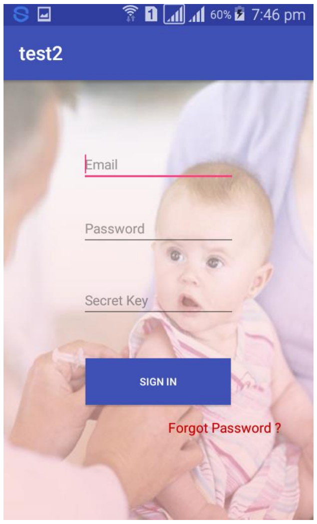
4.6 Use case 6:

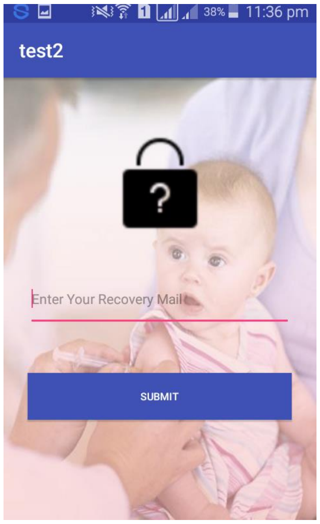




Name	**Add new child**
Actor	Vaccinator
Pre-Conditions	Name, CNIC, date of birth
Flow	Vaccinator will get the child data from his parent and add it by clicking the add new child button. After entering data he will save it by clicking add child button.
Triger	Add new child button and Add child
Qualities	Error checking and Error prevention are also included.

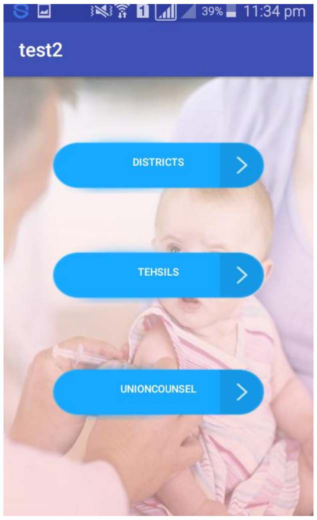
4.7 Use case 7:





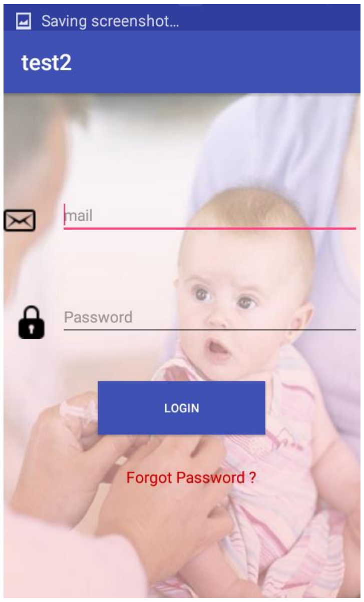
Name	**Account Recovery**
Actor	Vaccinator, user
Pre-Conditions	Recovery Email
Flow	If user forget his name then through recovery email he can reset it.
Triger	Click on text “forget password?” which is appear in the bottom
Qualities	You can reset your account through your email.

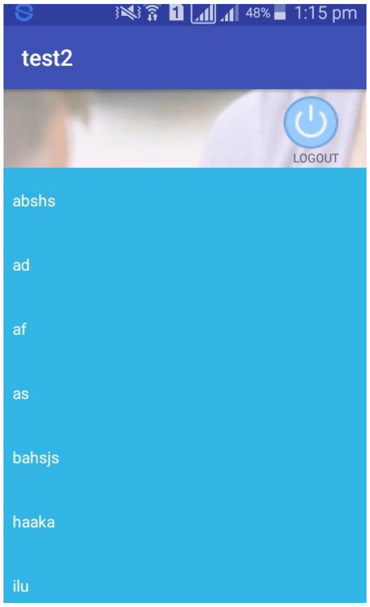
4.8 Use case 8:



Name	Different searching
Actor	Vaccinator
Pre-Conditions	District name, Tehsil name, union council name
Flow	Vaccinator can search a child using district name, tehsil name and union council name by click respective buttons.
Triger	Districts Button, Tehsil Button, Union Council Button
Qualities	Error checking and Error prevention are also included.

