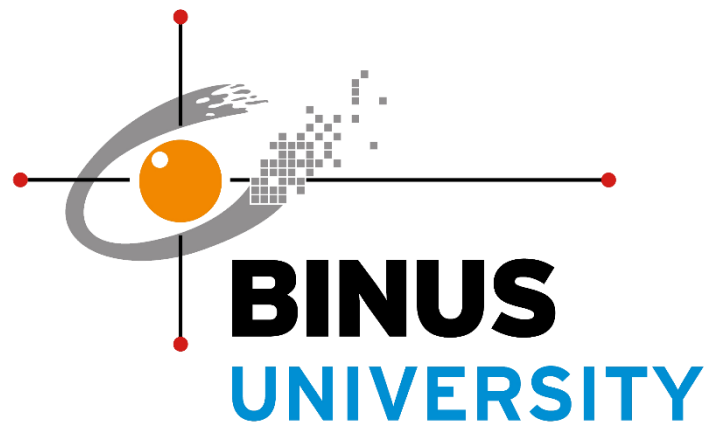# Kesapian Agile Project Management Report

By 4MataDua

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A project report submitted in fulfillment of the requirements for Agile Software Development Final Assignment

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Project Overview:

Project Goals & Objectives

The Goals for this project are: Creating a space for Introverts to make friends with the people around them, preventing them from developing mental issues because of loneliness, and addressing the difficulty of making friends with them. And creating a web application that helps people with social anxiety, or who are generally introverted, form meaningful friendships and social connections in a personalized environment.

Target Audience/Users

The target for our project is mostly college students who didn't have much time to adapt to their surroundings and are looking for friends, students with social anxiety or trouble initiating a conversation, and also other people, such as High School students, office workers who's having a hard time adapting to their environment and also looking for friends could be using our project.

Project Scope

Describe the final scope of the delivered product, including any changes from the initial plan.

1. Personalized user profiles allow users to set specific preferences, such as hobbies, interests, and communication preferences, while also providing options for anonymous users.
2. Near Me, this feature allows the user to know the approximate distance between them and the other users, so that they can set up a plan or event to do.
3. Conversations Starters, this feature allows the users who have a problem with initiating conversation, such as guided prompts, or maybe a "question of the day," to make the user experience less awkward.
4. Chat, this feature allows the user to communicate with other users, with an asynchronous feature, to allow a more relaxed experience.

Team Composition & Roles

Bryan Valentino Wijaya - Developer
Cladio Bernard Octaviano - Developer
Kevin Jeremia - Developer
Marco Bennedict Makin - Developer

Technology Stack

Document the final technology stack used for the project.

- Front End
  - Framework   = React.js.
  - Language   = Javascript or Typescript, CSS
- Back End
  - Framework   = Express.js, Socket.io, Geolib, Sequelize, dotenv, cors
  - Language   = Node.js
- Database
  - Framework   = MySql
- Messaging
  - Framework   = socket.io (Node.js)

Agile Methodology

Agile methodology itself is a type of software development guideline that uses iterations and incrementation as its main method of developing Software. It is specifically designed for a project that has frequent changes in the requirements, and it is also designed to improve communications between the stakeholders (Lei et al., 2017)

And one of the method of applying Agile is Kanban, which has an approach of "a set of concepts, principles, practices, techniques, and tools for managing the product development process with an emphasis on the continual delivery of value to customers, while promoting ongoing learning and continuous improvements"(Al-Baik & Miller, 2015).

The agile methodology that is used for this project is Kanban, We used it as a visual workflow board. So first, the board is separated into 3 columns, "To Do", "In Progress", "Done"; each column represents the working phase that tasks have. In the "To Do" column, we filled it with our PBI or Product Backlog Item, which we get from implementing the User Story and implementing the 3C, and after doing a Prioritization using MOSCOW, we put it in the To Do column. And then we will be working on the task which has the highest priority with the lowest Story points, and after we're done working on the task, we will put the task in the Done column.

We used Kanban instead of other Agile Development Methods because, with the visualisation it has on the workflow, it helps us to decide the prioritisation of the tasks and the management of the flow (Ahmad et al., 2013)

Product Vision Board

Include your project's vision board. The product vision board should contain Vision, Target Group, Needs, Product, and Business Goals.

