

# Writeup

**Integrated Development Environment (IDE):** Android Studio

**Programming Language:** JAVA

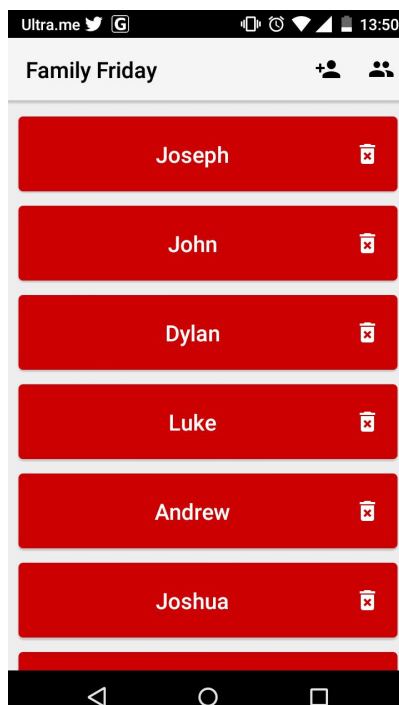
**Platform:** Android(4.2 and up)

- The project can be imported and run on android studio.
- The apk can be installed directly on an Android Device.

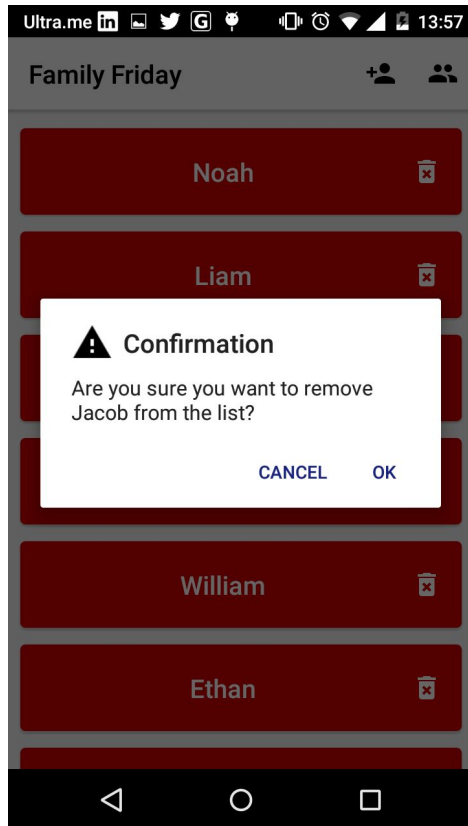
## Screens:


### HOME SCREEN:

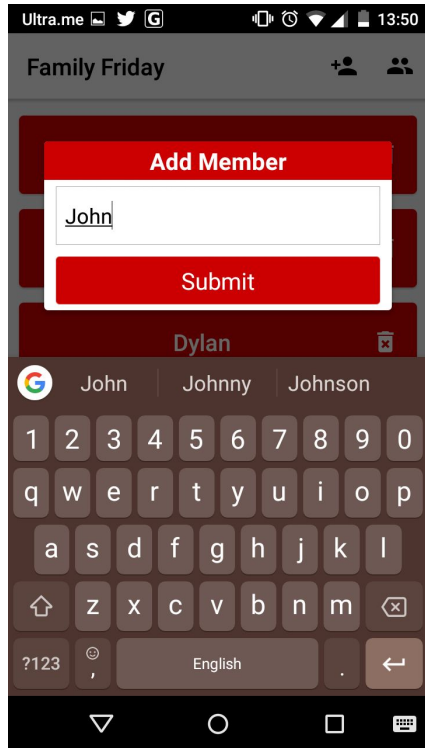
- The Home Screen has all the employees of ApartmentList and they are in a list.
- The names of the employees are in the list.



- Each name has a delete icon with it which is use to delete the member.
- A confirmation message is shown whenever the deletion has to be done.
- On confirmation the deletion is done in the database and the groups will be formed again as a member has been removed.