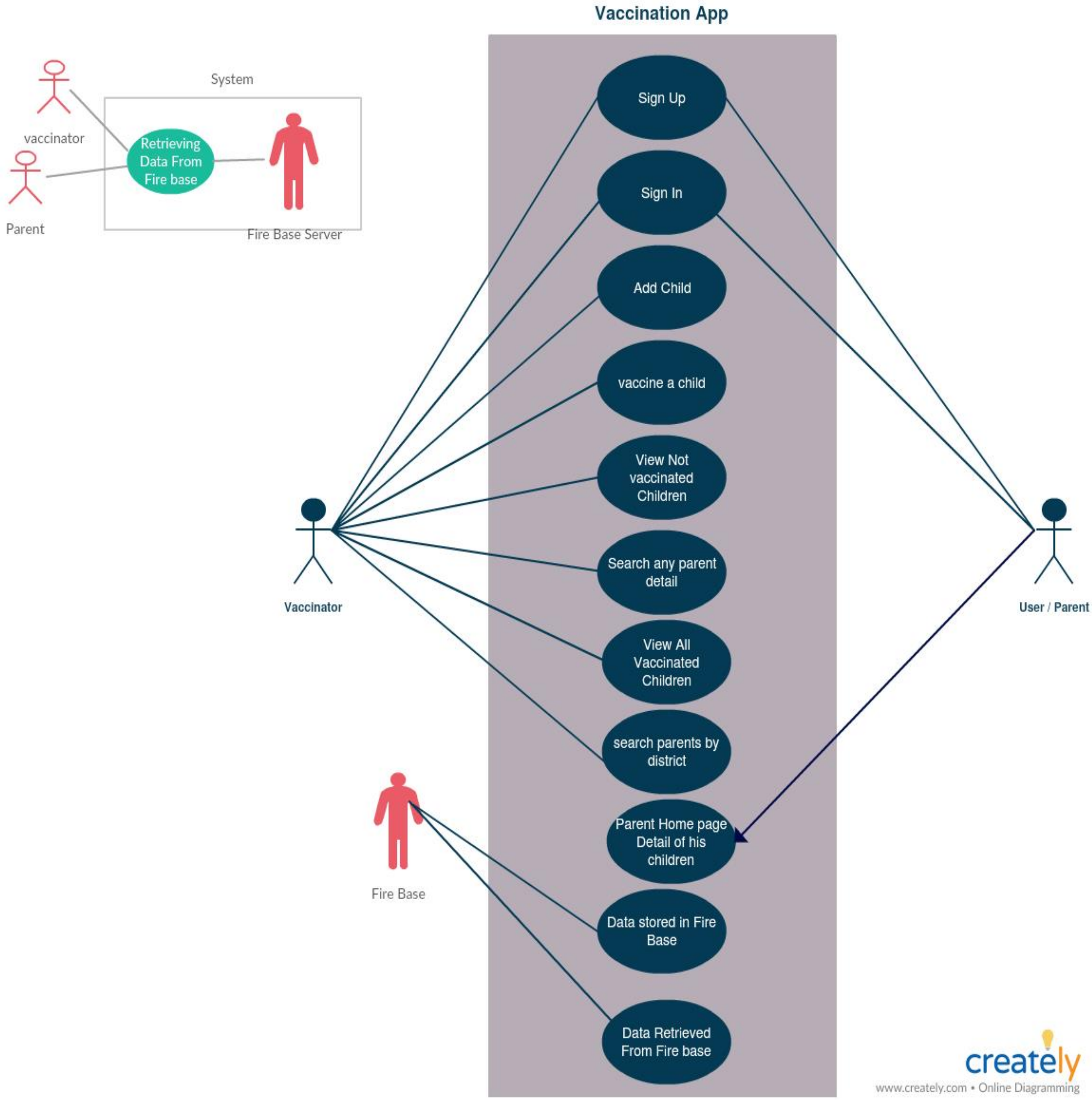
4.9 Use case 9:





Name	Different searching
Actor	Vaccinator
Pre-Conditions	Email, password
Flow	After entering correct email and password user will be directed to his home activity where he can see all his children name and their updates.
Triger	Login Button
Qualities	Error checking and Error prevention are also included.

4.10 Use case Diagram:


System
vaccinator
Retrieving Data From Fire base
Parent
Fire Base Server
Vaccination App
Sign Up
Sign In
Add Child
vaccine a child
View Not vaccinated Children
Search any parent detail
View All Vaccinated Children
search parents by district
Parent Home page Detail of his children
Data stored in Fire Base
Data Retrieved From Fire base
Vaccinator
User / Parent
Fire Base
creately
www.creately.com • Online Diagramming

5. Other Nonfunctional Requirements

All the nonfunctional requirements of the application are explained below.

5.1 Performance Requirements

All the performance of this android application depends upon the connection of internet because if user has high speed of internet then he can get access to it easily. And another requirement for better performance is sufficient RAM in android device which can quickly response to the user query; for example when button is pressed to carry some task.

5.2 Safety Requirements

All of the safety concerns and constraints are observed and implemented in the application to get more secure the user’s data. But on vaccinator end, secret key provided by the department must be secured so that no other user will login on the behalf of vaccinator and try to change the data.

5.3 Software Quality Attributes

Our android application has the following qualities.

