Project Plan

Agile Software Project Management System

by

Team Coca-Cola

Unit Convenor: Prof. Patrick Then
Supervisor: Ms. Fu Swee Tee
Client: Dr. Brian Loh

Project Plan

1.1 Introduction:

- ***Purpose***

- The purpose of this project plan is to document planning assumptions and decisions which involves a system that supports the agile software development lifecycle by allowing users to perform various functionalities.

- ***Background***

- Agile started life on software projects, and suits to those projects the most, providing the right circumstances are in place to adopt Agile. Not all project can use Agile to deliver as it is especially relevant where there is real uncertainty about the expectations and requirements relating to the end deliverable. As software projects are slowly getting more and more popular, user often are quite poor at defining clear requirements at the start of many types of projects. This is possibly the biggest issue that Agile Software Project Management System produces a solution for. By using the Agile principles and creating a system that supports the agile software development lifecycle is the main reason in the creation of the Agile Software Project Management System.

1.2 Key Personnel:

- ***Stake Holders***

- Prof. Patrick Then
- Dr. Brian Loh
- Ms Fu Swee Tee

- ***Project manager and Key project members***

- Project manager
- Key project members
- Admin

2. Terms of Reference:

- ***Goal***

- The goal of the project is to create a system that supports the agile software development lifecycle by allowing users to perform various functionalities.

- ***Objectives***

- The objectives of the project are listed down below:

- Add requirements & assign tasks to project members (Project manager)
- Progress tracking as tasks are completed (Project members)
- Developed codes can be pushed to repositories
- Bug testing, bug reporting & bug fixing
- Generating of documentation from stored information after completion

- The product backlog items are listed down below:

- Register an account
- Login & Logout
- Appoint project manager
- Delete user
- Create new project
- Add requirements to project
- Edit requirements
- Delete requirements
- Assigning tasks
- Mark task as complete
- Due dates adjustments
- Add comment on requirements
- Upload PDF files
- Progress Tracking
- Bug testing
- Bug reporting
- Bug fixing
- Generating reports
- Capture timeline and sprints

- Switch Project Manager (Scrum Master)

- ***Scope***

- The scope of the project is to improve by combining several task management and time tracking websites/application into the agile software project management system. Different role will have different level of access towards the system (Admin, project manager & project members). By accessing the system, they will need to **register an account** so that they can **login and logout of the system.** Admin will later **appoint project manager, switch project manager (Scrum master)** and also **delete user** if neccessary**.** The system will also provide features like **creating new project, add, edit requirements, assigning them to project members and delete requirements.** Besides**, progress can be tracked, due date can be adjusted** and they will **perform bug testing, reporting, fixing** and lastly **generating report**. The system also includes requirements listed by our client which are **upload PDF from system, mark off tasks as complete** by project manager**, give comments, capture timelines and sprints.**

- ***Critical success factors***

- The critical success factor for the Agile Software Project Management system will be a **Working System**. It is only possible for client to be using the system developed, it must be working and fulfil their requirements by providing features that can help them during the development of their project. Besides, the system must also be **Flexible and Innovative**. This is to shows that the difference from the application that are already available out in the market. Lastly, the system will need to adapt to **Rapid response to demand, technology and personnel changes**. The system should be able to provide most of the features needed by the client so that there is a reason for them to choose this system for their Agile software project management process.

- ***Acceptance criteria***

No	Backlog Items	Software Product Quality	Definiton of Done
1	Register an account	➢ Functional Suitability – Functional Correctness ➢ Usability – User Error Protection	➢ Developers must ensure the Sign-up page will require email address, username and create password. ➢ If user choose to sign up option, sign up button will be locked / grey colored until user fill all the necessary information which are email address, username and create password. The number of errors found in testing must be <= 5%.
2	Login & logout	➢ Security - Integrity	➢ By using username and password to login, the project member will be able to log into the system. The username and password are unique as they are created by the individual himself/herself. The chances of unauthorised personnel logging into the account must be <=5%.
3	Appoint project manager	➢ Security - Confidentiality	➢ Only admin will be able to appoint project manager by using admin account. Therefore, in this case admin account must only be accessed by authorised personnel. The chances of unauthorised personnel into admin account must be <=5%.
4	Delete user	➢ Functional Suitability - Functional Correctness ➢ Security - Confidentiality	➢ The admin panel will have to make sure that they have the correct decision when removing a user from the system. This action cannot be undone, therefore the user deleted must be correct and confirmed. The number of errors found in testing must be <=5%. ➢ Only admin will be able to delete users from the system. Therefore, the admin account must only be accessed by authorised personnel so that misuse of power won't happen. The chances of unauthorised personnel into admin account must be <=5%.
5	Create new project	➢ Usability - Operability	➢ Project manager will create new project before adding requirements into it. The create project feature must be easy to operate and just within a few steps for giving the