Vision: Help the Introverted and students with social anxiety overcome their limitations, and create a meaningful connection, by creating a safe and comfortable space to communicate with their peers.			
Target Group	Needs	Product	Business Goals
- Introverted college students - Students with social anxiety - Exchange students and international students - General people who are looking for a friend	- Struggles to start a conversation - Feels isolated from their peers - Wanting to meet a friend who shares an interest with them	A mobile web application with a relaxing, low-stress environment that creates a meaningful friendship and connection. With a guided prompt for conversation starters, personalized user control, and distance filtering.	- Reach 5k users by the first year the project is released - Collaborating with campuses - Improve students engagement

Project Execution and Outcomes

Initial Product Backlog Items

Cards = As an introverted student, I want to connect more with my peers, making friends with those who share the same interests as me, especially those on campus or anyone near me, so that I can create a wonderful memory and meaningful connection

Conversation =

- User Preference:
    - Size = M
    - Priority = Must Have
    - How will the "Interest" be defined? Does it have to be a hobby, or something that you guys just find interesting as it is?
    - Does the user have to put their interest or fill in their interest to start chatting?

- User Location:
  - Size = L
  - Priority = Must Have
  - What is the limit of this "near me" location?
  - When is this location going to be updated?

- Chat feature:
  - Size = XL
  - Priority = Must Have
  - How will the user who wants to connect with the other, but is afraid of initiating the conversation?

Confirmation

User Preference =

- Given the user is already logged in, when a user tries to set their interest, then the system will show a couple of bubble texts representing what their interest are, whether it be their hobby, or just a thing they like
- Given the user hasn't registered, when the user tries to register their account, the system will ask the user to choose their preference, with a minimum of 1 preference chosen.

User location =

- Given the user is already logged in, when the user tries to search for a friend whose location is greater than 5km, the system won't detect that user as a friend who's near the user
- Given that the user is already logged out, when the user logs in again, the system will update their location to the current location of that user.

Chat feature

- Given that the user has already added another user to their friend list, the user is confused as to how to start the conversation. Then the system will be showing some general or famous way to start the conversation as a chat bubble above the chat box.

Kanban Summary

The estimated time for each iteration is 7 days. We start our project on 1st May.

Table 1: Iteration Blockers and Artifacts Summary

Iteration	Completed Works	Blockers	Artifacts
First Iteration	Designing the interface mockup of our Projects	Because this is a holiday event, most of our teammates are enjoying the holiday.	Figma
Second Iteration	Front End Integrations	Still managing time, from doing other projects.	The user interface was pushed to the repository
Third Iteration	Back End Integration	Troubles in designing the database will be addressed	The database was pushed to the repository
Fourth Iteration	User Customization Feature	Troubles when showing and adding the selected preference to the database.	The feature was pushed to the repository
Fifth Iteration	Near Me Feature	Troubles in figuring out how socket.io works, to display the approximate location of the users	This feature was pushed to the repository.

Table 2: Our **First Look** Kanban Board

To Do	Work in Progress	Done
● Register Page (*frontend*) ● Chat Page (*frontend*) ● Add Friend Page (*frontend*) ● Profile Page (*frontend*) ● Login Page (*frontend*) ● Choose Pref (*frontend*) ● Database Integration ● Login and Register (*backend*) ● Preference (*backend*)	-	-

• User Customization (*feature*) • Chat Page, Find User (*backend*) • Find Friends Nearby (*feature*) • Chatting (*feature*) • More Page (*frontend*) • Group Page (*feature*) • User Suggestion (*feature*)		

Table 3: After The **First Iteration**

To Do	Work in Progress	Done
• Database Integration • Login and Register (*backend*) • Preference (*backend*) • User Customization (*feature*) • Chat Page, Find User (*backend*) • Find Friends Nearby (*feature*) • Chatting (*feature*) • More Page (*frontend*) • Group Page (*feature*) • User Suggestion (*feature*)	• **Login Page (*frontend*)** • **Choose Pref (*frontend*)**	• **Register Page (*frontend*)** • **Chat Page (*frontend*)** • **Add Friend Page (*frontend*)** • **Profile Page (*frontend*)**