5.3.1 Reliability

All the information present on our software is perfectly reliable and authenticated by the college authorities.

5.3.2 Availability

This system will be available whenever user is online. By using internet connection user can get access at any time except in some case when server is not available due to some issues.

5.3.3 Security

All the data of user is secure by making their separate account and having their own password of account.

5.3.4 Maintainability

Firebase database is used for maintaining user’s data. It provides the full fledge services to this application which needs by this application. So, at the backend firebase is doing the job to maintain data.

5.3.5 Ease of use

This application has very simple UI which guides user to use this application. Non-professional and ordinary users can easily use this application because of its very simple and efficient user interface.

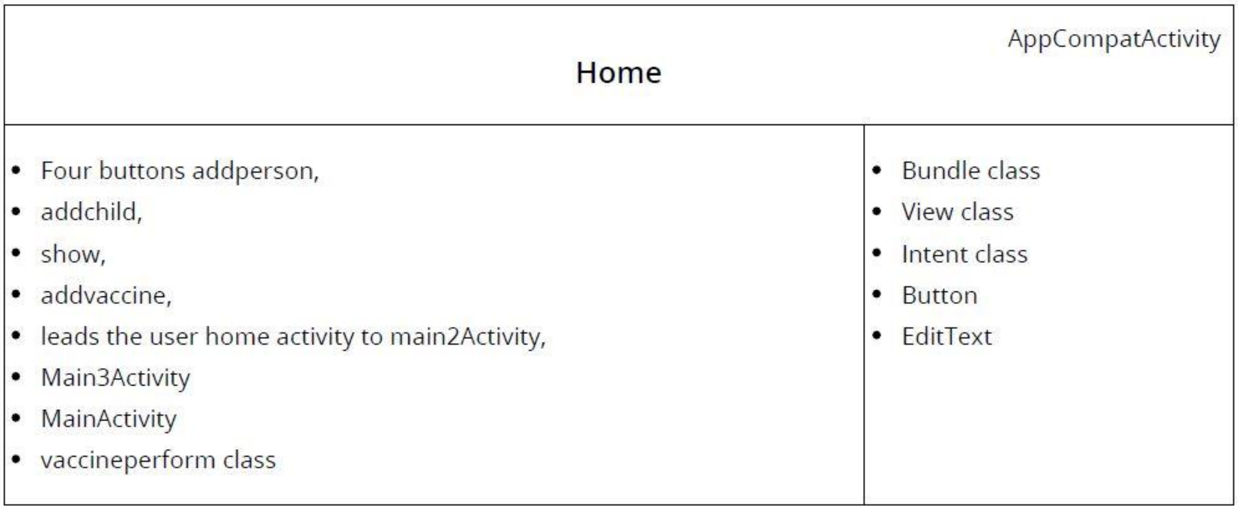
5.3.6 Reusability

After quitting from this application, whenever user sign in correct data will be available to the user.

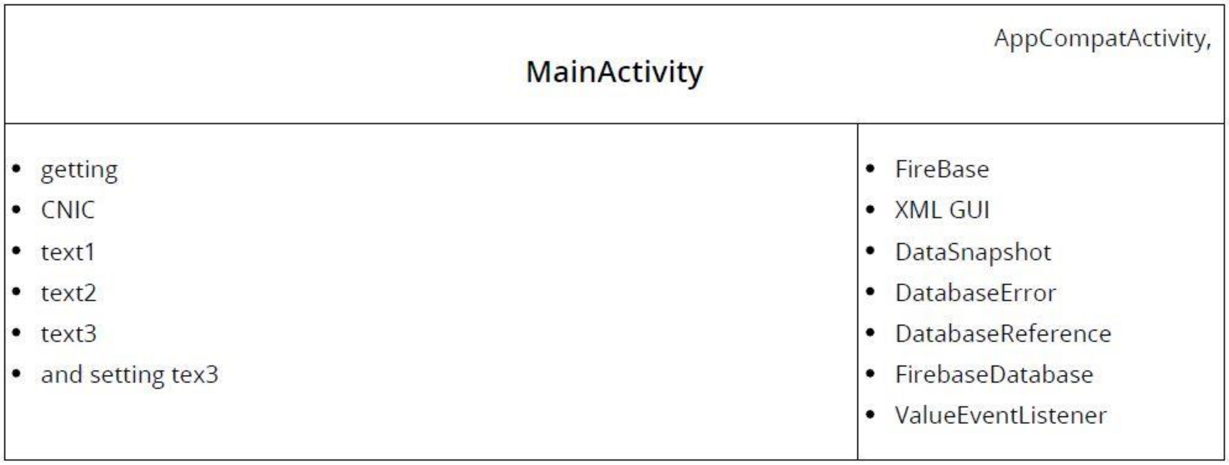
5.4 Business Rules

This SRS document clearly defines the role of each user and their functionalities under specific circumstances. To get more insight into product function section can be revisited.