			project details. The level for ease of use must be at least 9/10.
6	Add requirements to project	➢ Functional Suitability - Functional Correctness	➢ The project manager will add requirements to the project created and to ensure that the task details added is with the correct information before clicking the “add” button. The number of errors for testing must be <=5%.
7	Edit requirements	➢ Usability - User Error Protection	➢ When requirement is added, it might involve changes as the project continues to evolve, therefore it is important to allow users to edit the requirement to adapt to the current situation. This is to allow user to also recover from making any errors by editing the requirements accordingly. The chances of user making any error must be <=5%.
8	Delete requirements	➢ Functional Suitability - Functional Correctness	➢ The project manager will have to make sure that the requirement that will be deleted must be the correct one before clicking the “delete” button. The number of errors for testing must be <=5%.
9	Assigning tasks	➢ Usability - Operability ➢ Functional Suitability - Functional Correctness	➢ Assigning tasks to project members must be easy to operate and by just clicking the assign button, the name list will appear for the manager to choose whom the tasks will be assigned. The level for ease of use must be at least 9/10. ➢ The project manager is to make sure that the project member that is assigned with the task must be correct so that members will know what tasks they will be in charged in the project. The chances of the the user making any error must be <=5%.
10	Mark tasks as complete	➢ Functional Suitability - Functional Appropriateness	➢ The project manager will have to ensure that the tasks is only mark as complete when the checking is done properly. The number of errors for testing must be <=5%.
11	Due dates adjustments	➢ Usability - User Error Protection	➢ The due dates can be adjust to protect users from making any errors. If the project member is unable to finish their tasks on time,

			at least they still have a way to give them a second chance by extending the due dates. The chances of user making any error must be <=5%.
12	Add comments on requirements	➢ Functional Suitability = Functional Correctness	➢ The comments posted must display correct information such as content of comments, date/time commented and the author of the comment. This is for other users to identify whom the comment is from. The chances of the the user making any error must be <=5%.
13	Upload PDF files	➢ Usability - Operability	➢ PDF files can be uploaded to the system for the tasks assigned. The user will just have to choose PDF file from their device and click upload. This feature is very easy to operate for the users to use. The operability of the system must be at least 9 on the scale of 1-10.
14	Progress Tracking	➢ Functional Suitability - Functional Correctness	➢ The progress tracking must display the correct information based on the tasks chosen so that the correct progress trackment can be documented. The chances of the the user making any error must be <=5%.
15	Bug testing, bug reporting. Bug fixing	➢ Usability - User Error Protection	➢ Bug testing is there to test for bug or any error that had been made by project members. After reporting bugs, users will continue to fix the bug before submitting it to the project manager. This is to ensure there is no errors when it is ready for checking. The chances of the user making any errors must be <=5%.
16	Generating reports	➢ Functional Suitability - Functional Correctness	➢ The reports generated from the system must be accurate and correct for further documentation and discussions. The number of errors for testing must be <=5%.
17	Capture timeline, sprints	➢ Functional Suitability - Functional Correctness	➢ For capturing timelines and sprints, this features need to ensure the information captured must be spot on by indicating the correct time and date. The project will have 2weeks per Sprint, therefore it will capture the details within the 2weeks per sprint for everyone that is involved in

			the project to evaluate. The number of error for testing must be <=5%.
18	Switch Project Manager (Scrum Master)	➢ Functional Suitability - Functional Correctness	➢ The feature of switching project manager (Scrum master) must be accurate which means only the choosen project member is to be handed over with the power of a project manager. By clicking the names of the “manager-to-be”, the results of him/her becoming the project manager for the next sprint must show correct results. The number of errors in testing must be <=5%.

