PBD 2020
Android Mini App 1

Summary

Your first assignment for this course consists in writing a simple Android app 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.

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

Deadline: 23:59, March 30th, 2020.

Features and Architecture

Your app must consist of one activity 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;
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.

Requirements

1. The app must target API version 28;
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

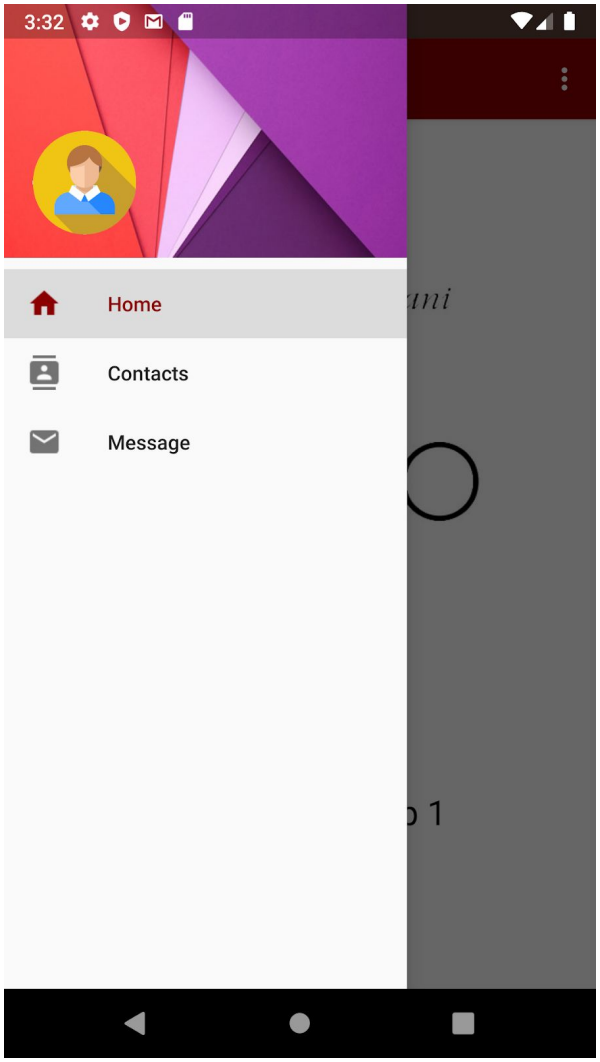
- The profile picture must be updated as soon as the user has taken a picture with the camera;
- You must use SharedPreferences to store app information (e.g. the profile picture);
- Your contacts list must remember the checked state of every item if the user rotates the screen, for example, or switches 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). Errors should be reported in a user-friendly manner;
- 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.

