**REPORT**

**Mobile Programming Challenge-**

**Android**

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Project Requirements:

1. Use​ ​Firebase​ ​as​ ​your​ ​REST​ ​API​ ​and​ ​database.​ ​​http://firebase.io/

2. You​ ​will​ ​need​ ​to​ ​create​ ​a​ ​list​ ​view​ ​of​ ​profiles.  
3. Each​ ​profile​ ​should​ ​have​ ​all​ ​of​ ​the​ ​following​ ​information:

a. A unique integer ID

b. Gender (Male/Female)

c. Name

d. Age

e. Profile Image

f. Hobbies

4. Each​ ​profile​ ​should​ ​display​ ​its​ ​respective​ ​background​ ​color

a. Males​ ​profiles​ ​should​ ​have​ ​a​ ​blue​ ​background  
b. Female​ ​profiles​ ​should​ ​have​ ​a​ ​pink​ ​background

5. A​ ​user​ ​should​ ​be​ ​able​ ​to:  
 a. Filter​ ​the​ ​list​ ​to​ ​show​ ​only​ ​male​ ​or​ ​female​ ​profiles.

b. Clear​ ​the​ ​filter​ ​to​ ​show​ ​all​ ​profiles.  
c. Sort​ ​the​ ​list​ ​by​ ​age​ ​ascending​ ​or​ ​descending.  
d. Sort​ ​the​ ​list​ ​by​ ​name​ ​ascending​ ​or​ ​descending.  
e. Remove​ ​any​ ​sorts​ ​and​ ​go​ ​back​ ​to​ ​the​ ​default.  
f. Add​ ​a​ ​new​ ​profile​ ​using​ ​an​ ​overlay.  
g. Tap​ ​on​ ​a​ ​profile​ ​and​ ​go​ ​to​ ​a​ ​profile​ ​view.  
h. Remove​ ​a​ ​profile​ ​from​ ​the​ ​profile​ ​view.  
i. Update​ ​a​ ​profile’s​ ​hobbies​ ​from​ ​the​ ​profile​ ​view

6. The​ ​profile​ ​view​ ​should​ ​display​ ​the​ ​following​ ​information:

a. Gender (Male/Female)

b. Name

c. Age

d. Profile Image

e. Hobbies

7. The​ ​list​ ​should​ ​be​ ​sorted​ ​by​ ​ID,​ ​ascending​ ​by​ ​default.  
8. Any​ ​changes​ ​to​ ​the​ ​profiles​ ​should​ ​be​ ​reflected​ ​across​ ​all​ ​running​ ​instances​ ​of​ ​the​ ​app​ ​in

real​ ​time​ ​without​ ​requiring​ ​user​ ​interaction.

**Design Concept:**

Through this project I have tried to create a simple and easy to use interface that allows the user to create a new profile using a dialog, view the profile list. Following are the views available in the app:

1. **Profile List View**

This is the main view of the application which will be displayed to the user on application launch. This view has the list of user profiles showing name, age, gender, hobbies and image for each profile. In the profile list view page, users have options to sort and filter the list. User can filter the list based on gender by selecting the checkboxes. If female is selected, list of females will be displayed and if male is selected list of males will be displayed. If both or none are selected, all profiles will be displayed. User can sort the list based on name, age in ascending and descending order, default sort is by ID. User can create new profile by clicking on the plus icon. User can also go to profile detail view by clicking on the profile in the list view.

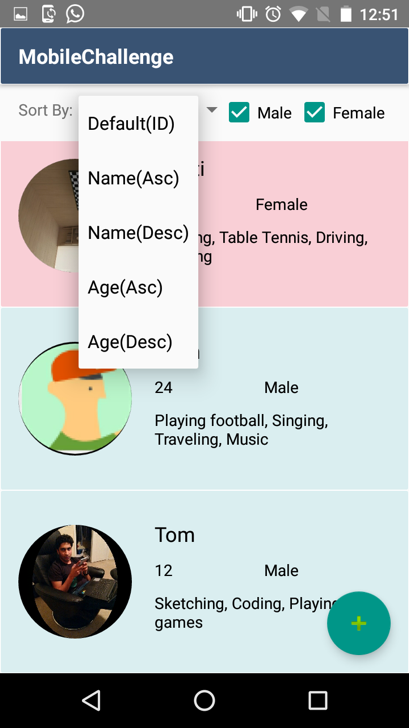
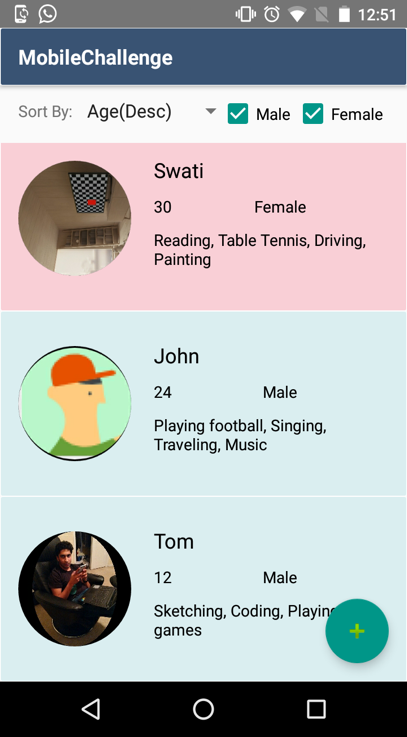


