MARMARA
UNIVERSITY

Course Diary

Software Requirements Specification

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1. INTRODUCTION

We decided to make this application based on our own needs. Each student like us also has a specific curriculum in a specific semester. We wanted to make the follow-up of our lessons easier and to create Course Diary with the desire to progress within a certain order.

a. PURPOSE

Follow-up of the course, the notes taken in the lessons, photos taken about the course, lessons taken in the audio recordings we want to be included in our program. The main purpose of these features is to ensure the success of a student with the layout that a student can easily provide.

b. SCOPE

We set out in accordance with our own needs while doing the application. We chose to use the Android Software so that the student can easily follow the lessons. This is the main reason why it is designed as a mobile application. the data we will use to save the database Room Database. Our application basically consists of three parts. In the first stage, the student is expected to add the schedule according to the hours. In the second stage, we expect to add to the application. (photo, document, audio recording, continuity etc.) The last part is the section where the data saved to the application is read. The student returns to all the data he/she records and gives access.

c. DEFINITIONS, ACRONYMS & ABBREVIATIONS

Course Diary - Project name

GUI - Graphical User Interface

UI - User Interface

Android - It is a free and Linux based operating system developed by Google and Open Handset Alliance for mobile devices. Even though the system is open source, a small but very important part of its code is kept closed by Google.

Android Studio - Android Studio is the official programming tool and recommended by Google for Android applications. It has high-level and effective features.

Application - The application is software that is developed through application development languages for a specific computer architecture, allowing computers to be used in a variety of jobs.

Room/Room Library/Room Database - Room is a library that simplifies database

operations in Android applications.

d. REFERENCES

- **Android Studio:** https://developer.android.com/studio/index.html
- **Genymotion:** https://www.genymotion.com/
- **Room Database:** https://developer.android.com/topic/libraries/architecture/room
  https://developer.android.com/training/data-storage/room/index.html

2. GENERAL CONSTRAINTS

a. Software Constraints
   - The system that the program runs must have an Android 5.0 (API 21) or later operating system version.
   - Camera, microphone and storage permissions have to be provided to use application's features.

b. Hardware Constraints
   - The program runs on a device running on the Android operating system (eg: smartphone, mobile device, tablet).
   - The device that runs the application must have a camera and microphone to support all features.

3. ASSUMPTIONS & DEPENDENCIES

- It is assumed that the application will not work with a large number of courses and semesters (over a thousand) to facilitate implementation.
- It is assumed that courses which have attendance obligation have "attended", "absent" and "cancelled" options to define attendance status.

4. REQUIREMENTS

a. FUNCTIONAL REQUIREMENTS

Use Case Name	See General Course Information
Trigger	The user interacts with info button.

Precondition	The user is on the course page of application.
Basic Path	This use case uses a default Android button.
Alternative Paths	If the user performs a long touch, information frame can be activated by context menu.
Postcondition	General course informations are shown.
Exception Paths	The attempt may be abandoned at any time.

Use Case Name	Adding Semester
Trigger	The user interacts with add button.
Precondition	The user is on the semesters page of application.
Basic Path	This use case uses a default Android button with semester starting and end dates.
Alternative Paths	None.
Postcondition	Saves semester to Room DB and opens the main page of the semester after it has been added.
Exception Paths	When semester end date is an earlier date than starting date, it is not accepted and a warning message is shown.

Use Case Name	Adding Course

Trigger	The user interacts with add button.
Precondition	The user is on a specific semester page.
Basic Path	This use case uses a default Android button with course name, minimum attendance and weekly schedule inputs.
Alternative Paths	None.
Postcondition	Saves course to Room DB and opens the main page of this course after it has been added.
Exception Paths	If course name and weekly schedule is not specified, operation is not completed and a warning message is shown. Also, if minimum attendance rate is not specified it is determined as 70% but it can be changed later.

Use Case Name	Adding Assignment
Trigger	The user interacts with add button.
Precondition	The user is in a specific course page.
Basic Path	This use case uses a default Android button with assignment deadline and description.
Alternative Paths	This operation can be performed in main screen as well.
Postcondition	Saves assignment to Room DB and return previous state.
Exception Paths	The attempt may be cancelled and if deadline is not specified operation is terminated.

Use Case Name	Manage Course Hour
Trigger	The user clicks a course hour in a specific course page.
Precondition	The user is on a specific course page.
Basic Path	This use case is activated when user clicks a course hour.
Alternative Paths	A course hour can be reached on weekly course feed.
Postcondition	Course hour page is opened.
Exception Paths	None.

Use Case Name	Adding Note
Trigger	The user clicks add note button.
Precondition	The user is on the related course page.
Basic Path	This use case uses a default Android button on the course hour page.
Alternative Paths	The course can be added via the button on the main page of the course (provided that media type and course hours are selected).
Postcondition	Note is saved to Room DB.
Exception Paths	The attempt may be abandoned at any time.

Use Case Name	Adding Photo
Trigger	The user clicks add photo button.
Precondition	The user is on the related course page.
Basic Path	This use case uses a Android button which activates default camera application on the course hour page.
Alternative Paths	The course can be added via the button on the main page of the course (provided that media type and course hours are selected).
Postcondition	It returns captured photo to the course hour page and it is saved to the local storage.
Exception Paths	The attempt may be abandoned at any time.

Use Case Name	Adding Audio Record
Trigger	The user interacts with audio recording media.
Precondition	The user is on the related course page.
Basic Path	This use case uses a audio recording media on the course hour page.
Alternative Paths	The course can be added via the button on the main page of the course (provided that media type and course hours are selected).
Postcondition	Audio record is saved to local storage and returns to the home page of the related course.