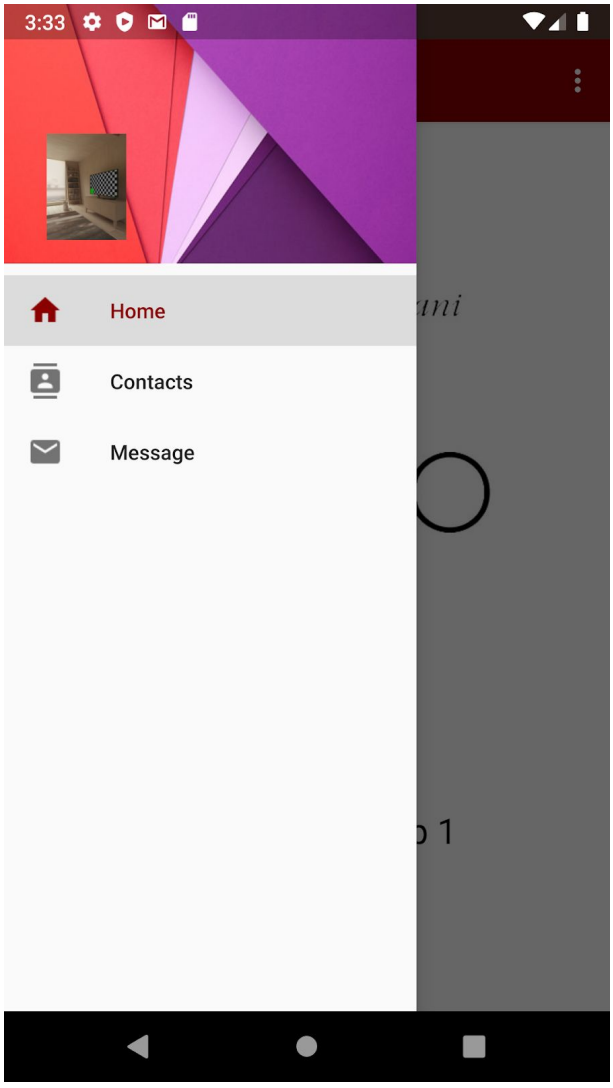
Important grading notes

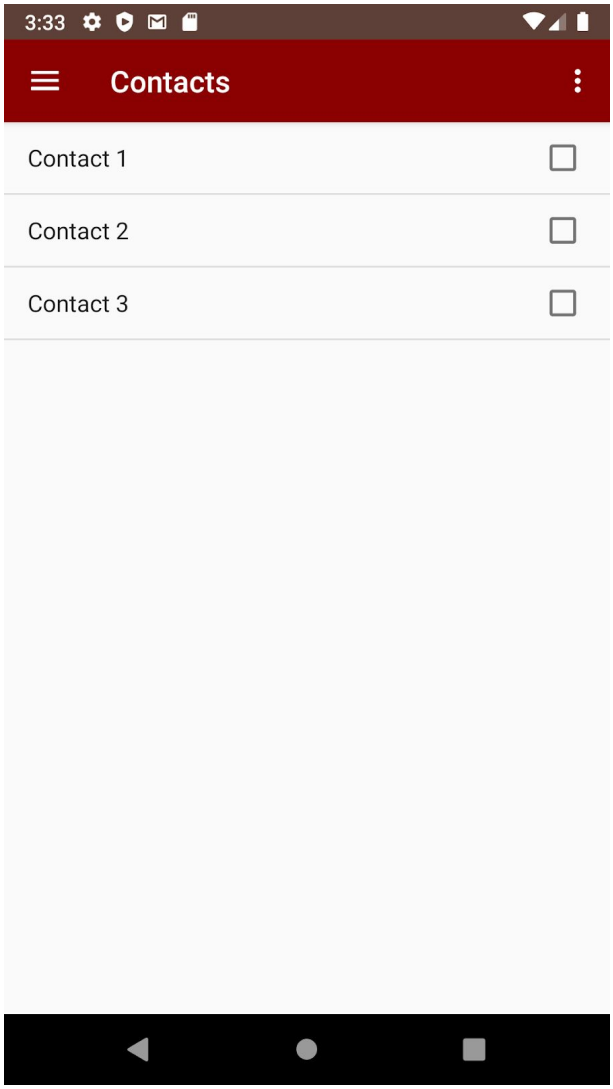
- You must submit your code in a repository titled PBD2020-MA-1 in your Bitbucket account. The repository must be private and the user "pbdfrita" (pbdfrita@gmail.com) must be added as a read-only member;
- Your project title must be: MiniApp1;