Table 4: After The **Second Iteration**

To Do	Work in Progress	Done
• Login and Register (*backend*) • Preference (*backend*) • User Customization (*feature*) • Chat Page, Find User (*backend*) • Find Friends Nearby (*feature*) • Chatting (*feature*) • More Page (*frontend*) • Group Page (*feature*) • User Suggestion (*feature*)	• **Database Integration**	• Register Page (*frontend*) • Chat Page (*frontend*) • Add Friend Page (*frontend*) • Profile Page (*frontend*) • **Login Page (*frontend*)** • **Choose Pref (*frontend*)**

Table 5: After The **Third Iteration**

To Do	Work in Progress	Done
• User Customization (*feature*) • Chat Page, Find User (*backend*) • Find Friends Nearby (*feature*) • Chatting (*feature*) • More Page (*frontend*) • Group Page (*feature*) • User Suggestion (*feature*)	• **Login and Register (*backend*)** • **Preference (*backend*)**	• Register Page (*frontend*) • Chat Page (*frontend*) • Add Friend Page (*frontend*) • Profile Page (*frontend*) • Login Page (*frontend*) • Choose Pref (*frontend*) • **Database Integration**

Table 6: After The **Fourth Iteration**

To Do	Work in Progress	Done
● Find Friends Nearby (*feature*) ● Chatting (*feature*) ● More Page (*frontend*) ● Group Page (*feature*) ● User Suggestion (*feature*)	● **User Customization (feature)** ● **Chat Page, Find User (backend)**	● Register Page (*frontend*) ● Chat Page (*frontend*) ● Add Friend Page (*frontend*) ● Profile Page (*frontend*) ● Login Page (*frontend*) ● Choose Pref (*frontend*) ● Database Integration ● **Login and Register (*backend*)** ● **Preference (backend)**

Table 7: After The **Fifth Iteration**

To Do	Work in Progress	Done
-	-	● Register Page (*frontend*) ● Chat Page (*frontend*) ● Add Friend Page (*frontend*) ● Profile Page (*frontend*) ● Login Page (*frontend*) ● Choose Pref (*frontend*) ● Database Integration ● Profile Page (*frontend*) ● Login and Register (*backend*) ● **User Customization (feature)** ● **Chat Page, Find User (backend)** ● **Find Friends Nearby (feature)** ● **Chatting (feature)** ● **More Page (frontend)** ● **Group Page (feature)** ● **User Suggestion (feature)**

Final Product Description

1. User Log In and Register

   Description = Allows the user to create an account and log in to that account, whilst choosing their preference when they have just created their account or registered it.

   Size = Medium

   Priority = Must Have

   DoR =

   - The user database is already built
   - Database integration is successful

- UI is already designed

DoD =

- The user can create a profile, and the created profile will be saved to the database.
- The user can log in to the created account.

2. Chat Feature

Description: This feature allows the user to communicate with other users and create friendships on the platform via an Asynchronous system.

Size = XL

Priority = Must Have

DoR =

- The integration of the database is successful
- The UI is already built
- User authentication is completed

DoD =

- The user can communicate with another user, whether it's receiving or sending messages.
- Chat notification is optional.

3. Near Me feature

Description = This feature allows the user to know another user nearby, so that they can select the user and create a plan to do something in real life

Size = L

Priority = Must Have

DoR =

- The Add Friend UI is built

DoD =

- The user can see another user who's near their location, with the approximate distances.
- The user can add and chat with other users who are near their location
- The user whose distance is more than 5km will not be shown in this feature

4. User Customization

Description = Allows the user to change their username, password, toggle their location to be shown or not, and change their preferences.

Size = M

Priority = Must Have

DoR =

- The login and register system is fully developed
- The design or the UI of the user Profile page is completed

DoD =

- The user can set their location as "private," which means that no other user can see their current location, or "Public", which allows the user to know the location of the user.
- The user can select and change their preferences, and the change will be saved in the database.
- The user can change their old password to the new one.
- The user can change their username.

5. Conversation Starters

Description = Allows the user to select and send various prompts for conversation starters listed above, where the user types their messages.