3. Establishment:

- ***Processes, Procedure Standards***

The team will be using agile software development which involves daily scrum. Daily scrum will be conducted by discussing the team progress, problem or task allocation in MS Team. Three question will be asked in the MS Team by the leader to keep track of what progress of each member had done while developing the project. The questions including what have you done on the project today, what do you plan to do next and do you face any difficulty while doing the task. For this project, the team will be meeting the client and supervisor once a week to keep involve them in the team progress, update and get direct feedback and review from the client so that the team can react as soon as possible. The meeting will be conducted through MS Team and the conversation will be recorded for further reference after the meeting.

- ***Project environment***

Due to the current pandemic, the entire project will be done virtually with the help of some software including MS Team, WhatsApp, GitHub and Trello. The team will not be meeting face to face; therefore, the team have to use communication application such as MS Team and WhatsApp to communicate throughout the whole semester while developing the software. The team will use WhatsApp to manage daily communications and MS Team to discuss about the three questions every day. In addition, the team will also use MS

Team to discuss and have meeting with the supervisor and client every week. The team will also use MS Team to hold the virtual meeting. GitHub is used to handle the project version control while Trello is used for task management. Apart from that, the team also used Toggl to keep track of time while doing the task.

The development tools that are used by the team are Adobe Dreamweaver, Laravel PHP Framework and cPanel Server. The programming languages involved are HTML, PHP and JavaScript.

- ***Project team training requirement***

The team might need to study and research about the Laravel framework which use PHP on how it works as the team do not have good experience and skill on the framework.

4. Activities, Deliverables and Capital Resources:

- ***Deliverables***

No.	Deliverables	Date
1.	System Requirement Specification (SRS) Draft Submission	18 Sept 2020
2.	Project Plan Submission	18 Sept 2020
3.	Client Sign-off SRS Submission	25 Sept 2020
4.	System Architecture Design	02 Oct 2020
5.	Team Documentation	20 Oct 2020
6.	System Finalization	27 Nov 2020

- ***Activities and Tasks***

Activities and Tasks	Time (Hour)
1. Account Registration Page	**1.5h**
1.1 Input text for username and password	0.25h
1.2 Input text for email address, username, password and register button	0.25h
1.3 Registered account saved into the system	0.5h
1.4 Create invalid message if email address and password invalid	0.5h
2. Login/Logout	**0.75h**
2.1 Login and Logout button	0.25h
2.2 Username shown after user login and username	0.25h

removed after logout	
2.3 User will be navigated to homepage when login successfully	0.25h
3. Appoint Project Manager	**2h**
3.1 Admin interface to choose user to be manager from name list	1h
3.2 User receive message of being chosen to be manager	1h
4. Delete User	**3h**
4.1 Create function for Admin to remove user	1h
4.1 Create button and interface for Admin to remove user	2h
5. Create new project	**3.5h**
5.1 Create button for Project Manager to add new project	0.5h
5.2 Create interface for Project Manger to add new project	1h
5.3 Create the function for adding new projects	1h
5.4 Create input text for the manager to add new name of project	1h
6. Add requirements to project	**2h**
6.1 Create input text and form for manager to add requirements	0.5h
6.2 Create buttons to add requirements	0.5h
6.3 Create the function of adding requirements	1h
7. Edit and Delete requirements	**3h**
7.1 Create function of editing and deleting requirements	2h
7.2 Create button for editing and deleting requirements	0.5h
7.3 Create message to reconfirm before edit or delete requirement	0.5h
8. Assigning Tasks	**3.5h**
8.1 Create function of assigning task to project member	2h
8.2 Create assign icon for manager to assign task to member	0.5h
9. Mark off task after completion	**1.5h**
9.1 Create a checkbox for manager to mark off task as complete	0.5h
9.2 Task marked as completed will be move to Done	1h
10. Due date adjustments	**2h**
10.1 Create edit text for Project Manager to change	0.5h

