UNIVERSITY OF PRIMORSKA

FAMNIT

DEPARTMENT OF COMPUTER SCIENCE

System III – Autumn Semester / 2022

REPORT OF PROJECT

[Abroad Guide for Students]

SÜLEYMAN GÖLBOL

76210123

1. URL to Git repository

https://gitlab.com/sglbl/abroad-guide-for-students

2. URL to a demo video

https://www.youtube.com/watch?v=6NWT20oOGMk

In the video, I illustrated all the functionalities of the application with invalid and valid test cases.
Labels indicating which functionality is demonstrated is on the description of the video, also you can see as YouTube time stamp chapters.

3. URL to Application Files

Android Files

https://drive.google.com/drive/folders/1oIzovNR6spAk1gPKOE6pMtkrO4VBOqg4?usp=sharing

Backend Files for Database Management

https://www.studenti.famnit.upr.si/~76210123/76210123/

4. URL to APK [Android Application Package] File

https://drive.google.com/file/d/1ocu57B_D2UcehCQ8i36foHXeegkfEsAW/view?usp=sharing

Apk can be installed on Android Devices with the .apk file on the link.

5. Details for Each Functionality

- All instructions about how to use functionality exists in the demo video with my explanation.

- ***For every functionality;*** I used PHP web technology because it’s not that difficult and in the time I started to this project I didn’t have any information about React, Angular or Node JS.

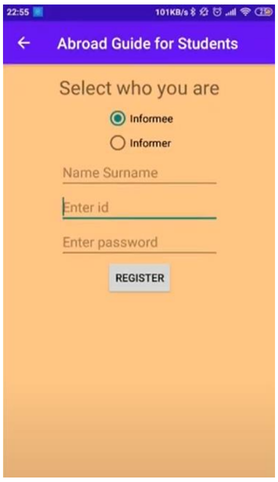
- ***For every functionality;*** I used PHP web technology because sending and getting information between Android app and database is easy with JSON objects. Because parsing json is easy.

- ***For every functionality;*** I used Volley open source HTTP library which belongs to Google. RequestQueue class in Volley makes networking for this Android app easier and faster. Volley handles multiple concurrent network connections also it does automatic scheduling of network requests. [This is the only external 3rd party library that I used.]

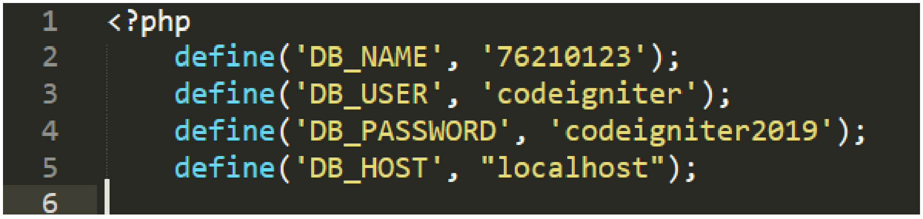
Other Details

5.1) Register Functionality

This functionality handles register functionality of the project. It connects to this https://www.student.famnit.upr.si/~76210123/76210123/v1/registerUser.php php file for checking if user with same id exists; if it doesn’t create user and store it on database.



The most difficult part for this was the defining DB_HOST. I was thinking that DB_HOST should be the link of phpMyAdmin link in Famnit website. I solved this problem with the help of teacher.

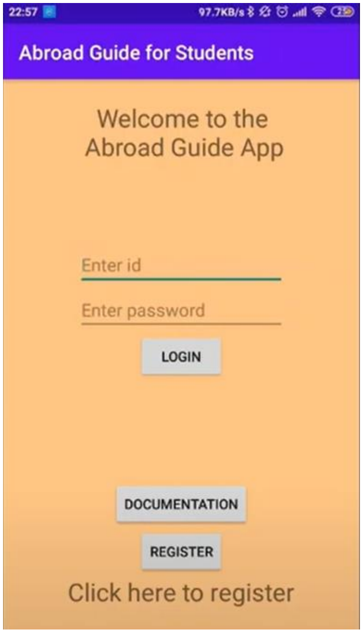


```php
<?php
    define('DB_NAME', '76210123');
    define('DB_USER', 'codeigniter');
    define('DB_PASSWORD', 'codeigniter2019');
    define('DB_HOST', "localhost");

```

5.2) Login Functionality

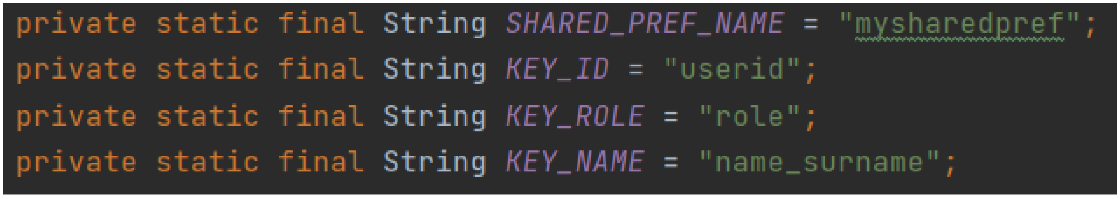
This functionality handles login functionality of the project. It connects to this https://www.student.famnit.upr.si/~76210123/76210123/v1/userLogin.php php file for checking if user with same id and password exists; if exists $response['error'] will be false so user can log in to system.



