PBD 2021
Android Mini App 1

Summary

Your first assignment for this course consists in writing a simple Android app using Kotlin that allows users to select a group of contacts from their address book, and use their contact information to send either a group email, or a group MMS. The app also enables users to add new contacts to the address book.

NOTE: Please read the instructions carefully before you begin programming!

Deadline: 23:59, March 23rd, 2021.

Features and Architecture

Your app must consist of two activities and three fragments:

1. MainActivity (of type AppCompatActivity), with layout file activity_main.xml;
2. HomeFragment (of type Fragment), with layout file fragment_home.xml: it will show a simple welcome screen with the name of the course, the name of the app, and the logo of the University;
3. ContactsFragment (of type Fragment), with layout file fragment_contacts.xml: it will show the list of contacts fetched from the device's address book; it will also include a floating action button with a plus sign, clicking on which should start the AddContact activity;
4. MessageFragment (of type Fragment), with layout file fragment_message.xml: it will show at least two buttons, one for email sharing and one for MMS sharing. Depending on which button the user selects, this fragment will prepare an email message (or an MMS message) to the selected recipients;
5. The menu should be shown in a NavigationDrawer element;
6. The menu should show the list of options (fragments) on the left, and a top section with the user picture;
7. Tapping on the user picture in the navigation drawer must call the device camera for the user to take a picture of themselves. Once taken, the picture must be saved as the new profile picture.

8. AddContactActivity (of type AppCompatActivity), with layout file activity_add_contact.xml; this activity will show a screen with three edit text widgets (for the contact's name, phone number and email), and one button. After filling in the contact details, the user will click the button and will transition to the ContactsContract where a new contact will be created using the filled information.

Requirements

1. The app must target API version 30;
2. Use Android X (do not use the support libraries);
3. You must use Fragments (from Android X);
4. Do not use external libraries or frameworks, you must complete this assignment using only what the Android SDK and Android X offer you.

