Laboration 2

DA330A

Software Engineering

15 hp (VT23)

Content

Lab 2 preparations

Android Studio installed

By now you should have worked with Android Studio. Check again that you have Android Studio correctly installed and that IDE is prepared with desired SDK versions and emulators: https://developer.android.com/studio.

This lab can be done individually or in group of 2 students.

Preparation with Firebase

Read about Firebase Firebase Realtime Database (google.com)

Read about FirebaseDatabase library, classes, methods and constructors com.google.firebase.database | Firebase

Suggested video to prepare with:
1. (2383) Save Data in Firebase Realtime Database in Android Studio || Firebase Realtime Database || 2021 - YouTube
2. (2383) How to Retrieve data from Firebase Database in Android Studio|| Retrieve data from Realtime Database - YouTube
3. (2383) How to Update Data in Firebase Realtime Database in Android Studio || Firebase Realtime Database - YouTube

Lab 2 task description

The purpose of the lab is to use Android application to change data placed on Firebase, but also to update Android application when data is changed in Firebase.

Task 1

- Go to Firebase console and log in with your Google account https://firebase.google.com/
- Create Firebase project and connect it to your Android application

Task 2

Add following data to the Firebase manually (<u>optional</u>-or through the Android app)

- "light:on", "door:open" and "window:open"

Task 3

- Develop Android app layout presented in Figure 1.
- Turn light off, by clicking on the corresponding switch. Send to the Firebase that the light is off. Do the same for the door and window attributes.

Task 4

Add one more button to Android application which will handle speech recognition.

Update the Firebase with the word(s) that you catch through speech recognition. For example, "Open door".

Task 5

Confirm that the Android application is updated with the latest data and that the images are changed based on the value.
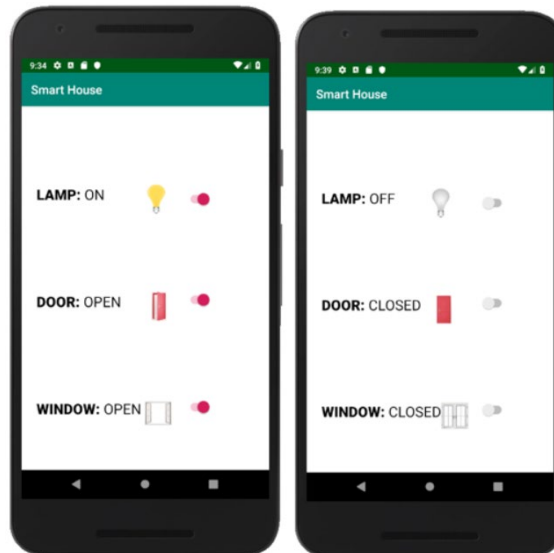

Figure 1. Android smart home application

Good luck!