



# MOBDEVE Machine Project

AY 24-25 T3

Students are assigned a term long project where they are to design, propose, and develop a mobile application that can run on an Android device. The following specifications detail what is expected of the students.

## General Notes

- The Android application must be built using Java or Kotlin.
- The machine project is meant to be done in a group.
  - Typically, a group may consist of 2 to 3 members; however, your instructor reserves the right to modify the group size according to their own prerogative.
  - No consideration will be given to those who would want to form groups bigger than the max size agreed upon.
- If there are any questions or need for clarification of certain points, approach your teacher immediately.
- All submissions will be made via Canvas.

## Application Requirements

The application must contain at least two (2) of the following services\*:

- Local database (SQLite)
- Geolocation/Maps
- Touch gestures (non-native to the Views used)
- Camera Usage (using existing/built-in camera apps does not count)
- Canvas (for games) or Graphics-Related Applications
- Motion sensors (accelerometer, gyroscope, etc.)
- Service (background running) with or without Broadcast receiver
- Usage of 3rd-party APIs\*\*

\* These services/APIs must have a clear purpose in the app, and not just added for the sake of fulfilling the Requirements.

\*\* Not all APIs will count. Please make sure to consult with your instructor.

If the app doesn't have two of any of those listed above, they need to at least be connected to a remote server (e.g Firebase) for the developed app. The group is expected to develop the back-end system in the remote server/Firebase.

## Phase 1: Project Proposal [due: 31 May 2025]

The proposal must contain an overview of the application, a list of services / APIs planned to be used, and a list of functionalities. While the requirements here are rather straightforward, please note the following:

- The description must properly capture the idea of the application.
- Each service / API must be accompanied by a short statement describing why the service / API was chosen for the app. Inclusion of a service / API must be aligned with the overall theme / goals of the application.
- Describing the functionalities can be done in many ways. One way would be to describe what a user can do in each screen / Activity. Another way might be to describe all individual functions and state which screen they're projected to be associated with. The description doesn't need to be too specific in

terms of how functions would be implemented, but it is encouraged to be as specific as possible. All functionalities should support the overall description of the application.

While use of services / APIs is a quantified requirement, stating the functionalities will scope the project and will also be evaluated in terms of whether to accept or modify the proposal.

The project proposal is not included in the grading scheme; however, it must be submitted to proceed with the other phases to the major course output. Late submission of the proposal will entail a 2% deduction per day late to the final assessed grade.

## **Phase 2: Interactive Prototype (UI only) [due: 21 Jun 2025]**

The 2<sup>nd</sup> phase of the MCO involves creating an interactive prototype where all screens and views are rendered and the user can move throughout the application. The prototype needs to be in the form of an Android application; however, the back-end logic -- outside of moving from Activity to Activity -- is not expected. Please note that dummy data can be used for views that require data to properly work (e.g. RecyclerView is in place but dummy data is shown). Additionally, if showing of screens without logic cannot be done, the layout files will still be expected to be completed and would be found in the project folder.

The interactive prototype is worth 5% of the total grade. For more information on how the demo will be graded, please see the rubric below.

## **Phase 3 : Final Application + Demo [due: 28 Jul 2025]**

The group must submit the following via Canvas:

- Zipped file of the Android project
  - While your instructor will have access to the repository, this requirement is so that there is a copy of the submission that will persist if ever anything happens to the repository. Please make sure that the copy submitted is the latest version aligned with the latest commit prior to the deadline.
- Final Demo
  - The group is asked to conduct a demonstration of their application highlighting the application fulfilling the project proposal. Please refer to the rubric below for what will be expected of your application. The demo may either be conducted live or asynchronous (through a video). Discretion is left to the instructor.



Please make sure that your services / API can run on machines / phones outside of your test environment. If you're using a remote server, please make sure to allow access to appropriate requests until the release of grades so your instructors can properly evaluate your application.

The final application is worth 35% of the total grade. For the manner of grading of the final submission, please refer to the succeeding pages.

## **Project Management**

As previously mentioned, version control should be used to track the development of the Android application. One's Git repository must show continuous progress and not a single push at the end of the term. The project itself must also adhere to proper coding standards, as well as contain in-line comments that describe processes that may not be immediately clear. Project management is part of the rubric for the final application – not the rubric for the beta application.

## APPENDIX A – Template for Project Proposal

 	MOBDEVE Major Course Output
	BSCS-ST <sup>1</sup> , BSIT <sup>2</sup> , BS<specialization> <sup>&lt;superscript&gt;</sup>
	iVolunteer Mobile App
	Rizal, Jose <sup>1</sup>   Bonifacio, Andres <sup>2</sup>   Aguinaldo, Emilio <sup>1</sup>

### Description

The application is a volunteer registration app for iVolunteer. iVolunteer is in partnership with up to 50 NGOs and allows its users to register for a volunteer program on their app. The user is allowed to log-in, see available volunteer programs, and filter through the volunteer programs by time, venue, and advocacy. When a user joins a program, an event will be added to the user's default calendar app and will notify the user 2-3 days before the event. On the volunteer site, the user has the option to "check-in" for the program. A feedback will be asked from the user 2-3 days after the event, asking the user to share his photos and experience on Facebook.

