## Succulent Plants Nursery Management System

By TEY CHEE LEONG

#### A REPORT

#### SUBMITTED TO

#### Universiti Tunku Abdul Rahman

## in partial fulfillment of the requirements

for the degree of

#### BACHELOR OF INFORMATION SYSTEM (HONOURS)

#### **BUSINESS INFORMATION SYSTEM**

Faculty of Information and Communication Technology

(Kampar Campus)

#### JAN 2022

#### UNIVERSITI TUNKU ABDUL RAHMAN

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I declare that this report entitled "**Succulent Plants Nursery Management System**" is my own work except as cited in the references. The report has not been accepted for any degree and is not being submitted concurrently in candidature for any degree or other award.

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# ACKNOWLEDGEMENTS

I would like to express my sincere thanks and appreciation to my supervisors, Ts Dr Wong Pei Voon who has offer me her guidance for my final year project in UTAR. This is my first financial system which requires understanding of mobile application development, user perspective, and database.

Furthermore, I would like to say thank to UTAR for all the teaching program and knowledge offered to students. Finally, I must say thanks to my parents and my family for their love, support and continuous encouragement throughout the course.

## ABSTRACT

The project is planned to develop a mobile application for academic purpose. Report of project will include concept, research and design method of project. This will project aim to resolve problem of succulent gardener problem which in existing market and society. Therefore, the project aim to set scope and objective of develop system to resolve existing system problem and meet higher user requirement. By review existing system such as Plantnote, Plant Care Reminder and NatureID that available in google play store and identify the pro and cons of system to conclude a better system design by making comparison with existing system. Besides, design of system by waterfall model to develop system and follow the plan and procedure of system and identify the system requirement. The overall of project is planned to create a mobilebased application which overcome problem such as management of user plant list, unable to achieve of visualize sample of plants and poor instruction and guidance of gardening tips. To overcome the problem the project is aim to develop a system which able to achieve to resolve existing problem with innovative idea.

The main function of this application will planned to develop system of create, read, update, delete of personalized plant list and get notify for task and date to watering, fertilize and repot the flower, get knowledge and caution by different type of plant. Another feature planned to develop it is community chat system which allow user to have discussion and chat in the post related to plants with friends and experts. The interesting part of application will planned to develop a mini game in the application.

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# **CHAPTER 1**

#### 1.1 Introduction

In March of the year, 2020 global had been impacted by the COVID-19 pandemic and it was declared as a global health emergency [1]. In the form of a pandemic, people staying at home had an initial idea on how to make a house become more beautiful or cultivate some hobby to spend their free time during the lockdown (The Straits Times, 2021). The demand for Plant had increased and affected by the pandemic indirectly. During the period of COVID-19 pandemic raise of 3.4% purchase of plants [2].

However, most nursery gardens had not in a digital platform to provide proper instruction or information to customer after purchasing plants to take good care of their plant. Succulent is a type of plant with thick flesh tissues, and water was adapted into stem or leaves. The figure below (Figure 1.1.1) shows the image and some types of succulent plants such as Aeonium, Agave, Echeveria, Haworthia and more. There are hundreds of succulent plants in succulent family with different appearances and criteria of needs.



Figure 1.1.1(Figure of succulent plant and sample type)

#### 1.1 Problem Statement

This proposal aims to develop a mobile application, due to the large increase of smartphone users population in the recent year had to make mobile application become trending in global. According to figure (Figure1.1.2) shows from the year 2015 had 4.53 billion smartphone users and in the year 2021 had reached 5.22 billion people is having a smartphone [3]. This shows that smartphone is highly increased. Even though more mobile application had been developed in the current market but there are still several criteria was unable to fulfil user needs.



# Number of Smartphone Users Worldwide 2015 - 2020

#### Figure 1.1.2 (Figure Growth of smartphone User in worldwide)

Firstly, the problem of hard to memorize needs of the requirement for different succulent faced by plant lovers. Different need and requirement of different plant such as water needed, sufficient sun light, the type of soil is a hard challenge for gardener take note and memorize ever information about the plants.