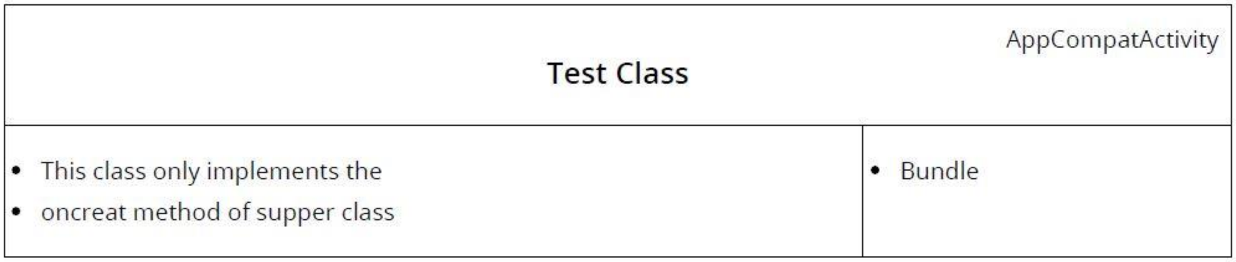
6. CRC cards



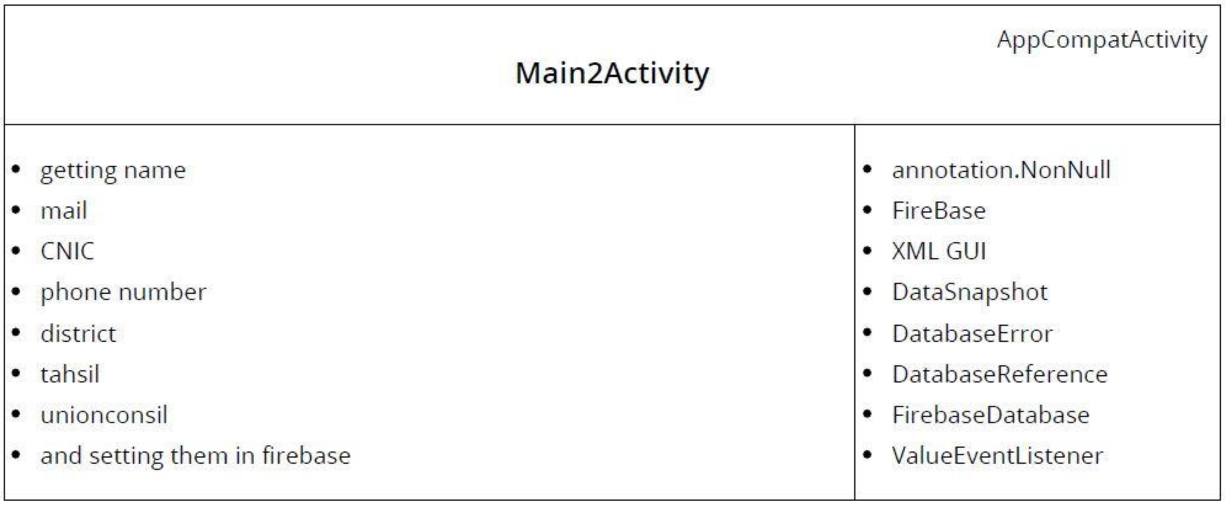
Home	AppCompatActivity
• Four buttons addperson, • addchild, • show, • addvaccine, • leads the user home activity to main2Activity, • Main3Activity • MainActivity • vaccineperform class	• Bundle class • View class • Intent class • Button • EditText