### Services / APIs

Web Server (Firebase)

- To store / verify user credentials and available programs
- To handle scheduling of event

notification Facebook API

- Write access to a user's FB account to share

experiences Geolocation

- Used to verify if the current location matches the location in program

### Functions

Function	Description
Register	The user must first register an account before accessing the other features of the app. Users are required to give their full name, birthday, email, and password.
Log-in	The user must log-in before joining/viewing a program. This requires the user to enter his/her registered email and a password.
View Program List	The user can view the list of available of volunteer programs, each program containing basic details of the event. The list will be provided via a remote web server.
View Program Details	Once a user selects a program, the app will provide the complete details of the event.
Filter Programs	The user can filter through the programs based on date/time, advocacy (e.g. education, housing), and location.
Register/Join Program	The user can join a program (log-in is required if the user hasn't log-in yet). This will update the remote database.
Program Notification	The app will notify the user three days, and a day before a registered event.
Check-in	The user can "check-in" when he is on-location. The app will verify the user's participation by checking if the location and time matches.

Feedback Notification	The app will notify the user to share his experience days after a program.
Feedback	The app will allow the user to share his photos and experience on Facebook.

## APPENDIX B – Interactive Prototype Rubric

Total of [100 pts]

### User Experience (50 points)

Can I easily use the app without any aid? Is the design meant to be friendly to the audience it's intended for? Can I get things done in a few types and clicks? Is navigation easy to follow?

Aspect	Exemplary	Proficient	Satisfactory	Developing	Beginning
<b>Content Organization</b>	The group made an exceptional consideration and execution to organize the content of the app for the people whom it is intended.	The group organized the content of the app for the people whom it is intended.	The group put information in the app but did not organize it for the target audience.	The group only provided the minimum amount of information and organization for the target audience.	The group did not organize the information for the target audience.
<b>Navigation</b>	A user easily navigates without help.	All navigation items are clearly labeled and consistently placed allowing the user to easily move from a view to related views and take the reader where s/he expects to go. A user does not get confused.	Many navigation items are labeled, allowing the reader to move from a view to related views. A user rarely gets confused.	Some navigation items are labeled, allowing the reader to move from a view to related views. A user sometimes gets confused.	Navigation items do not clearly describe where the reader will end up. A user typically feels confused.
<b>View Titles</b>	All views have clear titles.	Many views have clear titles. (>75%)	Some views have clear titles. (>50%)	Few views have clear titles (>25%)	View titles are missing.

### Visual Design (50 points)

Is the app easy on the eyes? Does it match the aesthetic of its content? Are the icons clear and appropriate? Are the words used appropriate for its content?

Aspect	Exemplary	Proficient	Satisfactory	Developing	Beginning
<b>Message Strength</b>	Intended message is clear and concise		Intended message is present but not clear.	Intended message is obscure.	Intended message is missing.

<b>Message matches project brief</b>	Intended message fulfills all goals and objectives as outlined in project contract.	Intended message fulfills most goals and objectives as outlined in project contract.	Intended message fulfills some goals and objectives as outlined in project contract.	Intended message fulfills few goals and objectives as outlined in project contract.	Intended message is unrelated to goals and objectives as outlined in project contract.
<b>Graphics</b>	Graphics are related to the theme/purpose of the app, are of excellent quality and enhance reader interest or understanding.	Graphics are related to the theme/purpose of the site, are of good quality and enhance reader interest or understanding.	Graphics are related to the theme/purpose of the site and are of good quality.	Graphics are related to the theme/purpose of the site but are of poor quality.	Graphics seem randomly chosen, are of low quality, or distract the reader

## APPENDIX C – Final App Rubric

Total of [100 pts]

### Project Goals (50 points)

Can I use the app for purpose X? Are the tasks that I'll perform in working condition? Are the tools I need to achieve the app goal complete?