Therefore, a new gardener with no experience in taking care of plants is having the issue of how to manage the plants. During the pandemic period, most beginners try and learn more knowledge of plants from the website. On the other hand, the problem of no guidance from an expert might cause misunderstanding or high-risk actions which bring harmful to plants such as propagating, repot and diagnose problem will bring to the result of the wrong action made by gardener will cause harmful or dead to plants.

 $\equiv$ 

Close down cause more potential customer unable to visit nursery garden physically to look for plants they interested in. Search for a picture from a website had become an alternative method for a gardener to refer plants they are interested in. Existing mobile applications in the market had achieved developed a list of plant products with picture and video as reference but had no achieved to display products visualized.

#### **1.2 Project Objectives**

#### • To Develop a mini game-based for plantation

This application will deliver a different way of method to giving guidance and instruction on gardening in the form of a mini-game. The mini-game create will be developed in form of Tamagotchi (pet simulation game). This feature aims to provide user to get involved and interact with the application more and responsibility toward their plants.

#### • To Develop an account personalized plant listing and task

The application will develop a personal account that includes all list of plants added by the user. Each plant will display the name and date of a task in the list. From this feature allow the user to manage their plant more systematic way and do not need to memorize too much of things.

#### • To Develop a community discussion about plants

The feature will be developed in this application which aims to allow users to share their blog in the community. One of the benefits to developing a community in the application which allow more plant experts and experienced gardener to have a discussion and help other members in the community whenever they are having trouble or need suggestion.

#### To Develop community point and badge for individual user

The feature is created aim to encourage more person able to provide their opinion and help other person to solve issue while planting. Next the badge is also one of the method to prove how active the person is in this community and shows the contribution , effort and reliability to the community.

## **1.3Project Scope and Direction**

The purpose of the project development is to build a personal profile-based mobile application. The development aims to assist the user in manage and take care of their succulent plants. This application help users to have a better experience in taking care of succulents at the same time let the user learn and get to know more tips and hints to grow and manage their plants. Implementing of this application is to bring the convenience and better experience of gardening for the user by resolve solution happen in an existing application.

## **1.3.1** Below is list of scope to be develop in the mobile application.

- The application will be able to record and remind task of succulent plants by notification.
- The application will show tips and hints of plants to manage growth plant in a healthy state.
- The application will develop a mini-game or stimulation on gardening.
- The application will develop a community for the user to discuss a topic related to gardening.
- The application will develop a badge system for the user who contribute to the community
- The application will allow upload photo of plants profile.
- The application will be able to add and edit task and reminder plant reminders.
- The application will show different type of tips and hints for the user depend on types of plants.
- The application aim to create a setting for user for modification their profile
- The application aim to develop a application that can modify their account privacy such as password .

# 1.4 Impact, Significance and Contribution

# 1.4.1 Decrease out going of citizen in period of pandemic

This application brings a contribution to decrease chain and cluster of COVID-19 during the period of COVID-19 pandemic (Recovering Movement Control Operation) RMCO implement by the government is encourage citizen not to go out unless it is essential. The create of application encourage user and plant lover to fight with a covid stay at home to prevent the spread of the virus.

# 1.4.2 Bring impact to community and solve problem of garden lover

This application also brings a contribution to the community. Recently lockdown of the city had been executed by the government, plant lover is only allowed to purchase plants without touch, view and feel. Develop of augment reality feature in this application which overcomes user problem by display augmented plants picture into reality.

# 1.4.3 Gain more knowledge and information related to succulents

Not only that this application also helps in knowledge enhancement related to succulent plants. Create of tips and hints of different type of succulent will in result of user get more understanding about plants.