- When a new employee joins the company, that person can be added to the list by tapping on add people  icon which is on the menu bar.
- A pop up dialog will appear and the user shall enter the name and tap on submit.
- The entry will be done in the database and the new employee will reflect on the list at the end.
- Again new groups will be formed as a new employee is added.



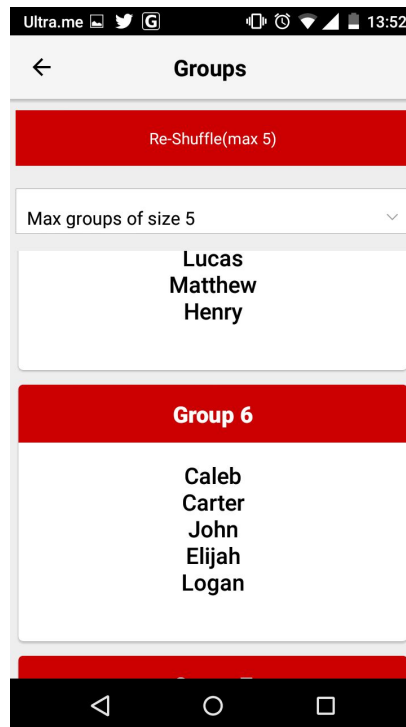
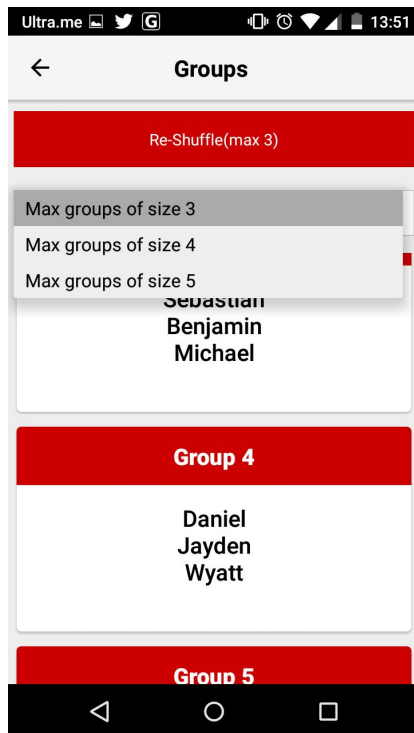
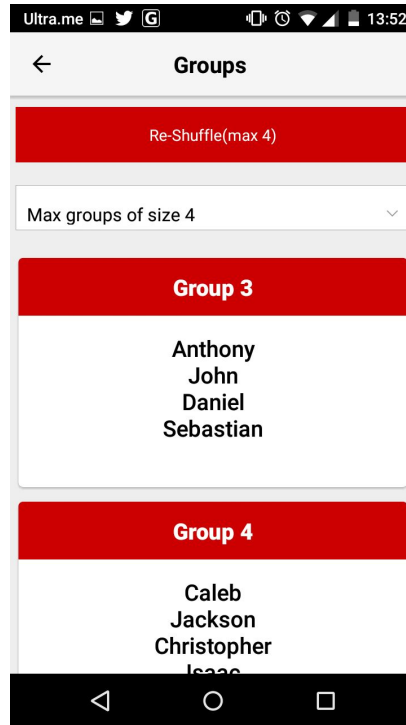
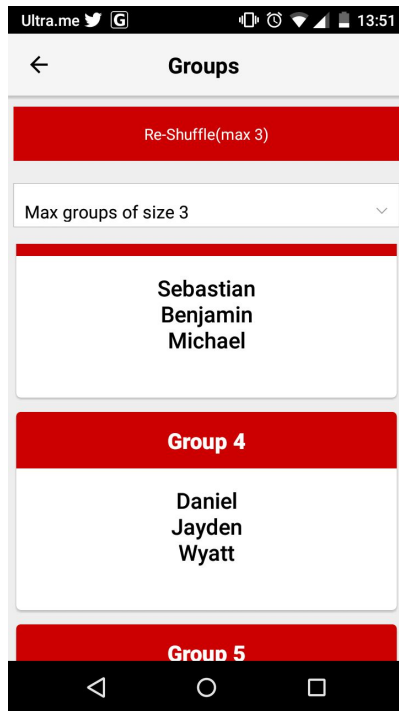
To navigate to the group screen the user shall tap on the group icon in the menu bar.