Aspect	Exemplary	Proficient	Satisfactory	Developing	Beginning
<b>Message Matches Project Contract</b>	The group developed all the features and fulfilled objectives outlined in the project brief. The group also added extra features to support the objectives.	The group developed all the features and fulfilled all objectives outlined in the project brief.	The group developed most of the features and fulfilled most objectives outlined in the project brief.	The group developed the core features and only fulfilled a few of the objectives outlines in the project brief.	The group did not develop the features or fulfilled any objective in the project brief.
<b>Content Organization</b>	The group organized the information according to the project objectives and exceeded in its effort to display content.	The group organized the information according to the project objectives.	The group made a minimum effort to organize the information according to the project objectives.	The group displayed the information, but organization is lacking.	The group did not display any information at all.
<b>Fulfills Project Goal</b>	The group completely fulfilled the project goal.	The group mostly fulfilled the project goal. (>75%)	The group somewhat fulfilled the project goal. (>50%)	The group only fulfilled a part of the project goal. (>25%)	The group did not try to complete the goal at all.

### User Experience (20 points)

Can I easily use the app without any aid? Is the design meant to be friendly to the audience it's intended for? Can I get things done in a few types and clicks? Is navigation easy to follow?

Aspect	Exemplary	Proficient	Satisfactory	Developing	Beginning
<b>Content Organization</b>	The group made an exceptional consideration and execution to organize the content of the app for the people whom it is intended.	The group organized the content of the app for the people whom it is intended.	The group put information in the app but did not organize it for the target audience.	The group only provided the minimum amount of information and organization for the target audience.	The group did not organize the information for the target audience.
<b>Navigation</b>	A user easily navigates without help.	All navigation items are clearly labeled and	Many navigation items are labeled,	Some navigation items are labeled, allowing	Navigation items do

		consistently placed allowing the user to easily move from a view to related views and take the reader where s/he expects to go. A user does not get confused.	allowing the reader to move from a view to related views. A user rarely gets confused.	the reader to move from a view to related views. A user sometimes gets confused.	not clearly describe where the reader will end up. A user typically feels confused.
<b>View Titles</b>	All views have clear titles.	Many views have clear titles. (>75%)	Some views have clear titles. (>50%)	Few views have clear titles (>25%)	View titles are missing.

### Visual Design (20 points)

Is the app easy on the eyes? Does it match the aesthetic of its content? Are the icons clear and appropriate? Are the words used appropriate for its content?

Aspect	Exemplary	Proficient	Satisfactory	Developing	Beginning
<b>Message Strength</b>	Intended message is clear and concise		Intended message is present but not clear.	Intended message is obscure.	Intended message is missing.
<b>Message matches project brief</b>	Intended message fulfills all goals and objectives as outlined in project contract.	Intended message fulfills most goals and objectives as outlined in project contract.	Intended message fulfills some goals and objectives as outlined in project contract.	Intended message fulfills few goals and objectives as outlined in project contract.	Intended message is unrelated to goals and objectives as outlined in project contract.
<b>Graphics</b>	Graphics are related to the theme/purpose of the app, are of excellent quality and enhance reader interest or understanding.	Graphics are related to the theme/purpose of the site, are of good quality and enhance reader interest or understanding.	Graphics are related to the theme/purpose of the site and are of good quality.	Graphics are related to the theme/purpose of the site but are of poor quality.	Graphics seem randomly chosen, are of low quality, or distract the reader



**Project Management (10 points)**

Can I easily use the app without any aid? Is the design meant to be friendly to the audience it's intended for? Can I get things done in a few types and clicks? Is navigation easy to follow?

Aspect	Exemplary	Proficient	Satisfactory	Developing	Beginning
<b>Proper Usage of Version Control</b>	The group consistently used version control to track progress and collaboration is evident.	The group used version control, but it wasn't used consistently.	The group used version control, but it was used in bursts or progress to the project was mainly led by only one member of the group.	The group had minimal use of version control, or its use was mostly just prior to submission. It also does not properly show the contributions of each member.	No version control was used by the group or no evidence was provided.
<b>Coding Standards</b>	The project adheres to coding standards. The code is well organized and very easy to follow. Comments are present and aid to understanding. Naming convention of files, methods, and variables is consistent and well thought through.	There may be some minor failures to adhere to standards. Indentation or naming convention may be inconsistent. Naming convention of variables, methods, or files may not immediately give insight into the purpose of the entity.	There are some moderate violations of the standards. The code may be difficult to read in places, or some of the comments may be unclear. However, the code is still generally readable and there is enough commenting, good enough variable names, etc. that someone could still figure out what's going on without too much difficulty. Functions and the basic algorithmic structure are still generally appropriate.	There are major problems with the program's design or coding style that would interfere with its comprehension, reuse, or maintenance. A good number of comments are unclear, variable descriptions or names do not reveal the purpose of use. Code may be poorly formatted. However, there is still some value apparent in the code, perhaps in its overall decomposition into different methods or algorithmic blocks.	Comments are generally missing. The code is difficult to read and it's design is difficult to follow. Methods may include mixtures of different functionalities that don't belong together. However, there is at least one redeeming quality that could allow someone familiar with what it is supposed to do to understand some aspect of it.