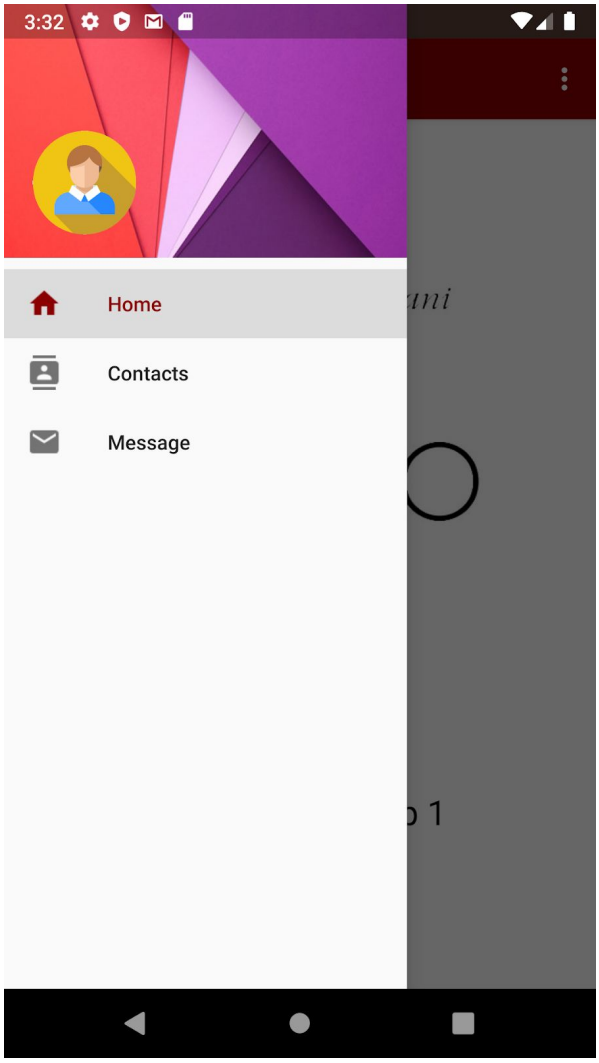
Implementation details

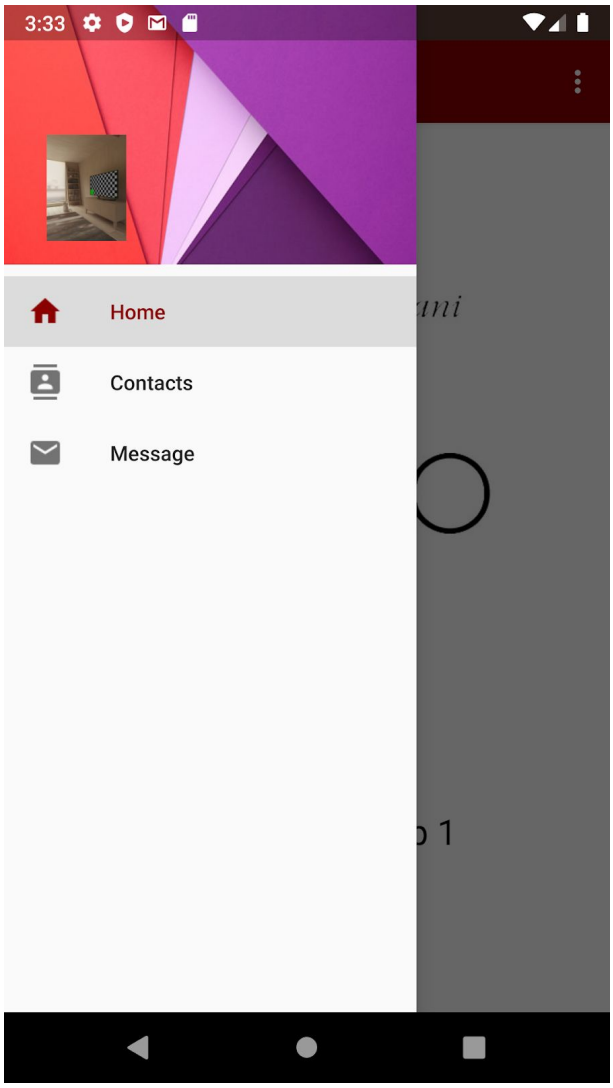
- The profile picture must be updated as soon as the user has taken a picture with the camera;
- You must use SharedPreferences to store app information (e.g. the profile picture);
- Your contacts list must remember the checked state of every item if the user rotates the screen, for example, or switches to another fragment before coming back to the Contacts fragment. When the context changes, the user should not be required to re-select the contacts again;
- Implement error checking (for example, if you try to send a message with no contact selected, or try to add a contact without filling in all three fields). Errors should be reported in a user-friendly manner;
- After adding a new contact, the app should return to the home screen;
- The app should not crash in normal usage (nevertheless, you don't need to implement thorough and exotic testing scenarios);
- Follow best-practice coding guidelines (for example, avoid using static methods and variables to pass information between fragments);
- Add meaningful comments to your code;
- Feel free to experiment with layout modifications (colors, structure, fonts): you are free to make the app look as good as you wish, as long as all the required functionality is there;
- For testing purposes, make sure you pre-populate your device's/emulator's Contacts app with some contacts with email addresses and phone numbers.