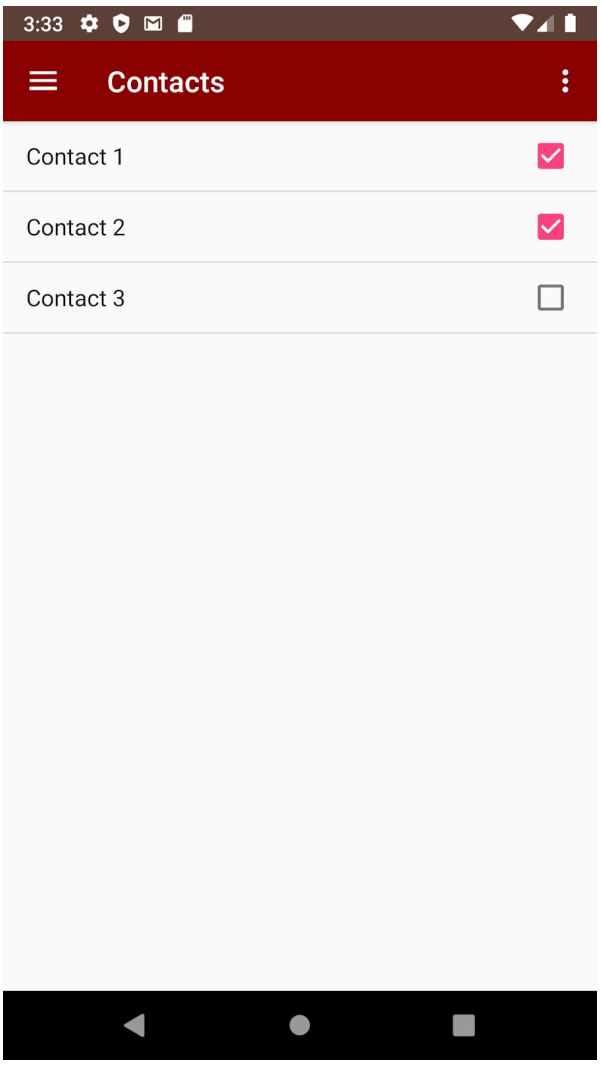
- Your classes must be named: MainActivity, HomeFragment, ContactsFragment, MessageFragment;
- Your layouts must be named: activity_main.xml, fragment_home.xml, fragment_contacts.xml, fragment_message.xml
- Your project package must be named: si.uni_lj.fri.pbd.miniapp1
- Your code must be fully anonymous - 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