due date	
10.2 Due date adjustments will be updated in database or server	1.5h
11. Add comments on requirements	**2.5h**
11.1 Create input text for Manager or Member to add comments	0.5h
11.2 Added comments will be saved in the database	1.5h
11.3 Create a button for user to add comments	0.5h
12. Upload PDF files	**3.5h**
12.1 Create function for the system to be able to perform uploads	2h
12.2 Create a button for user to click on and upload the files	0.5h
12.3 Uploaded files will be saved to database and server	1h
13. Progress Tracking	**3h**
13.1 Create an icon to view the progress of the task	0.5h
13.2 Create an interface or page to show the task completion percentage and generate a pdf file about the codes (added, removed, updated).	2h
14. Bug testing, reporting and fixing	**7h**
14.1 Create a function to perform bug testing, reporting and fixing	4h
14.2 Create a function to generate a report after bug testing, reporting and fixing is done.	3h
15. Generating Reports	**6h**
15.1 Create a function to generate reports in PDF/Excel format	3h
15.2 Create a function for user to be able to download or share the reports in their machine	3h
16. Capture timeline and sprints	**5h**
16.1 Create a function to capture timeline and sprints	3h
16.2 Create an interface or page to show timeline and sprints captured	2h
17. Switch Project Manager (Scrum Master)	**2h**
17.1 Create a function to switch project manager	1h
17.2 Create a switching button to switch project manager	1h

5. Resources:

- ***Organisation***

The main resources on this project development will be the team members. Team members including the leader of the team Lee Jia Jun and the members of the team including Jason Goh, Ahmed Tarek and Bong Siaw Zhen. The team had discussed and agreed that the scrum master and project manager will take turns among the team member itself during the development so that everyone in the team can experienced to be the scrum master and project manager. To be clarified, the scrum master will be taking the responsibility for other team member in the team to be more familiarized in Agile practices that will be used throughout the whole project development and trained to follow the practices appropriately. Apart from that, scrum master will also have to promote daily scrum meeting, planning, discussion, monitoring the whole development and also the sprint process. Scrum master will also be the person who could help another team member is required. The project manager, who will be the person who define the project scope of the team, allocate task for other team member, define the resource requirements and reassure the quality of the project developed. Apart from that, monitoring the project plan and managing relationships with the client and the stakeholders are also done by the project manager throughout the whole development.

6. Risk:

The risk assessment includes both the identification of potential risk and the evaluation of the potential impact of the risk. A risk mitigation plan is designed to eliminate or minimize the impact of the risk events that will make a negative impact on the project. The team will prioritize the risk items that are listed according to the risk exposure score and a mitigation strategy will be created for the risk items. In order to calculate to risk exposure score for each of the risk items, the team had multiplied the likelihood and impact score so that the risk exposure score could be compared and prioritize the risk item from highest risk to lowest. After that, the team will also rate the likelihood value from 1 to 5

where the higher the value of likelihood, the higher the risk might happen during the development. Lastly, to prevent data lost, the project leader (Lee Jia Jun) will pull the latest file from the repository every night before 11:59pm and save it to a harddisk and Google Drive. The files in the harddisk and Google Drive will be the backups just in case any unforseen circumstances happen.

After the risk exposure value is calculated, the team had come up with the mitigation strategy for every risk item and choose a category for each of the mitigation strategy in the table below.

No.	**Risk Item**	**Likelihood (1 – 5)**	**Impact (1 – 5)**	**Risk Exposure**	**Mitigation Strategy**	**Category**
1.	Will it use a lot of time to implement it?	3	2	5	Start the development of the system earlier and do some research before develop the system	Risk prevention
2.	Will it cost a lot to implement it?	2	1	2	Research for free sources that could be found online that will minimize the cost of developing the project as much as possible.	Risk prevention
3.	Will it require stable database for it?	4	5	20	Invest for a more stable database that won't crashes after certain of time.	Risk transfer

4.	Is the database secured as personal information are highly concerned?	5	5	25	Invest some for hiring a cybersecurity to deal with the security part	Impact reduction
5.	Will the user abuse the system?	2	4	8	Reduce the number of input modification if it has too many requests.	Likelihood reduction
6	What happen if the data lost while development is in process	4	5	20	Backing up the data at the end of the day so that the team had the version control of every day development process	Risk prevention