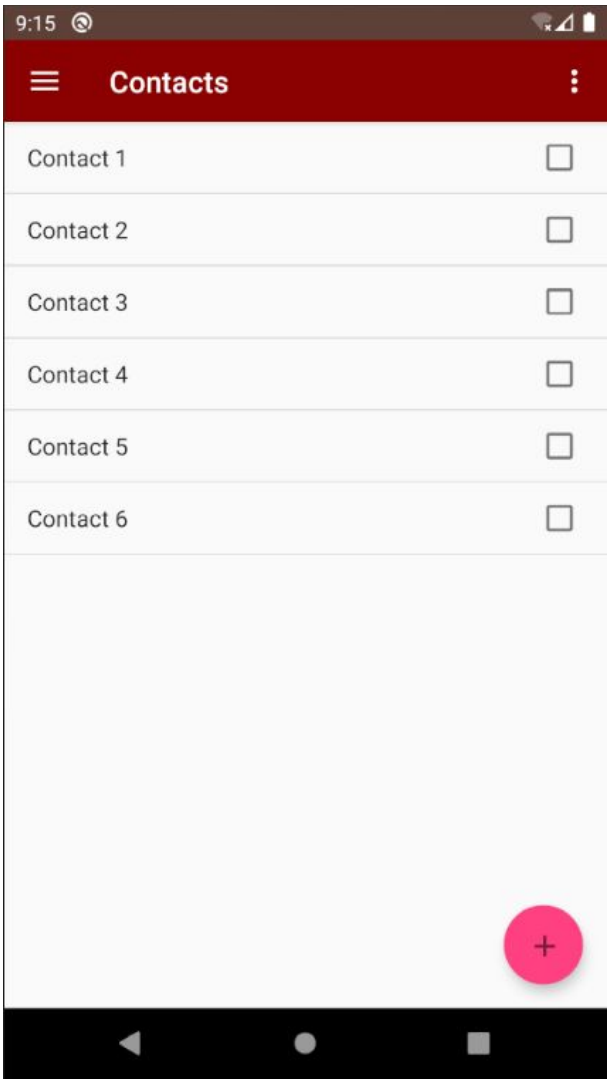
Important grading notes

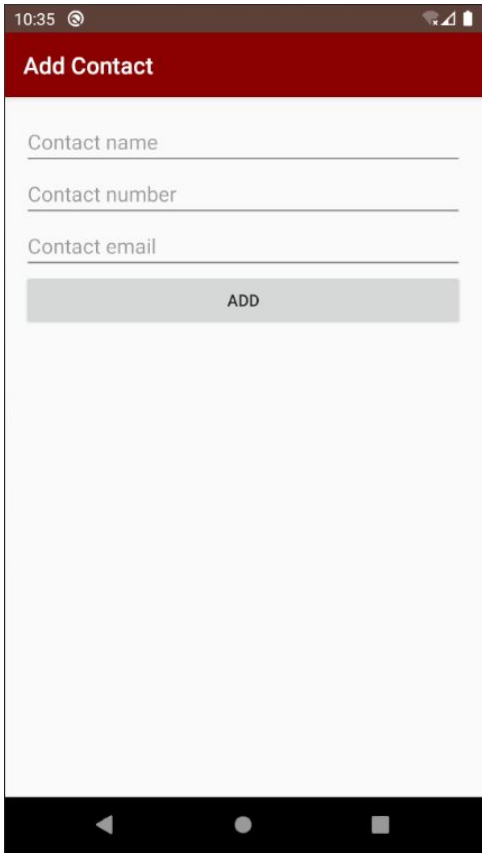
- You must submit your code in a repository titled PBD2021-MA-1 in your Bitbucket account. The repository must be private and the user “pbdfrita” (pbdfrita@gmail.com) must be added as a read-only member;
- Your project title must be: MiniApp1;
- Your classes must be named: MainActivity, HomeFragment, ContactsFragment, MessageFragment, AddContactActivity;
- Your layouts must be named: activity_main.xml, fragment_home.xml, fragment_contacts.xml, fragment_message.xml, activity_add_contact.xml
- Your project package must be named: si.uni_lj.fri.pbd.miniapp1
- Your code must be fully anonymous - your email, name, or bitbucket user name must not be shown anywhere in the code/comments;
- Your comments, variable names, etc., must be in English