Fig 1. Profile List View

1. **Add Profile View**

By clicking on the + button, user will be shown a dialog box where he can enter the details of the new profile, select profile picture from galary and save it by clicking on the save button. If the user clicks on the cancel button, dialog box will be closed, and user will be navigated to the profile list view.

The following validations are done before creating the profile in the database.

1. User has entered name
2. User has entered age
3. User has entered hobbies
4. User has selected gender

When the validations are done, profile is created in the database. If the user has not uploaded a profile image, default image is displayed.

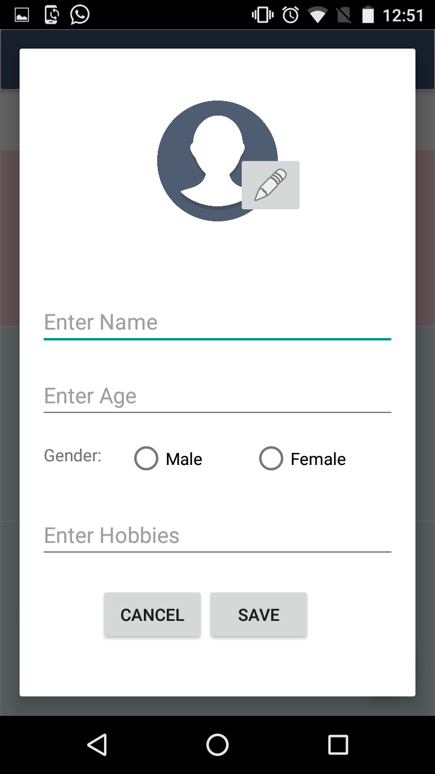


Fig 2. Add Profile View

1. **Profile Detail View**

The user can view the profile detail by clicking on the any of the profiles in the profile list view. The details of the profile like image, name, age, gender, hobbies are displayed on the detail page. User can click on the hobbies and edit it as well by clicking on the update button. User also has an option to delete profile. If the user clicks on the delete button a confirmation alert dialog is shown, if the user clicks on the yes button, the profile is deleted. If the user clicks on the no button, the action is discarded. The validation for hobbies not empty is done when the user clicks on the update button.

