CTIS 487
Mobile Application Development

PROJECT

2025-2026 Fall

Deadline: 25.12.2025, 23:55
Team Size: Will announce later (Minimum 3, Maximum 4 students)

Presentation: The team (all members) will demonstrate their project on a laptop at instructor office by getting appointment from moodle.
Submission: All project source codes must be uploaded to moodle by one of the team members.
Team work: Each team member will be responsible from a particular part of the project.

- AI tool usage is strictly forbidden; any violation will result in a zero for all team members.
- Cheating is strictly prohibited. Otherwise, all team members get zero.
- In the demonstration, I'll ask questions to all team members about the project. I'll assess your grades based on your answers. **You'll get grades depending on your contribution to the project.**
- **20** points penalty for LATE submission. The submission will be closed on 25.12.2025, 23:55
- If you do not understand one of the requirement of the project ask it to your instructor before the project submission.
- Submission on Moodle is not sufficient. Students who do not present or contribute will receive 0. Grades are based on individual contribution

Form your team and submit a document to course moodle page which contains the proposed project topic, details of your project (such as which operation can be done, requirements of project) and the names of team members until 03.10.2025, 23:55 **(3pts)**.

The proposed project must cover the following requirements **(Total point will be converted to 97)**

- The project must be created such that it will be capable of running on any Android enabled mobile device (i.e., use multiple resolutions for the images).

  https://material.google.com/style/icons.html
  https://developer.android.com/guide/practices/screens_support.html
  http://iconhandbook.co.uk/reference/chart/android/

- Create your own custom **application icon** (5pts)
- **Make sure that the designed UI is professional looking. Quality, effort and time allotted for the project.** It must be different than the lab guides. Professional looking not just the user interface it is about the quality of it and **how much it deserves to be at project level**. **(18pts)**.
- Use material design (https://m2.material.io/components?platform=android) for at least 2 views
- Use at least one type of **gesture (8pts)**.

- Create **a Custom View** (10 pts)
    - At least one custom view must be implemented instead of only relying on standard Android views.
- Use **Data Binding** (10 pts)
    - Apply Android Data Binding to bind UI components directly to data sources, reducing boilerplate code.
- Use **View Binding** (4 pts)
    - Implement View Binding instead of findViewById for safer and cleaner code.
- Use **Language Support** (Localization) (6 pts)
    - The application must support at least two different languages (e.g., English and Turkish).
- Use **RecyclerView** with two layouts **(15 pts).**
- Use **database** to store application related information (e.g. for a game, high scores can be saved in a database). **Room library** must be used to handle database operations on the device **(13 pts)**
- Use **Retrofit** to parse **JSON** (which contains some data related you're your application) **(15pts)**.
    - To store JSON on the server, following or other hosting's can be used
        - https://www.jsonkeeper.com
        - https://jsonbin.io/login
        - https://www.jsonapi.co/json-bin/JSON%20Keeper
        - https://infinityfree.net
        - https://tr.000webhost.com
        - https://aws.amazon.com
- Use service (**Worker**) to handle background operation **(15pts)**.
- Use **sound file (6 pts)**.
- Use **at least one extra package (project folder to store Kotlin/java files) (**3pts).
    - Sub package under root package of project
- Use at least one **external library (5pts)**.
    - Use different external library than Volley, Picaso, Glide, Retrofit, gson libraries.
    - Some external libraries: Validation libraries, animation related libraries or libraries which can be alternative of RecyclerView.
- Provide a **brief testing report** of your application against multiple real mobile devices by using AWS Device Farm. https://aws.amazon.com/device-farm/
    - A different **testing tool** also could be used. AWS requires credit card number, a certain amount is withdrawn but later that amount is returned. Credit card is used to identify you are the right person. Also creating an account on AWS takes time **(5pts)**
- How to upload an app to Google Play Store? Each group member must know the steps of it **(10 pts)**. You may not create the google account because of the payment but this time **all the group members must know** what should be done to upload application to google play store.