### GROUP SCREEN:

- Group Screen will have all the group combinations of the members.
- The groups are divided into three categories:
  1. Maximum number of groups with 3 members
  2. Maximum number of groups with 4 members
  3. Maximum number of groups with 5 members

Re-shuffling of each category can be done by clicking on the Reshuffle button depending on the category selected in the drop down.



- Maximum number of groups with 3 members Logic with an example of 50 members or more:

Total members	Maximum Groups of 3 people
50	45 (15 groups of 3) + 1 group of 5
51	17 groups of 3
52	16 groups of 3 + 1 group of 4
53	16 groups of 3 + 1 group of 5
54	18 groups of 3
	(Repeat of 51)
	Follows same pattern After this

- Maximum groups with four members Logic with an example of 50 members or more:

## Maximum Groups of 4

Total Members

50

44 (11 groups of 4) + 6  $\rightarrow$  (3+3) 2 groups of 3

51

48 (12 groups of 4) + 3 1 group of 3

52

13 groups of 4

53

12 groups of 4 + 1 group of 5

54

12 groups of 4 + 6  $\rightarrow$  (3+3)  $\rightarrow$  2 groups of 3

Follows the same pattern ~~for~~ here onwards

- Maximum groups with five members Logic with an example of 50 members or more:

Maximum Groups of 5 people

Total members

50  $\rightarrow$  10 groups of 5

51  $\rightarrow$  9 groups of 5 + 6  $\rightarrow$  (3+3) 2 groups of 3

52  $\rightarrow$  9 groups of 5 + 7  $\rightarrow$  (3+4)  $\rightarrow$  1 group of 3 + 1 group of 4

53  $\rightarrow$  9 groups of 5 + 8  $\rightarrow$  (5+3) 1 group of 5 + 1 group of 3

54  $\rightarrow$  9 groups of 5 + 9  $\rightarrow$  (5+4)  $\rightarrow$  1 group of 5 + 1 group of 4

55  $\rightarrow$  11 groups of 5

56  $\rightarrow$  10 groups of 5 + 6  $\rightarrow$  (3+3) 2 groups of 3

(Repeat of 51)

Follows same pattern After this

- For cases with 10 or less members:

For Members less than or equal to 10

$$10 \rightarrow 5 + 5 \text{ (2 groups of 5)}$$

$$9 \rightarrow 5 + 4 \text{ (1 group of 5 + 1 group of 4)}$$

(3+3+3) is also true but not implemented

$$8 \rightarrow 4 + 4 \text{ (2 groups of 4)}$$

$$7 \rightarrow 3 + 4 \text{ (1 group of 3 + 1 group of 4)}$$

$$6 \rightarrow 3 + 3 \text{ (2 groups of 3)}$$

$$5 \rightarrow 1 \text{ group of 5}$$

$$4 \rightarrow 1 \text{ group of 4}$$

$$3 \rightarrow 1 \text{ group of 3}$$

$$2 \text{ and } 1 \rightarrow \text{No group can be formed}$$



## **Persistence:**

- All names are stored in a database(SQLite).
- All groups of different combinations are stored in Sharedpreferences using Gson library.
- Whenever there is any addition or removal of an employee new groups of each and every category are formed and saved into preferences.
- Same is with shuffling for any category, new group combinations are stored in Preferences.

## **Other:**

- When the app is loaded for the first time some names will be loaded into database.
- The same names will be populated in list of the first screen.