Exception Paths	The attempt may be abandoned at any time.

Use Case Name	Set Attendance Status
Trigger	The user clicks the attended/absent/cancelled buttons according to whether or not attend the course.
Precondition	The user is on the relevant time period of the course.
Basic Path	This use case uses default radio buttons which define attendance status.
Alternative Paths	Attendance status can be edited with the notification sent by the program during the course time.
Postcondition	It returns to the home page of the related course.
Exception Paths	The attempt may be abandoned at any time.

b. NON-FUNCTIONAL REQUIREMENTS

- Since it will be a local application, it won't require an internet connection. Application's data will be stored on local storage of device and in a Room Database.
- Application data must be consistent and when a content is updated it must be updated immediately everywhere used.
- The application will be executed by using custom, local and small data. Therefore, response time must not exceed 2 second for any operation.
- UI must be user friendly. Animations should be used if it will facilitate a process.
- All addition operations must be handled in current activity and only the inputs required by the developer for the current operation should be requested from the user.

5. APPENDIX

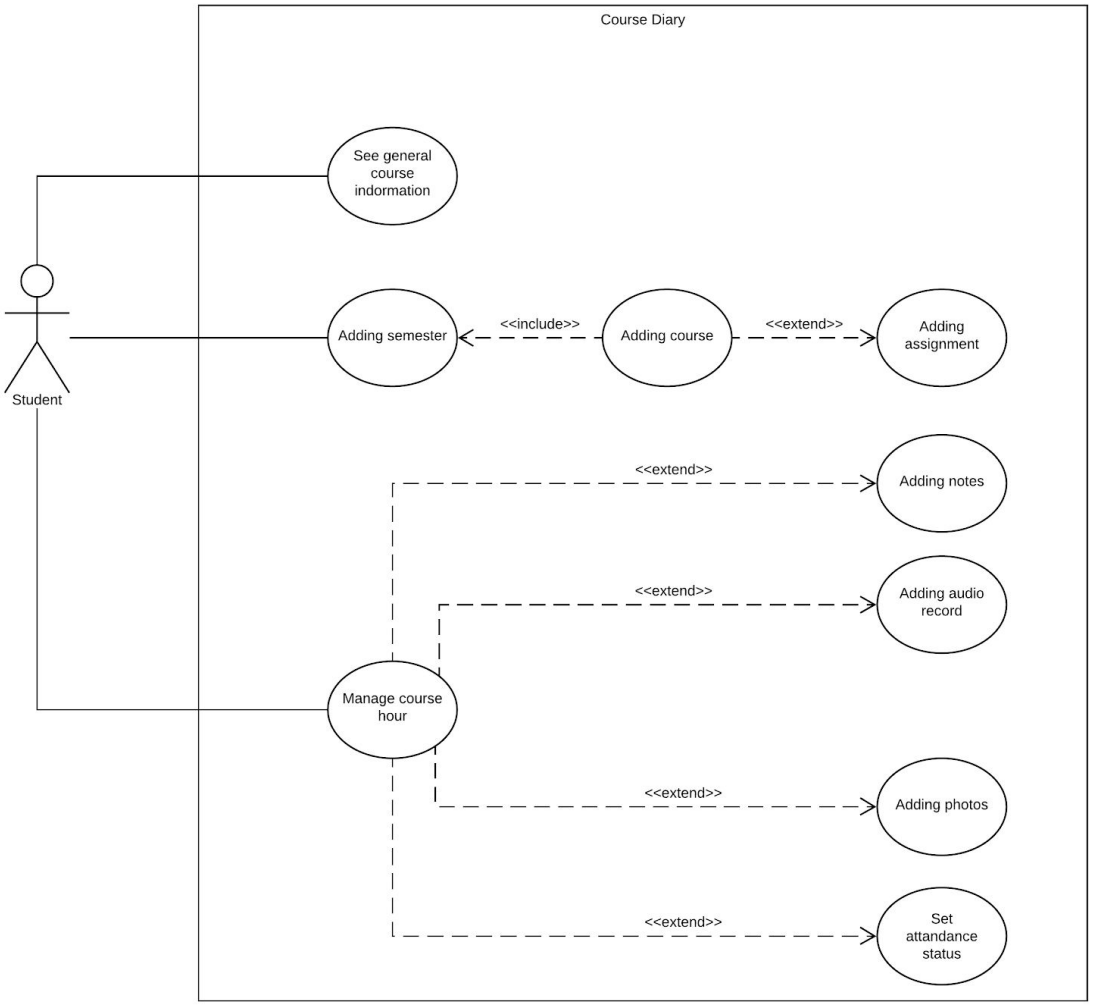
Room Database Clarification

The Room persistence library provides an abstraction layer over SQLite to allow for more robust database access while harnessing the full power of SQLite.

In Room, primitive data types (long, int, String, float, double...) can be directly saved to DB. On the other hand, any other data type has to be converted to one of the primitive data types by using “TypeConverter” to keep it in Room DB. It is up to developer(s) that how a non-primitive data type will be converted to a primitive data type.

For instance, a String array couldn’t be directly saved to Room DB. Joining all strings of array by a separator symbol and converting them to one long string makes possible to save an array to Room DB.

6. USE CASE DIAGRAMS



CONTRIBUTIONS

We meet once a week, we convey our ideas on the project. Everyone is thinking individually, each meeting is decided to be appropriate. Speaking about the project at least twice a week through WhatsApp.

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