Group Project
Project Specifications

Overview

You will be working in a group to develop a mobile application pertaining to solving a real-world problem. You will deliver the project in three stages (see Section Deliverables)

Group Requirements

- Each group must consist of four members.
- You have the freedom to choose your own group members.
- Choosing members from different sections is allowed if under the same lecturer.

Project Requirements

You have the freedom to choose any project. However, your project must fulfill the following requirements:

a. Working on a real-world problem. You will need to gather requirements from actual users in the actual environment / workplace / domain.
b. The application you will be developing in this project must be a client-server application. You will develop a front-end application (using Flutter framework) and a backend (using any backend technology such as Firebase, Node JS, etc.).
c. The application will serve at least two types of users. For example, for an online shopping application, the users can be the buyers and sellers.
d. Adopting architectural patterns to implement the project: MVVM pattern for the frontend and MVC for the backend.
e. Following an agile methodology for the project management.
f. Using Git and GitHub for the version control system.

Deliverables

The project contributes **70%** in total to the final grade of this course. The breakdown weightage is as follows:

Items	Weightage	Timeline
Group Formation	-	Week 1
1. Project Proposal and Requirements • Slides • Presentation	5 %	Week 2-5
2. Product Backlog • Story Map • Backlog • Presentation	5 %	Week 6-8
3. Project Sprints • 3 Sprints • 2 weeks per Sprint • 2 presentation per Sprint: o Presentation 1 (at the beginning)-Sprint planning, task assignments, design (UI and database) o Presentation 2: Results	30%	Week 9 – 14
4. Peer and Self Assessment (PSA) • 1 PSA every deliverable • Individual submissions	5%	Week 2 - 14
5. Project Showcase: • Product Video • Presentation	10%	Week 15
Total	**70%**	

Frequently Asked Questions

Questions related to group requirements:

1. **Can we have 5 members in our group?**

   No. This requirement is not negotiable.

2. **What if the total number of students is imbalanced?**

   I will split few groups making the groups to have 2 or 3 members.

3. **What if I cannot form my group?**

   a. some points will be deducted from your teamworking marks, and

   b. will team you up with other students who also have not found yet any group, or

   c. if (b) is not applicable, then I will put you in a group whose less members, or

   Notes: To avoid from being picked for 4(c), make sure you have enough four members in your group.

Questions related to project requirements:

4. **Is it compulsory to do projects in a real environment / workplace?**

   Yes. You will need to gather requirements from the real workplace.

5. **How large the scope of the project should be?**

   You do not need to do a full-blown project. You only need to pick one activity / operation from an actual environment / workplace / domain. Take an online teaching and learning environment as an example. There several activities involved here including managing class schedules and meetings, managing student attendances, conducting active learning activities, managing assessments, managing group projects, etc. Each of these activities can be chosen as a project.

6. **Is it compulsory to do projects in the education domain?**

   No. You have the freedom to choose any project from any domain provided it based on a real-world problem.

7. **Do we need to target multi-platform for the application such as mobile, web and desktop?**

   You will need to target only for the mobile application, either for the Android or iOS phone.

8. **Can we use framework or technology other than Flutter, such as React Native or NativeScript, etc?**

No. You must use Flutter framework for the front-end.

9. **Can we use the backend other than Firebase?**

   Yes.

10. **Can we use a NoSQL database such as MongoDB?**

    Yes.

Questions related to Git and GitHub:

11. **Do we need to use GitHub?**

    Yes. You will be doing the project continuously and push your work to GitHub starting from Sprint 1.

12. **Can we use other alternatives to GitHub such as Bitbucket or GitLab?**

    You should use only GitHub. This is to help us monitor the groups in a more consistent manner because every group has the same configuration. By the way, GitHub provides a lot of features that are more than enough for this project. For example, now, GitHub allows **unlimited private repositories** for the **free accounts**.

13. **Do Git commits contribute to the assessments?**

    Yes. This applies to all sprints. The assessment for the commits includes:
    a. continuous commits - you do not want to commit at the last minutes,
    b. how many commits you have done,
    c. the works you have done – make sure you describe your commits clearly and concisely and follow the best practices, such as from this article: How to write Git Commit

14. **Will the mark be individual?**

    Some parts of the project will be assessed individually including.
    a. Teamworking
    b. Contribution to the project outcome
    c. Git commits.
    d. Presentations

15. **How do we manage the project on GitHub?**

    Use the feature **Organization** and **Teams** on GitHub.
    - On the GitHub website, create an organization.
    - Then inside the organization, create a new team.
    - Add the other group members and your lecturer as members to the team.
    - You will create your project repositories and projects in that team and specify them as **private**.