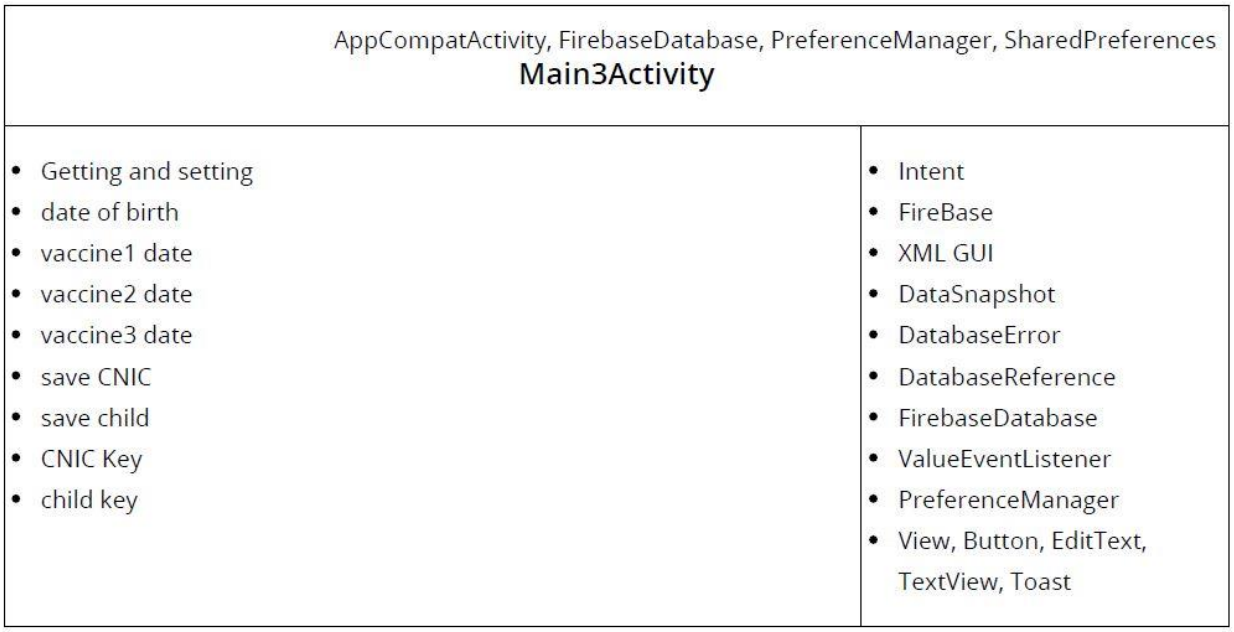
MainActivity	AppCompatActivity,
• getting • CNIC • text1 • text2 • text3 • and setting tex3	• FireBase • XML GUI • DataSnapshot • DatabaseError • DatabaseReference • FirebaseDatabase • ValueEventListener



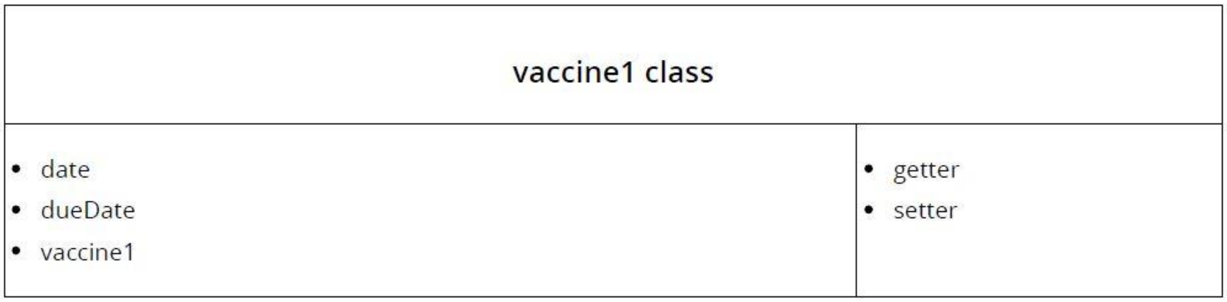
Test Class	AppCompatActivity
• This class only implements the • oncreat method of supper class	• Bundle



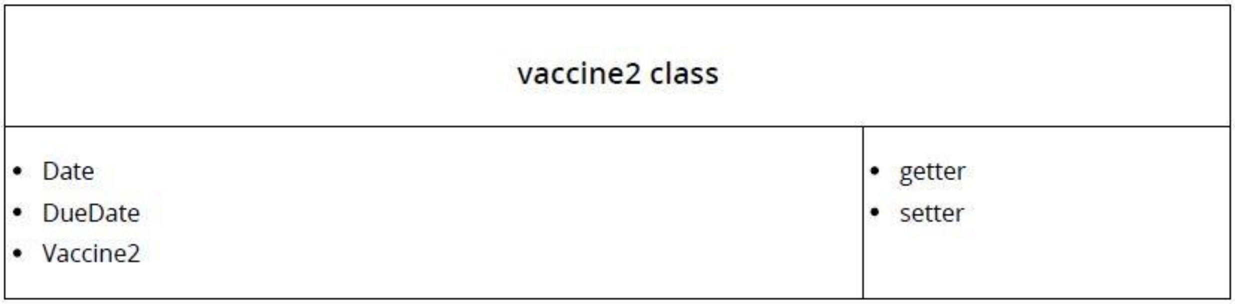
Main2Activity	AppCompatActivity
• getting name • mail • CNIC • phone number • district • tahsil • unionconsil • and setting them in firebase	• annotation.NonNull • FireBase • XML GUI • DataSnapshot • DatabaseError • DatabaseReference • FirebaseDatabase • ValueEventListener