# 1.4.4 Raise awareness of importance of environment

A plant lover will always love a green environment. Develop of this application could bring contribution to society by raise and inspire more people to love nature and love our mother earth. By cultivating the habit of gardening will inspire a person to love the environment and nature.

# 1.4.5 Providing free application for all user

Existing application features such as community discussion, plant expert consultation or creation of plant list need to pay for unlocking the complete features function. However, this application will provide free full features for all users to encourage people to love nature.

# **1.5 Report Organization**

The brief background and detail of research is shown in Chapter 1.In Chapter 1 aim to find out main of problem of existing problem found in social and solution to resolve the problem. In Chapter2 will be review existing system in the market. A summarized table and investigate result will be showing in end of Chapter 2. In Chapter 3 describe the steps and flow to develop the project with graph and diagram shown. Chapter 4 will shows the softcopy example of application interface and actual work of application. Chapter 5 will shows the conclusion and upcoming plan of development.

# **CHAPTER 2**

## 2 Literature Reviews

There are few plants care based application available in android platform such as Plantnote, PlantCare and NatureID. This three application which contain the same main function which aim to provide user task notification, and plant management. In current market there are some functionalities which is not available such as augmented reality feature which is unique in market.

# 2.1 Plantnote: Plant Diary & Water Reminder

## 2.1.1 Description

Plantnote is a mobile application that developed for manage indoor plant for the user in home to record and track down task need to be done to the plants. Plantnote had several functions such as add, remove, edit, delete the plant's information. Recorded action will be notified during the day by pop-out notification to the user. From figure(Figure 2.1.1.1) shows the main page of Plantnote. The main page of PlantNote will always display the daily task with the label of plant name as well as task as Figure 2.1.1.1 shown below.



Figure 2.1.1.1 (Main page of Plantnote)

Bachelor of Information Systems (Honours) Business Information Systems Faculty of Information and Communication Technology (Kampar Campus), UTAR On the other hand, plant arrangement can be sort by Name, Date, Water date, Type, and Location of plants as figure(Figure 2.1.1.2). The overdue plant will be showing a light orange colour bell on the page as showing the task had exceeded the selected day, and lastly notification of reminder can be close by the user or open by the user manually.



Figure 2.1.1.2 (Sort of plants to display) Figure 2.1.1.3 (Profile and list of plants)

Personal profile of plants had been added into the list of "My plants" will be showing in Plant List with image and name of plants as figure (Figure 2.1.1.3). The user was able to click on the search icon to look for the plant by name. Edit of plant profile can be done by user such as upload photo, rename ,adjust in water and sunlight required , add reminder and more action as figure (Figure 2.1.1.4) shown.



*Figure 2.1.1.4 (Edit of plant profile) Figure 2.1.1.5 (Discover from Plantnote)* 

Discover from Plantnote mobile application as figure below (figure 2.1.1.5) shown, including browsed plant history (Plant archive), Google Lens Plant identification(Planet Identification), Google Map (Plant Identification), and Google News search plant relevant news (Plant articles).Discover module from Plantnote is using API as their app functions and feature.

# 2.1 Summary of Strength and Weakness of Plantnote mobile application shows at below:

## 2.1.2 Strength

-Push-notification to alert user for reminder

-modifiable plant information

-Data can be backup and restore by sign in account

## 2.1.3 Weakness

-No Instruction or guidance of how to manage the plant.

-No community available for open discussion

-Use of google API such as Google Lens, Google Map and Google News ineffectively as function of application.

-Plant reference could not be visualized method.

-No introduction for new user of overall application description.

# 2.2 Plant Care Reminder – Plant Watering

## 2.2.1 Description

Plant Care is a mobile application which developed for the user to manage their plant with track and record task done and need to be done by the user. As figure (Figure 2.2.1.1) shows symbol of water, spray, fertilized will display below the name of plants. During the task need to be done by today, the application will remind the user to take care of plants by notification. Main page all features of application included mini-game, change the view of plants and add new plants and user setting.