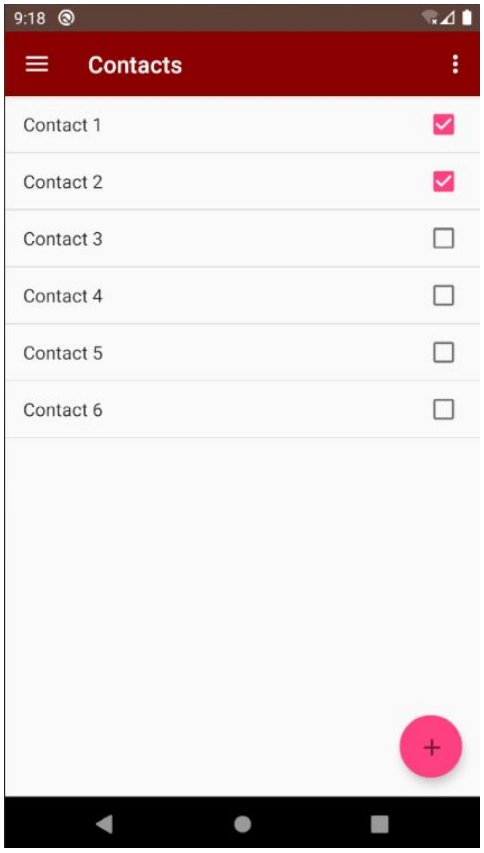
Example screenshots

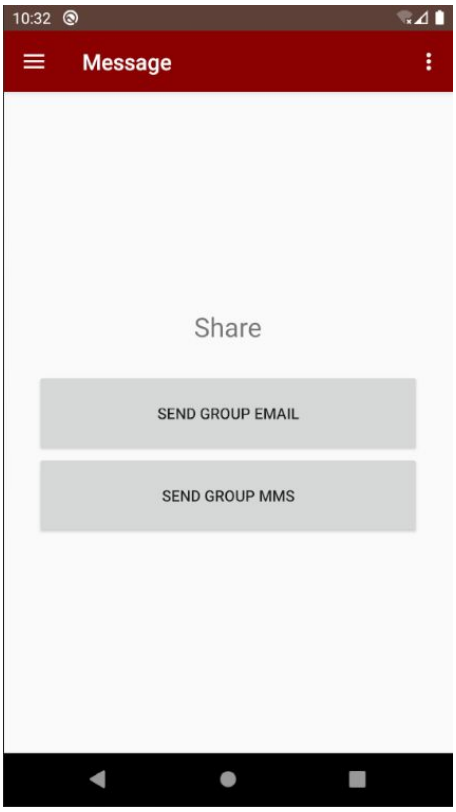


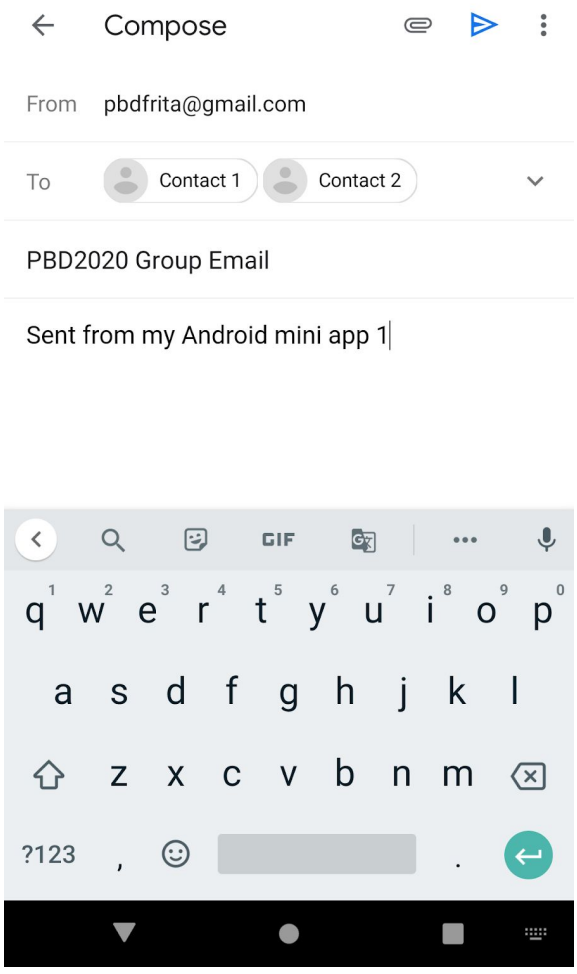

3:33
Home
Contacts
Message

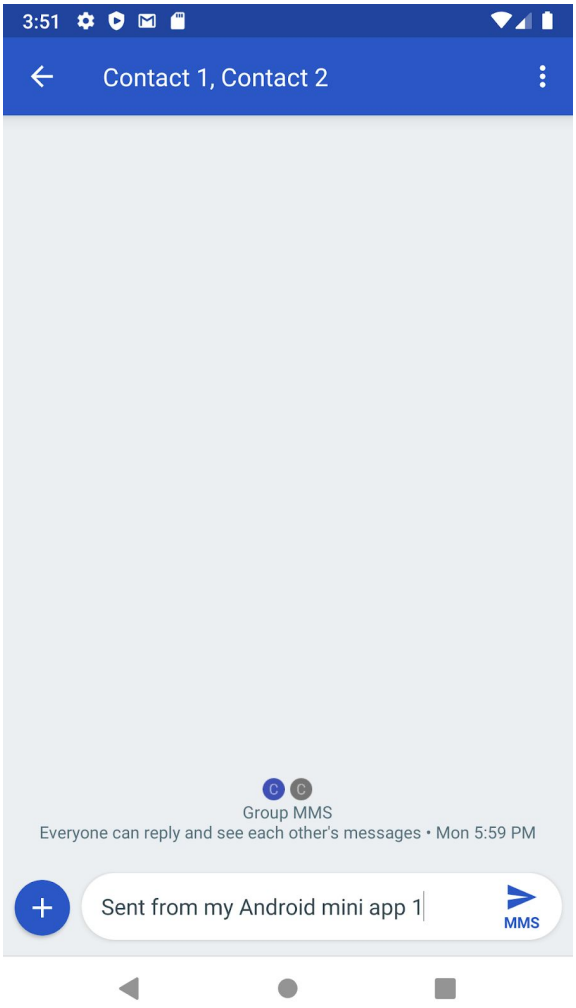

9:15
Contacts
Contact 1
Contact 2
Contact 3
Contact 4
Contact 5
Contact 6


10:35
Add Contact
Contact name
Contact number
Contact email
ADD


9:18
Contacts
Contact 1
Contact 2
Contact 3
Contact 4
Contact 5
Contact 6


10:32
Message
Share
SEND GROUP EMAIL
SEND GROUP MMS


Compose
From
pbdfrita@gmail.com
To
Contact 1
Contact 2
PBD2020 Group Email
Sent from my Android mini app 1


3:51
Contact 1, Contact 2
Group MMS
Everyone can reply and see each other's messages • Mon 5:59 PM
Sent from my Android mini app 1
MMS