Size = M

Priority = Should Have

DoR =

- The chat feature is fully developed
- The add friend feature is fully developed

DoD =

- The user can select and send the prompt listed above their place to type

6. Add Friend

Description = Allows the user to add their friend, either by email or by username. And list the added friend on the homepage.

Size = L

Priority = Must Have

DoR =

- The database is integrated into the software
- There is more than one user in the app
- The main or homepage UI is fully developed

DoD =

- A user befriends another user by adding their username, and the added user will be saved in the database.
- A user can befriend another user by adding their email, and the added user will be saved in the database.

7. Friend Recommendation

Description = allows the user to see another user who has similar preferences to them.

Size = M

Priority = Should Have

DoR =

- The database is integrated into the Software
- The Add friend page is fully developed

DoD =

- The user can see the other user who has a similar preference to them

8. Blocking Offensive Words

Description = The system will cancel the user submission of text whenever their text contains specific offensive words.

Size = S

Priority = Could Have

DoR =

- The chat feature is fully developed
- The database for the blocked word is developed

DoD =

- The sent message containing the offensive word will be aborted, and the system will show a warning to the user.

Challenges and Solutions:

Describe the major challenges encountered during the project. Explain how these challenges were addressed and overcome.

Challenges =

- The first major challenge on this project is time management, because we're a group of students, we have other assignments in other lectures, which provides us less time to focus on one project.
- And then there is the experience problem, since this is our first time making a real working product that'll be used and launched to the public, we don't have any experience as to how complex the project will be, nor the capability of doing it perfectly.

Solutions =

- Because we have our schedules, we didn't commit to a great collaboration in the communication part. Thus, we manage our timeline and work according to our timeline.
- As the project gets more complex, there's going to be a situation where our knowledge will be a wall to the project. So we tried to overcome it by searching similar cases on StackOverflow or even ChatGPT, and after that, we will learn how to apply that knowledge to our project.

Velocity and Burndown Chart

Cumulative flow diagram usage

Provide a velocity and/or a burndown chart of your project. Summarize the chart in no more than 2 paragraphs. **For teams not using Scrum, you may use Cumulative Flow Diagram or Aging WIP Chart (for kanban-based team). Rename subsections accordingly.**
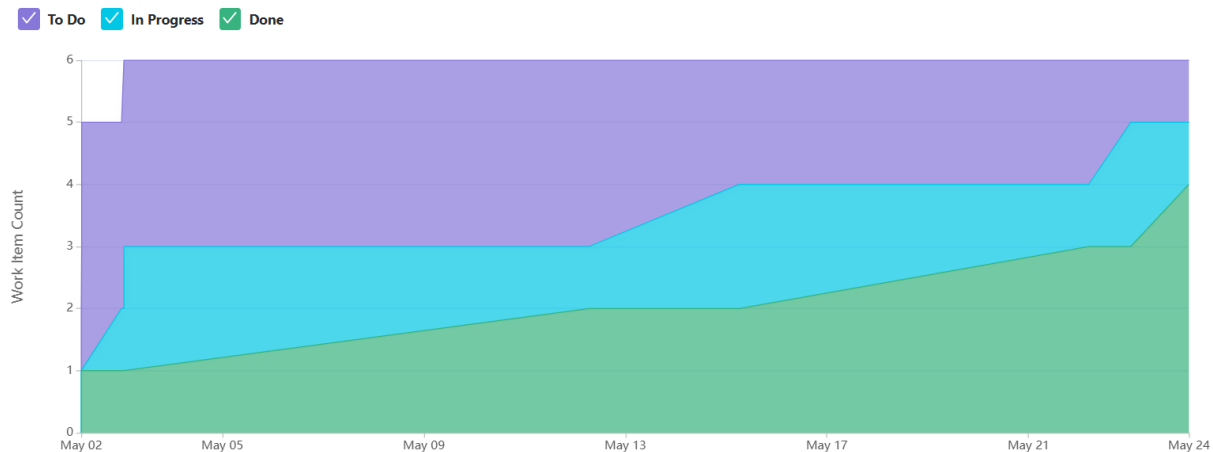
Figure 1: Cumulative Flow Diagram

This diagram shows the steady workflow ranging from the 2nd of May to the 24th of May. With a consistent and steady to-do list and a steadily increasing In Progress and Done. This chart also shows that the project has a well-managed process with minimal backlog growth, represented by the steady line in the To Do chart.