7. Schedule:

- ***Delivery Phases***

No.	Item	Dependencies	Business Value (1 least – 10 most)	Sprint Needed (1|2|3|4)
1	Account Registration	-	10	1
2	Login	1	10	1
3	Logout	2	10	1
4	Appoint Project Manager	2	10	1
5	Delete User	-	5	1
6	Create new project	4	10	1
7	Add requirements to project	6	8	2

8	Edit and Delete requirements	7	6	2
9	Assigning Tasks	7	10	2
10	Mark off task after completion	9	8	2
11	Due date adjustments	7	6	3
12	Add comments on requirements	7	7	3
13	Upload PDF files	6	7	3
14	Progress Tracking	9	8	3
15	Bug testing, reporting and fixing	9	8	3
16	Generating Reports	9	8	4
17	Capture timeline and sprints	9	7	4
18	Switch Project Manager	4	7	4

- ***Overview***

The table of deliverables, features task breakdown and delivery phases above showing how the team had plan to develop the system in this semester. The team had a discussion before and had decided to split the development of the system into 4 sprints where 2 weeks per sprint. A sprint review will be conducted after the sprint ended with the supervisor and client to let them know the progress and what had been completed in the system. Sprint review also conducted for the team to get immediate feedback and make changes on the system if required. The team had split the backlog item into two sprints, where 9 backlog items will be done in sprint 1 while 8 left backlog items will be done in the second sprint. The team had chosen the highest business value's backlog item to be completed in sprint 1 so that the minimum requirement and function can be created first. For example, account registration, login, logout features are to be created first followed by other function as user had to register and account and login to be able to use other function in the system. The team had planned to have the system completed within these two sprints in this semester. Additional features might be added during the sprint if the features are required and could help to system to be better.

- ***External Depedencies***

Before developing the system, the team had decided to use Trello application for task management as the team had some experience in using Trello during previous semester. In Trello, the team had created a Trello Board to save all the features or backlog item in different list such as To Do, Doing and Done. The team will also create different card of the system features or backlog item in order for them to move the backlog item from To Do to Doing or Done when the sprint started. This could help the team to manage the task efficiently. At the same time, the team could track down the workflow of the completion of task in the burndown chart that are offered in the Trello.

- ***Assumptions***

1. Scope
   - The scope of the project will not be changed once the client signs off the Software Requirements Specification (SRS).
2. Methodology
   - Agile project management method will be used throughout the project development.
3. Technology
   - The team will use HTML, CSS, PHP, JavaScript in developing the system.
   - Laravel Framework will be used in the system.

- ***Time Line***

No.	Tasks	Sprint 1		Sprint 2		Sprint 3		Sprint 4	
		Week 1 28 Sept	Week 2 5 Oct	Week 3 12 Oct	Week 4 19 Oct	Week 5 26 Oct	Week 6 2 Nov	Week 7 9 Nov	Week 8 16 Nov
1.	Account registration	1.5h							
2.	Login	0.75h							
3.	Logout								
4.	Appoint Project Manager	2h							
5.	Delete User		3h						
6.	Create new project		3.5h						
7.	Add requirements to project			2h					
8.	Edit and Delete requirements			3h					
9.	Assigning Tasks				3.5h				
10.	Mark off task after completion				1.5h				
11.	Due date adjustments					2h			
12.	Add comments on requirements					2.5h			
13.	Upload PDF files					3.5h			
14.	Progress Tracking						3h		
15.	Bug testing, reporting and fixing						7h		
16.	Generating Reports							6h	

17.	Capture timeline and sprints								5h
18.	Switch project manager								1h

8. Budget:

There will be no cost for the project team in developing the project in this semester as the team had decided to use the free sources that could be found online to build the system. There might be cost applied on the second half of the development which applied on the next semester that will be decided on the later semester.

Semester	Estimated Cost (RM)
Sem 1 FYP A	-
Sem 2 FYP B	To be confirmed

Document Approval

This document is approved by:

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(Project Client)

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