

# PROG 39402

## Advanced Android Application Development

### Final Project

**Submission Deadline: Dec. 10, 2021**

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#### Instructions :

- This assignment is to be done individually or in a group of up to 3 members.
- The final grades will be dependent on individual work as well as successful completion of planned project work as a team.
- There will be **periodical check-ins and submissions** for various phases of the project which could be graded or ungraded. Grade distribution and due dates for the same will be updated in the submission folder periodically.
- I will use **Pixel API 25** simulator to run the Android app.

#### Project Requirements and Implementation:

You are required to create an Android application as a part of this project. The app must support functionalities as specified below:

#### Project Proposal and Setup: (5%) (due by Nov. 30, 2021 @11:59pm)

To start with the project, you are required to create the proposal document having following information about your project work:

##### Introduction to app:

Provide the introduction to the application by describing

- purpose of the app,
- the target audience,
- important features,
- services and functionalities provided to the user,
- various use-cases of the app, etc.

##### Work Distribution:

Provide the work distribution for each of the team member. There **must** be exactly one owner for a functionality and/or use-case. Specify the name and student id for each group member along with functionalities and use-cases they will be responsible for. Your individual grade will depend on the functionality and/or use-case for which you are the owner.

#### Note:

- Once you are ready with the proposal document, submit it on-line into the dropbox. Every team member must submit the same proposal.

- If you are working in a team, submit a document in the above mentioned dropbox that lists the members of the team.
- **If you do not want to pick your own project, refer to the default project at the very end of this document – “Default Project”.**

The Project Assignment naming requirements:

## 0) Naming requirements:

Start your NEW project by the following rules:

- Create new project name** – *SurveyFinalProject*, or *GameFinalProject*, - according to your topic, one word. It will be your unique project application name; you can't be changed in the future;
- Package name:**  
use the following package name: *project.st23456.alex*  
*You have to use your studentID (for example, st23456) and your first name(for example, alex) as shown above.*
- Language:** Kotlin
- Min SDK:** 27
- I will use **Pixel API 25** simulator to run the Android app.

***Note: If you do not follow the rules above, your project will not be accepted to grading.***

## 1) User Interface: (10%)

- Your app must have responsive UI designed using various layouts such as ConstraintLayout, TableLayout, LinearLayout, or MotionLayout, etc.
- UI should look consistent on different form factors such as screen size, screen orientation, dark mode or light mode.
- The UI should be crisp and beautiful.
- The text in all the Activities/Fragments must be legible at every size in various form factors.
- Adornments must be subtle and appropriate.

## 2) Code Organization: (10%)

- Your app must be structured using appropriate architecture components suggested by Android JetPack (ViewModel, LiveData, Navigation, etc...)

- The code must be modular, used appropriate naming conventions.
- Use comments to describe the functionalities of each of the user-defined classes and methods in your code.
- Contribution in the project by each of the team member will be assessed through the work they have committed on reflections document and will be determining factor for individual grading.

### 3) Fundamental Android Functionalities: (35%)

You should use appropriate Android functionalities such as Activity, Fragments, RecyclerView, Pickers, Spinners, etc. for various use-cases in your app. There should be appropriate flow of navigation between the Activities/Fragments. Use appropriate mechanisms such as SharedPreferences or Intent Extras to exchange data between Activities/Fragments.

### 4) Data Persistence: (20%)

You must use Room database or Firebase database for data persistence in your app. Use appropriate architecture to organize your code while doing data persistence.

### 5) Project Demonstration: (20%)

In the last week of the term, you are to demonstrate your project work. Before demonstration of the project, make sure that you

- Create the personal reflection document to reflect the functionalities accomplished and add the screenshots for various screens in your app,
- Record the video/screen demonstrating (up to 5 min. for the entire project) the functionalities and features of your app and upload it to the project submission folder on SLATE.

During the demonstration of your project

- code walkthroughs are to be provided by each team member for the functionalities and/or use-cases they are listed as owner and
- question-answer to be done with entire team and individual team members by prof.

#### Note:

- Each member of the team must be available at the time of project demonstration. Final grade for the project will only be assigned after the demonstration given by all the team members.

**Default project (if you do not want to pick an own project):**

Use the project description to estimate the complexity expected in your project.

Do this project if you do not want to pick an own project. Feel free to expand the project in any area as much as you want.

“The application should store workout data in a local database using Room. The application should be able to add, edit, and delete data related to at least two kinds of exercises (for example, cycling and free weights) stored in two separate tables. Every exercise entry of the Journal should store and display the date of the exercise, and at least two additional parameters (for example, for cycling: date, time, and distance). All the previously entered data, including the dates, must be editable.”

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**Notes:**

1. All **assignment shall be submitted by the deadline**. Late submissions will be penalized by 10% per day for up to 3 calendar days after which the assignment cannot be submitted anymore. See the [Academic Procedure for Evaluations](#).
2. If you want to use any entitled **accommodation** for the assignment, you **MUST** inform the professor **in advance by at least 3 working days of the due date**.
3. It is mandatory to meet the naming conventions specified for all the files to be submitted.