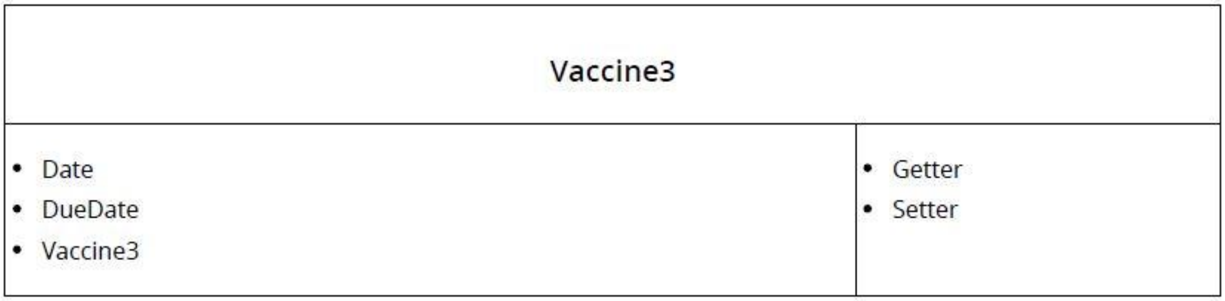
Main3Activity	AppCompatActivity, FirebaseDatabase, PreferenceManager, SharedPreferences
• Getting and setting • date of birth • vaccine1 date • vaccine2 date • vaccine3 date • save CNIC • save child • CNIC Key • child key	• Intent • FireBase • XML GUI • DataSnapshot • DatabaseError • DatabaseReference • FirebaseDatabase • ValueEventListener • PreferenceManager • View, Button, EditText, TextView, Toast



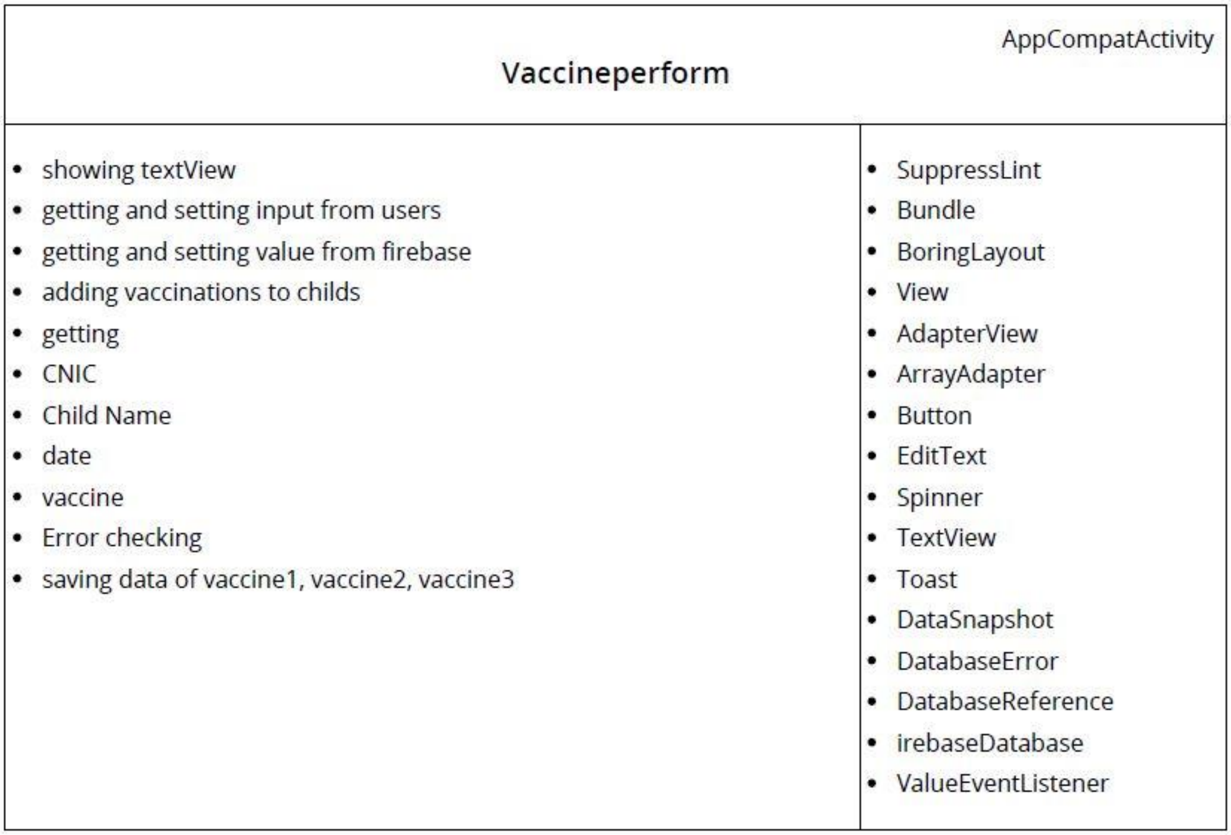
vaccine1 class	
• date • dueDate • vaccine1	• getter • setter