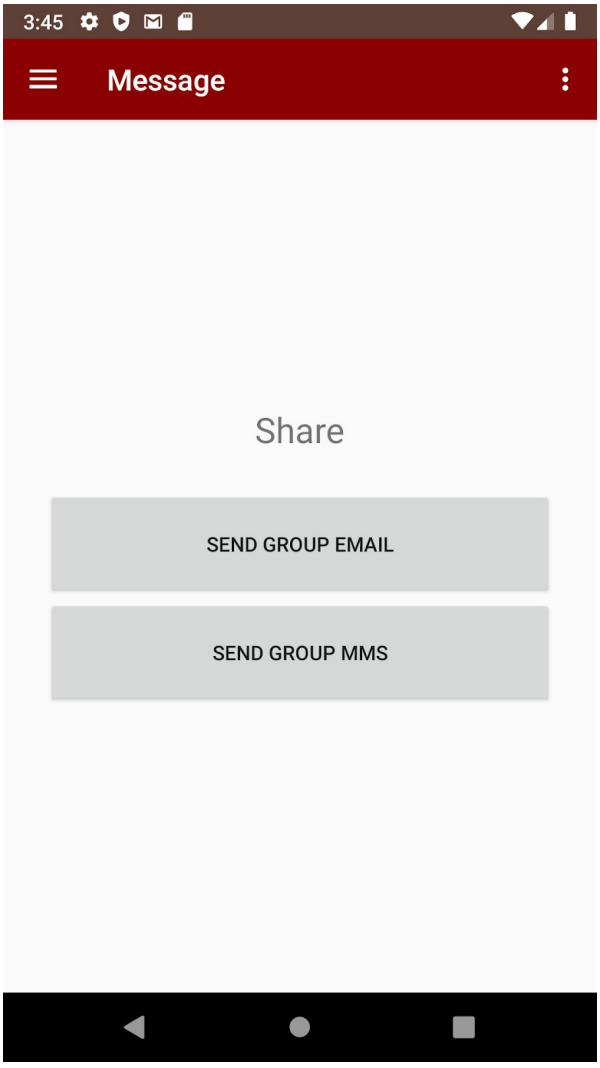
Example screenshots

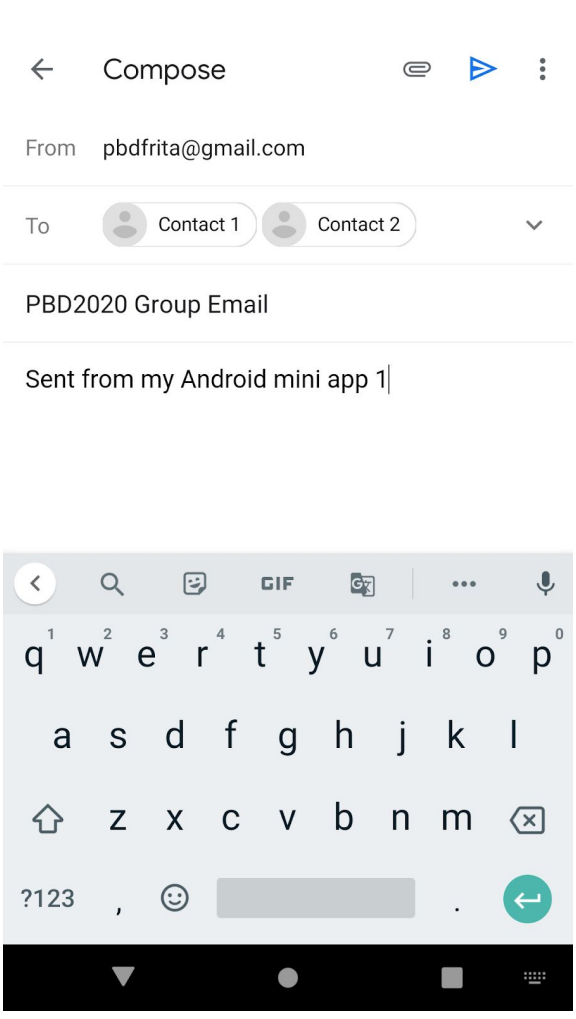


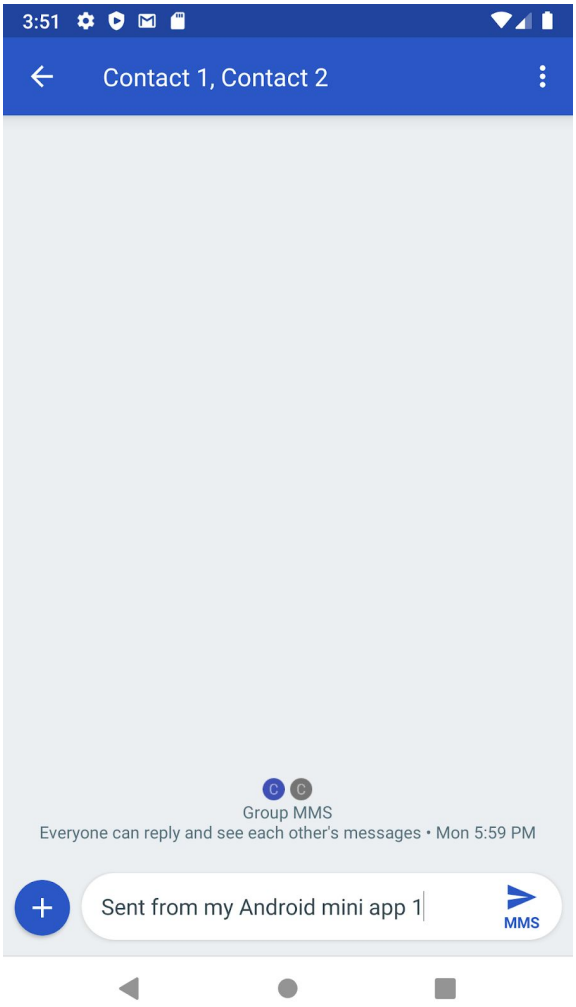

3:33
Home
Contacts
Message


3:33
Contacts
Contact 1
Contact 2
Contact 3


3:33
Contacts
Contact 1
Contact 2
Contact 3


3:45
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