Project Closure

Lessons Learned & Recommendations:

Lessons Learned

- Time management = we learnt that time management is the key to doing anything on this project. Especially since we're students who have to do other projects too, we learnt that even though the time limit of a certain project is still 4 months, it might not be finished without proper planning and time management.
- Different background = every team member we have here has a different skill set and experience from the other, so when we're collaborating, there's going to be some issues regarding who's going to do what.

Recommendations for Future Project

- Plan it; whenever we're going to do a project, almost every single time, we prefer to do a project with a plan that has been made previously, because it is simpler, and you can set a timeline as to when you are going to do a certain thing.
- Communication is key, even though we're from different backgrounds regarding skills and experiences, we can still learn as the project goes on, so there's going to be a better chance for us to complete this project within the deadline.

Final Deliverables

Describe all final deliverables produced by the project.

1. Software Product
   - KeSapian = The functional and ready-to-deploy version of KeSapian, including the features listed in the final Product Description.
2. Project and Process Documentation
   Agile Project Management Report = The document that serves as a record of the project, including :
   1. Project Overview
   2. Scope
   3. Execution Details
   4. Outcomes
   5. Challenges and solutions during the project
   6. Lessons learned and recommendations for future projects
3. Agile Development Artifacts :
   a. Product Vision Board
   b. Initial Product Backlog
   c. Final Product Backlog
   d. Kanban Summary
   e. Cumulative Flow Diagram

References

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- Al-Baik, O., & Miller, J. (2015). The Kanban approach, between agility and leanness: a systematic review. *Empirical Software Engineering*, *20*(6), 1861–1897. https://doi.org/10.1007/s10664-014-9340-x
- Lei, H., Ganjeizadeh, F., Jayachandran, P. K., & Ozcan, P. (2017). A statistical analysis of the effects of Scrum and Kanban on software development projects. *Robotics and Computer-Integrated Manufacturing*, *43*, 59–67. https://doi.org/10.1016/j.rcim.2015.12.001

Appendix A Software Interface Mockups

https://www.figma.com/design/Bfsu5l4hww6lpH2kzglf9T/KeSapian?node-id=0-1&t=RTwsZo9QXENlDlLy-1

Test Cases
1. User Register
    a. Gherkins Scenario=
        i. Given that I'm on the Register Page
        ii. When I register with a unique email and valid credentials
        iii. And I click the register Button
        iv. Then I should be redirected to the Login Page
        v. And I should see a message saying that I successfully registered my account.
    b. Description = Verify the new user can register successfully with a unique email
    c. Preconditions = The User isn't logged in, and the email isn't registered in the database.
    d. Steps =
        i. Navigate to the register Page
        ii. Enter a valid name
        iii. Enter a unique, unregistered email
        iv. Enter the password
        v. Confirm the password
        vi. Click register
    e. Expected outcomes = the system will redirect the user to the login page, and display the message saying that the user account is successfully registered.
2. User Login
    a. Gherkin Scenarios
        i. Given that I'm a registered user
        ii. And I'm at the login page
        iii. When I enter my email and password
        iv. And I click the Login Button
        v. Then I should be redirected to the homepage
    b. Description: Verify that a registered user can log in with the correct credentials.
    c. Preconditions: An account with the email and password inputted by the user matched with the ones in the database
    d. Steps:
        i. Navigate to the login page.
        ii. Enter your email.
        iii. Enter the password field.
        iv. Click the Login button.
    e. Expected Result: The user is authenticated and redirected to their dashboard.
3. User logs in with incorrect Credentials.
    a. Gherkin Scenarios
        i. Given that il'mat the login page
        ii. And I'm a registered user
        iii. When I entered my email and password
        iv. And I click the Log in button

      v.   Then the system should be giving an error message saying that the inputted password is

b. Description: Verify that login fails with an incorrect password.

c. Preconditions: An account with the email "john.doe@example.com" exists.

d. Steps:
      i.   Navigate to the login page.
      ii.   Enter your email address.
      iii.   Enter the password.
      iv.   Click the Login button.

e. Expected Result: The system rejects the login attempt and displays an appropriate error message.incorrect