vaccine2 class	
• Date • DueDate • Vaccine2	• getter • setter



Vaccine3	
• Date • DueDate • Vaccine3	• Getter • Setter

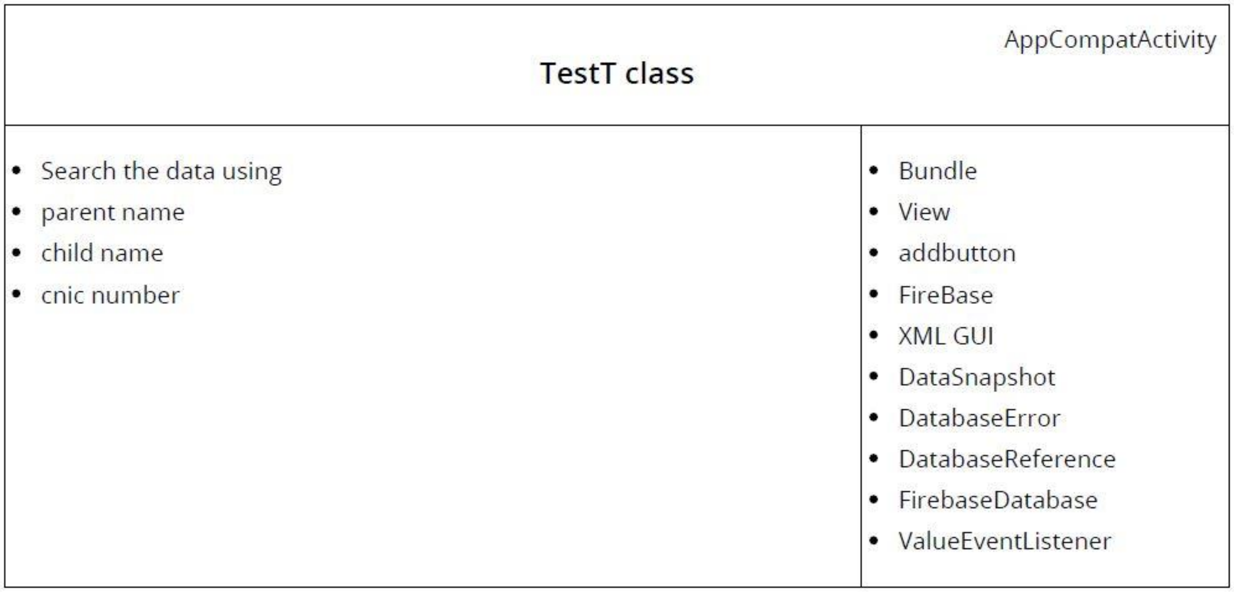


AppCompatActivity

Vaccineperform

- showing textView
- getting and setting input from users
- getting and setting value from firebase
- adding vaccinations to childs
- getting
- CNIC
- Child Name
- date
- vaccine
- Error checking
- saving data of vaccine1, vaccine2, vaccine3

- SuppressLint
- Bundle
- BoringLayout
- View
- AdapterView
- ArrayAdapter
- Button
- EditText
- Spinner
- TextView
- Toast
- DataSnapshot
- DatabaseError
- DatabaseReference
- irebaseDatabase
- ValueEventListener