Welcome to the Abroad Guide App

Click here to register

It uses “SharedPreferences” class of Android Studio. This way, app keeps data of the logged in user.



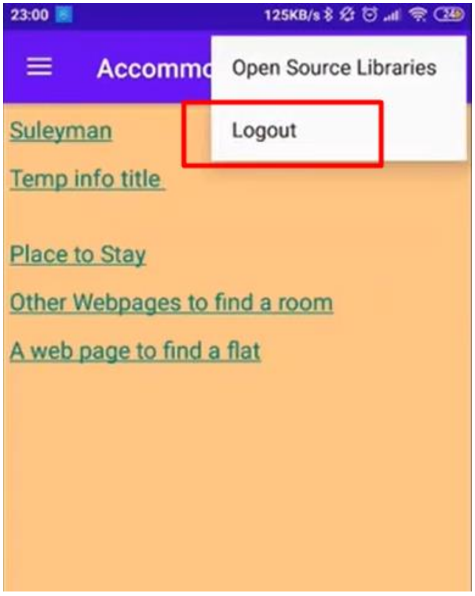
```java
private static final String SHARED_PREF_NAME = "mysharedpref";
private static final String KEY_ID = "userid";
private static final String KEY_ROLE = "role";
private static final String KEY_NAME = "name_surname";
```

My SharedPrefManager class uses SharedPreferences and keeps data of user in these static final Strings. SharedPreferences.Editor edits the keeping data.

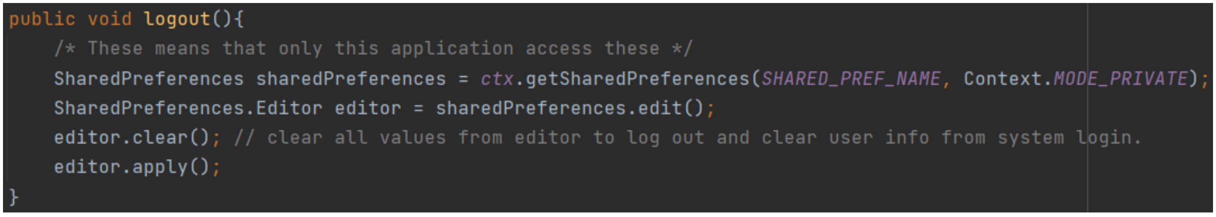
The most difficult part for this was putting user information on the SharedPrefManager. Because SharedPrefManager requires editor to alter information there.

5.3) Logout Functionality

This functionality handles logging out setting of user.



It uses “SharedPreferences” class of Java. My SharedPrefManager class uses SharedPreferences   and keeps data of user in these static final Strings. SharedPreferences.Editor has clear() and apply() methods and these methods clears user logged in user information from system.

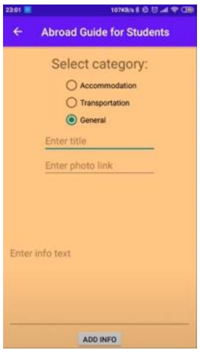


```
public void logout(){
    /* These means that only this application access these */
    SharedPreferences sharedPreferences = ctx.getSharedPreferences(SHARED_PREF_NAME, Context.MODE_PRIVATE);
    SharedPreferences.Editor editor = sharedPreferences.edit();
    editor.clear(); // clear all values from editor to log out and clear user info from system login.
    editor.apply();
}
```

I didn’t have any difficulty to implement this functionality.

5.4) Create Information Functionality

This functionality handles the adding information to system. It connects to this https://www.student.famnit.upr.si/~76210123/76210123/v1/setInfo.php php file for adding information. If info added successfully $response['error'] will be false. When creating information also it keeps an instance of informer user id who created the info. [So, when that user wants to remove; she/he will.]