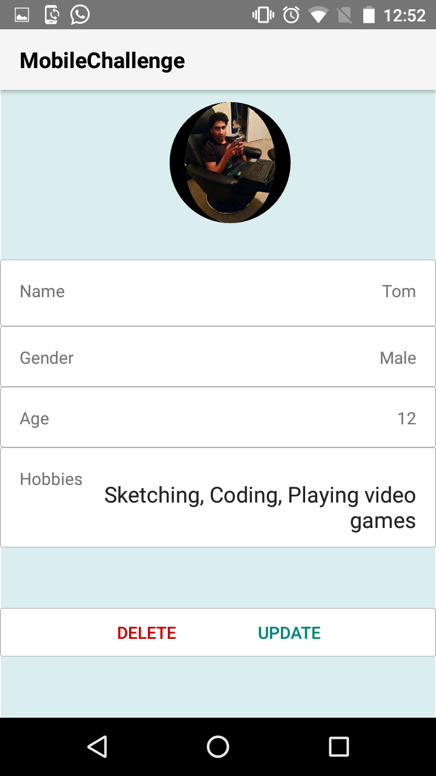


Fig 3. Profile Detail View

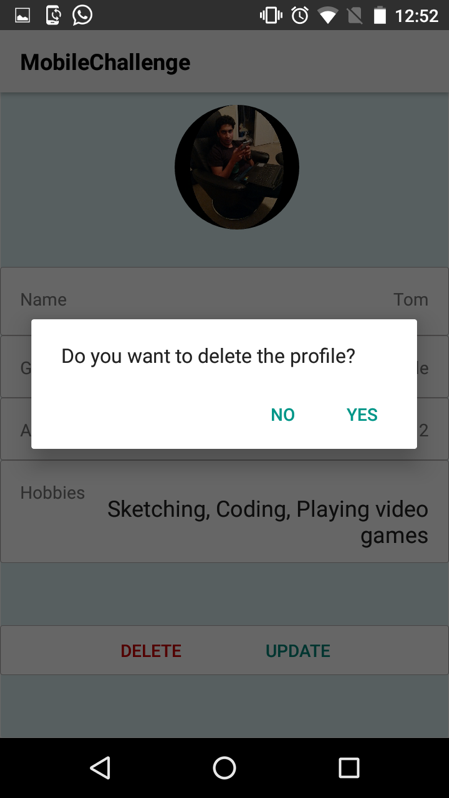


Fig 4. Profile Delete Confirmation

**Technologies Used:**

Mobile Application – Android (Java)

Database – Google Firebase Realtime database, Firebase storage

**Database schema:**

**User Details**

**long \_id**;  
String **userName**;  
**long age**;  
String **gender**;  
String **userImage**;  
String **hobbies**;

{

"\_id" : 1,

"age" : 27,

"gender" : "Female",

"hobbies" : "Table Tennis, Swimming, Singing, Travelling, Reading",

"userImage" : "https://firebasestorage.googleapis.com/v0/b/mobilechallenge-59b2a.appspot.com/o/3\_photo.jpg?alt=media&token=5ff7a0cf-454d-47e1-ab48-14a769cea01a",

"userName" : "Swati Jha"

}

**Project Structure:**

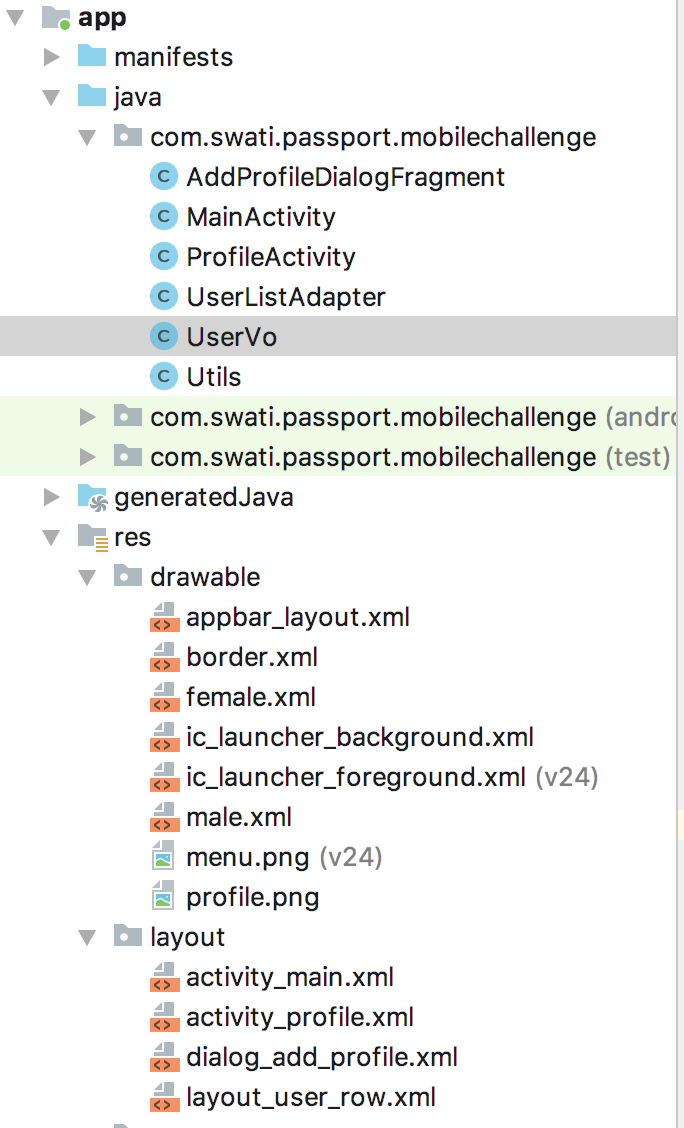
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Fig 5. Code Structure