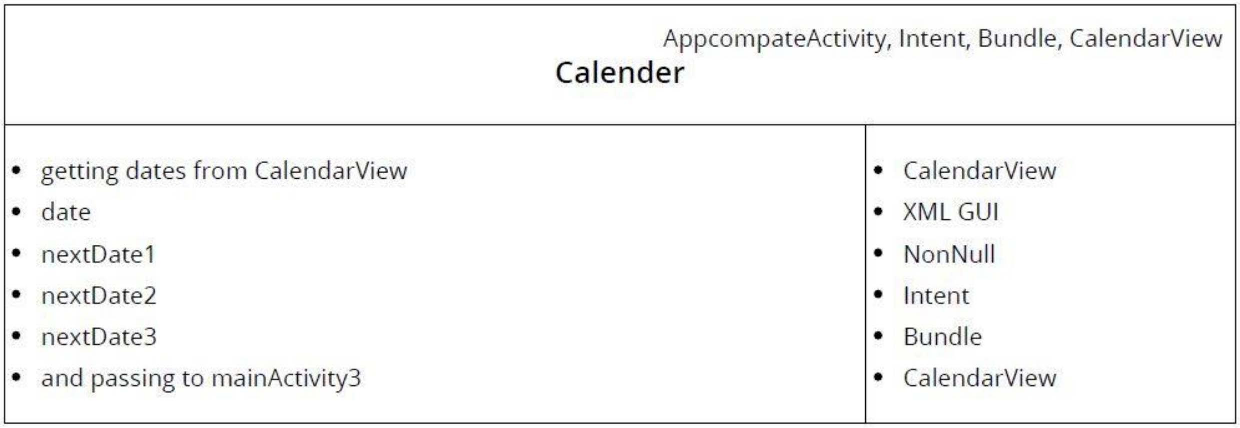


AppCompatActivity

TestT class

- Search the data using
- parent name
- child name
- cnic number

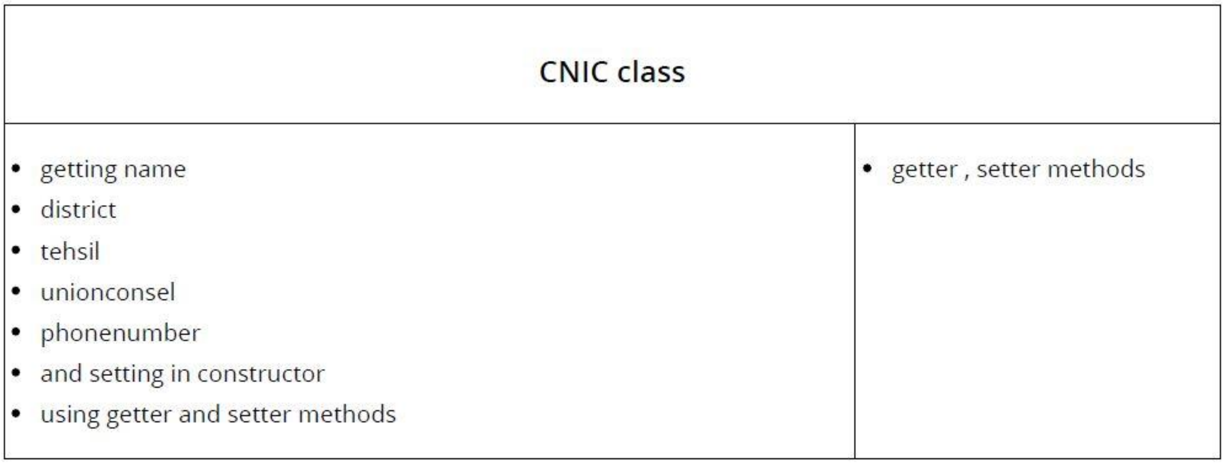
- Bundle
- View
- addbutton
- FireBase
- XML GUI
- DataSnapshot
- DatabaseError
- DatabaseReference
- FirebaseDatabase
- ValueEventListener



AppcompateActivity, Intent, Bundle, CalendarView

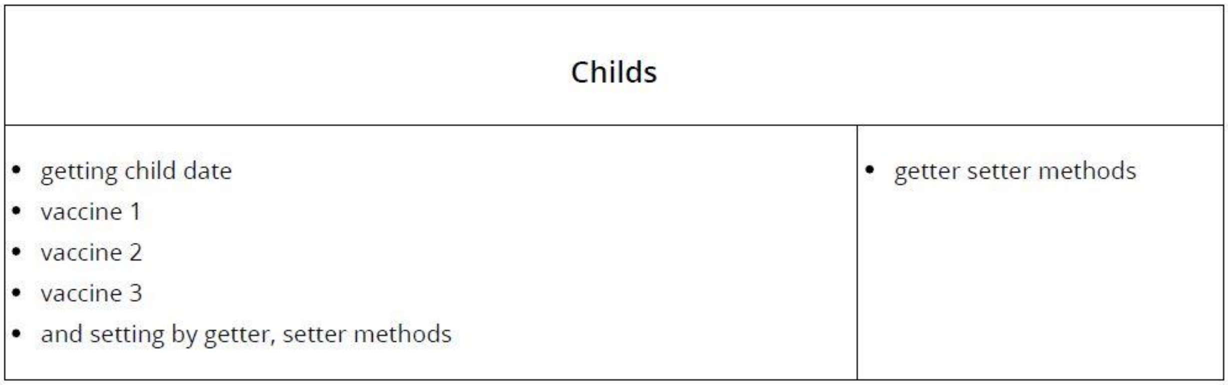
Calender

• getting dates from CalendarView • date • nextDate1 • nextDate2 • nextDate3 • and passing to mainActivity3	• CalendarView • XML GUI • NonNull • Intent • Bundle • CalendarView



CNIC class

• getting name • district • tehsil • unionconsel • phonenumber • and setting in constructor • using getter and setter methods	• getter , setter methods



Childs

• getting child date • vaccine 1 • vaccine 2 • vaccine 3 • and setting by getter, setter methods	• getter setter methods

7. References

- https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc
- https://en.wikipedia.org/wiki/Class-responsibility-collaboration_card
- https://en.wikipedia.org/wiki/Use_case
- http://www.advoss.com/software-quality-attributes.html