Figure 2.2.1.1 (Main Page of Plant Care Reminder)

#### **CHAPTER 2**

Profile add or edit of plants can be done as figure (Figure 2.2.1.2) shows the new plant was added into the list of the user account. Action can be done by the user such as create a name, periodic care of plant properties as figure (Figure 2.2.1.2) shows Watering, Spraying, Feeding, Rotate and One-off events. On the other hand, the creation of the plant, location of the plant, dormant period and environment of the plant and notes is shown in add and edit function. For every creation of plant will pop-out an advertisement in the application.



Figure 2.2.1.2 (Add & Edit plant profile)

Two features created by Plant Care Reminder which is Tic Tac Toe and Football / Soccer, the two mini-game features were created to be played by user for entertainment purpose. Both games can be decided to play by a single player or two players. Figure (Figure 2.2.1.3) below shows the example of a mini-game gameplay example.



Figure 2.2.1.3 (Mini game created by PlantCare Reminder)

Summary of Strength and Weakness of Plantnote mobile application shows at below:

## 2.2.2 Strength

- Instruction of user manual to new user
- Personal data can be backup and restore
- Available of notification as reminder to user
- interesting feature such as tic tac toe and plant soccer

## 2.2.3 Weakness

-No guidance or tips for new gardener with related to user's plant.

-Lack of feature such as visualized plant as refer.

-No community available for open discussion

# 2.3 NatureID

# 2.3.1 Description

A Mobile application used to identify, manage, diagnose the different type of plant. As figure (Figure 2.3.1.1) the user can search for plants by name of the plant from the main page of the application. A top search of plants will be showing at top of the search list as figure (Figure 2.3.1.2) shows.



Figure 2.3.1.1 (Main page of NatureID)

Figure 2.3.1.2 (Search for Plant by name)

Searched Plants will show plant profile information as figure (Figure 2.3.1.3) and the article allows user to get more understanding about plants. Important plant information such as plant properties and difficulty of maintenance, the height of plants, benefit and what to be aware for the plant and more. The user could get to know more about plants interested as well as get to know how to take good care of the plant. Figure 2.3.1.4 shows the type of plant and instruction to take good care of the type of plant by providing the need of plants. Whenever a user is interested and planned to add the plant into the list click add to my Yard will add the selected plant into the User plant list (My Yard).



Figure 2.3.1.3 (Plant Profile)

Figure 2.3.1.4 (Instruction of plant)

#### **CHAPTER 2**

Before adding a plant into the plant list user need to modify reminder for plant such as watering, misting, fertilizing and rotating of the plant. As figure (Figure 2.3.1.5) shows the time of the reminder, frequency of task and previous task done will be modified by the user manually. After edit of reminder and profile will be saved into the user personal plant list. User can look for upcoming task need to be done from My Yard as figure (Figure 2.3.1.6).



Figure 2.3.1.5 (Edit of reminder)

Figure 2.3.1.6 (Plant List My Yard)

From the Feed feature of the application, user can discover different type of plants images that snap by another user as the figure below (Figure 2.3.1.7) shows. Feature of share own plants is open for all user and system helps to identify the type of plants as figure (Figure 2.3.1.8) shows. Selected identified plant will show information about plants same as plant profile. User allowed to add plant after snapping off the plan



Figure 2.3.1.7 Community Posts

Figure 2.3.1.8 Snapped system plant identification

# **2.3** Summary of Strength and Weakness of NatureID mobile application shows at below:

### 2.3.2 Strength

-Introduction & instruction for new user

-Reminder system available

-Modified plant information

-Sufficient of plant information and instruction for user

-Community Post is available

-Backup and Restore of data are available

## 2.3.3 Weakness

-Paid to unlock all feature such as plant Expert and unlimited photo snap

- -No visualized plant display in real life
- -No video or stimulation guidance for user
- -No discussion community available