16. **When should we start using GitHub?**

You will need to create your Organization and Team on GitHub now.

- Create a Project (with a Kanban format) for each deliverable to manage the activities for the deliverable. You will need this starting from Deliverable 1.
- Create Repository to manage the version of your code. You will need this starting from Deliverable 2.

17. **I am new to Git and GitHub. Where should I start to learn about them?**

There are many resources available on the internet, including on YouTube. To name a few (proceed to the following links):

- Git Real
- Introduction to Git - Core concepts
- Understanding GitHub Flow
- Start a new git repository
- Pro Git eBook
- Git Cheat Sheet

18. **How do we really use GitHub to work in a collaborative manner?**

There are several ways or workflows for conducting collaborative works on GitHub, starting from basic approaches such as using GitHub only for hosting centralized repositories, to advanced methods such as automating each phase in the development process using GitHub actions.

What we recommend for this project is that, use a basic approach. You will use GitHub only for the following activities:

a. hosting your repository
b. code review using the Pull Request feature
c. discussion - Note that, do not post any discussions related to your project using other means (such as email, WhatsApp, telegram, etc.). You will need to do it on GitHub.

Again, there are many resources available out there about how to do collaboration on GitHub. For example: Collaborating on GitHub

19. **How about managing the project as a whole? Can we also do this on GitHub?**

You can use the feature **GitHub Projects** for managing your group project. You can refer to the following resources:

- Professional Guides: Managing Projects (on GitHub)
- Introduction to GitHub Project Boards
- GitHub Project Management Tutorial

Questions related to Project Implementation:

20. **Can we use third party dart or flutter packages?**

    You are allowed to use any third party packages except packages related to application architectures, for example, the Stacked package. It does not mean those packages are bad. The reason for this is to enable you to dive deeper about software architecture in practice.

21. **What if we refer to sample projects from the internet or other resources?**

    You may refer to any resources available out there including from the internet.

    However, you DO NOT COPY the project. This will be considered cheating. If your submission is suspected in this category, it will be automatically rejected and thus you will be getting a ZERO mark.

    An example situation for this, you clone other's projects from GitHub and then you modify the code to suit with your own project. This is obviously cheating.

    Keep in mind, you may want to use other's code only for reference.

22. **Do we need to create separate repositories for the frontend and the backend?**

    You don't have to create two project repositories. You can use only one for both the frontend / flutter and the backend projects.

    What you need to do is add to your Flutter project folder with another folder for the backend project.

    This configuration gives some advantages such as you can manage dependency between the flutter code and the backend code easier. But of course, this configuration also has its own drawbacks and not the ideal configuration. However, it should be good enough for the project in this course.

23. **In our project, we have a feature that allows the user to do payment. Do we need to implement the payment such as connecting to the bank?**

    You do not have to implement the actual process for the payment. Instead, you can create a mock service for connecting to the bank. However, the UI/UX for the process must be included in the project.

24. **Our project is about Food Delivery. Do we need to support both the customer and seller? Or can we do the project only for the customer side?**

    Your project must support both types of users.

25. **Do we need to include Admin users in our project?**

- All projects must implement at least two types of users.
- However, do not consider Admin is one of them because you have other types of user that are more significant to your project.
- For example, for shopping-like apps, you are better to focus on the customer / buyer and the seller.
- So, how about the admin? Obviously all systems must also support features for administration of the system such as managing user accounts, etc. However, in this project you do not have to support these features from your application. You support the admin features only by using manual operation. For example, you do it directly from the database side.

26. **Our project is about calendar and event scheduling. It has an event host / creator and collaborators. Do the schedule host and schedule collaborator consider as two user groups of our proposed application?**

    The requirement about having two types of users is meant for implementing User authorization and user permissions. User authorization is a feature that allows certain users to have access to certain screens, operations, features, etc.

    In your case, the host/creator/owner and collaborator can be considered as different types of users. They may have different permissions on the same event.