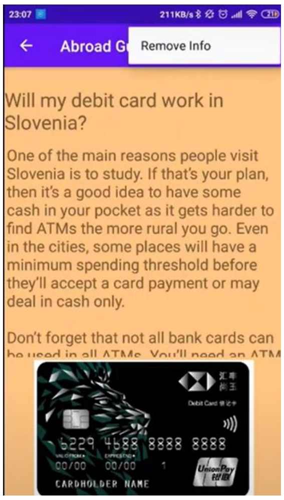


Select category:
○ Accommodation
○ Transportation
● General

The biggest difficulty I've faced here was after adding information; to make them visible in the main page. In the beginning I didn't have u_id to keep id of user who shared so I used normal information id to keep user id but it was unique so I removed uniquety of it. But this time, database management system didn't let me add or remove anything because without unique id it's risky. So I had to change everything so now I have unique info id and u_id which keeps user id who shared.

5.5) Remove Information Functionality

This functionality handles the adding information to system. It connects to this https://www.student.famnit.upr.si/~76210123/76210123/v1/removeInfo.php php file for removing information from database. When removing information it checks the user's id and role if that user is the informer who shared it or not.



Will my debit card work in Slovenia?

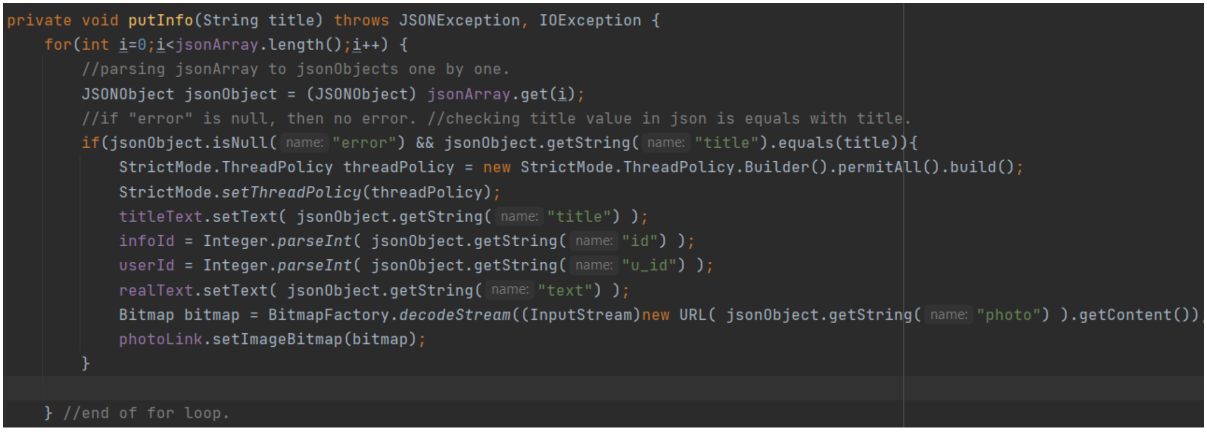
One of the main reasons people visit Slovenia is to study. If that's your plan, then it's a good idea to have some cash in your pocket as it gets harder to find ATMs the more rural you go. Even in the cities, some places will have a minimum spending threshold before they'll accept a card payment or may deal in cash only.

Don't forget that not all bank cards can be used in all ATMs. You'll need an ATM

The biggest difficulty I’ve faced was to keep track of user id who shared(that’s the only one who can remove info). But I didn’t have u_id to keep user info so I changed database columns to add this and then I fixed.

5.6) Bonus: Converting image link to Image Functionality

It uses bitmap class to decode the image link from string set image as this bitmap.



```java
private void putInfo(String title) throws JSONException, IOException {
    for(int i=0;i<jsonArray.length();i++) {
        //parsing jsonArray to jsonObjects one by one.
        JSONObject jsonObject = (JSONObject) jsonArray.get(i);
        //if "error" is null, then no error. //checking title value in json is equals with title.
        if(jsonObject.isNull( name: "error") && jsonObject.getString( name: "title").equals(title)){
            StrictMode.ThreadPolicy threadPolicy = new StrictMode.ThreadPolicy.Builder().permitAll().build();
            StrictMode.setThreadPolicy(threadPolicy);
            titleText.setText( jsonObject.getString( name: "title") );
            infoId = Integer.parseInt( jsonObject.getString( name: "id") );
            userId = Integer.parseInt( jsonObject.getString( name: "u_id") );
            realText.setText( jsonObject.getString( name: "text") );
            Bitmap bitmap = BitmapFactory.decodeStream((InputStream)new URL( jsonObject.getString( name: "photo") ).getContent())
            photoLink.setImageBitmap(bitmap);
        }

    } //end of for loop.
```

The most difficult part for this functionality was “android.os.NetworkOnMainThreadException” exception that I had. The main thread is the UI thread, and system didn’t let me do an operation in the main thread which may block the user interaction. To solve this I used StrictMode class from Android and ThreadPolicy method of it.