	PlantNote	PlantCare	NatureID	Proposed App
User Manual Guide	×		$\checkmark$	
Daily Task Reminder				
Backup & Restore Personal Data	$\checkmark$	$\checkmark$		
Modified Personal Plant list	$\checkmark$		$\checkmark$	
Plant important tips and hints about plants	×	×		
Visualized Plant in Real life	×	×	×	
Discussion Community	×	×	×	
Plant Expert System	×	×		×

## 2.4 Summary of all existing mobile application difference and feature

Table 2.4.1.1 Summary of Existing Application

Table 2.4.1.1 shows the summary of an existing application, there is a different feature from a different application. The proposed application resolved the weakness of the existing solution. The proposed application features will create such as instruction guide for user, daily task reminder, backup & restore personal data, modified personal plant list, plant important tips and hints about plants, hints for new beginner to manage plants, visualized plant in real life

# **CHAPTER 3**

## 3.1 Design Specification



Figure 3.1.1 Waterfall Model

The methodology involved in this project will be developed with the waterfall method. The reason for using waterfall model methodology (Figure 3.1.1) to develop it is because the waterfall is the easiest and fastest method. The waterfall model phase needs to be completed before the process to the next phase [5] The reason to use this methodology is that the waterfall model is easy to understand and easy to manage[6]. On the other hand, the Waterfall model System Development Life Cycle has well-understood milestones which easy to understand and allow the developer to proceed with procedure follow by steps [10].

## 3.1.1.1 First Phase - Planning

During the planning phase, the developer needs to collect problem faced, existing system flaws, solution of flaws and problems. The planning phase need to find out the problem and requirement of enhancement in an existing application. [7]. Therefore, the planning phase

had found out the solution detail and method to develop the project. Question related to lack of functionalities of application, effectiveness of application and usability of application will be ask volunteer. To develop this application I planned to look for some existing related user with different target persona as a volunteer as sample of data collection, the aim of data collect is to collect suggestion and flaws of existing market application.

After colleting sample data of review from user, data will be filter out to determine and plan for risk of development included time, cost, technical skill and effectiveness of suggestion and review from pass users. As planning use of waterfall model in analysis phrase was planned to ensure the requirement of user and issue faced will be determine well.

#### 3.1.1.2 Second phase – Design and implementation

System design phase to specify hardware, software, system requirements and module features based on literature review. The design of feature in the software is based on user requirement and system analysis [8]. After planning of software and hardware choose to be used functionalities of application will be design and planned, such as Use-case, flow-chart, detail evaluation of each modules and sub modules will be noted down for upcoming day plan. Before enter phase of implementation requirement of and information needed by the function will be list down for future guidance, The implementation phase will proceed to develop the module and feature separate into a small program. During phase of implementing will ensure every code and function will work well and proceed to another module or sub-modules, After done implement, all module and functions integrate modules in the Testing phase.

#### 3.1.1.3 Third phase – Testing and Development

The third phase will test every complete module and ensure with no mistake. If a mistake exists in the module take action to make changes [9]. When every module had done testing and ensure every module had complete requirement and scope of the project, integrate, optimize and of the system will be done in the development phase. From phase of testing user requirement had been analysed and always start get into plan of deployment.

#### 3.1.1.4 Four phase – Maintain

Forth phase maintenance, after completion of the development phase always ensure the performance of the application will be working well and proceed of maintaining phase whenever the application had under several problem and circumstances.[9]. User will always

stay notice to the application and whenever there is any error happen in the application and stay update on time.

# 3.1.2 Tools to use

Description	Tools
Android Runtime Version	11.0.10 version
Database	Firebase (Realtime Database)
Interface Design Software	Android Studio 1.0

Table 2 – Tools to use

# 3.1.3 User requirement

Functional requirement	Description
Able to get notification	User can get notification after set of date to execute
	task
Able to modify data of plant list	User can manage the plant profile by rename,
set.	delete and change properties of plant.
Able to find out some instruction	Know more about important information of plant.
and caution of different plant.	
Able to sign in with easy method.	Wish to have sign in method such as Gmail without
	lot of action needed.
Able to upload own plant picture.	User can upload their own image of plant to present
	the uniqueness of plant.
Easier way to identify plant type	User can find the type of plant with preset plant
	type.

Table 3 – Functional requirement

Non-functional requirement	Description
Operational Requirements	Application shall be able to operate under Android operating system.
Learnability	User should be able to learn and use this application easily.
Simple Interface	Wish to not get confused by complex interface.

Table 4 - Non-functional requirement

## **3.1.4 Verification Plan**

The application will be tested as my personal used. Which able to well function at the same time it is feeling convenient for myself and other volunteer user. The application will be change or remove function if it is not effective and propose a better solution will be develop in the system. The application should be well examinate and ensure technical issue is solved and provide the function to volunteer user.

# 3.2 System Design



3.2.1 Figure of use case diagram proposed project
Use case	User Register
Purpose	To create a new user from firebase authentication
Actor	User
Trigger	When user start the application, user click on register
Main flow	Go to Register and input information
Alternate flow	Go to sign in page

# 3.2.1 Tables of use case description

Table 5 - Use case description of register action

Use case	User Register-input information
Purpose	To sign up and get into the main page of application
Actor	User
Trigger	When user start the application user sign in with password and email
Main flow	Go to sign in page and input information
Alternate flow	Go to register page

Table 6 - Use case description of register input in action

Use case	User Log In – input information
Purpose	To log in get into the main page of application
Actor	User
Trigger	When user sign in with correct password and email.
Main flow	Go to main page of application
Alternate flow	Go to register page

Table 7 - Use case description of input information from register

Use case	Create Set Authentication
Purpose	To upload and create a authentication for user
Actor	User
Trigger	When user complete of input information and pressed register button.
Main flow	Go to sign in of application
Alternate flow	Go to register page

Table 8 - Use case description of create user account

Use case	Display Plant List
Purpose	To show user plant list data and other information.
Actor	User
Trigger	After log in of application
Main flow	Yes
Alternate flow	1. Go to Add Plant page
	2. Go to Delete Dialog
	3. Go to Update Page
	4. Go to View Plant Info
	5.

 Table 9 - Use case description of Display personal plant

Use case	Retrieve Personal Data
Purpose	To retrieve user existing data , display all existing plant with information.
Actor	User
Trigger	When open of application or change of data from plant list.
Main flow	No
Alternate flow	No

Table 10 - Use case description of Retrieve Personal Data

Use case	Add Plant
Purpose	To create item plant with detail information which input by user
Actor	User
Trigger	After click on add button on plant list activity
Main flow	Update Data
Alternate flow	Back to Plant list

Table 11 - Use case description of Add Plant

Use case	Delete Plant
Purpose	To delete item plant from user data
Actor	User
Trigger	After click on more button and delete text from dialog
Main flow	Update of Data action
Alternate flow	Back to Plant list

Table 12 - Use case description of Delete Plant

Use case	Update Plant
Purpose	To update item plant from user data
Actor	User
Trigger	After click on more button and update text from dialog
Main flow	Update page of plant
Alternate flow	Back to Plant list

Table 13 - Use case description of Update Plant

Use case	Update Data
Purpose	Update information of plant item create, update and delete action execute by user
Actor	User
Trigger	After done execution of add , delete and update of action by user.
Main flow	No
Alternate flow	No

Table 14 - Use case description of Update Data

Use case	View Plant Detail Info
Purpose	To show different type of caution and important information related to plant
Actor	User
Trigger	After click information icon from plant
Main flow	Display plant instruction and information from page
Alternate flow	Return back to Plant List

 Table 15 - Use case description of View Plant Detail Info Plant

Use case	Display Plant Instruction
Purpose	To determine different type of caution and important information related to plant
Actor	User
Trigger	After show of plant information and instruction page open
Main flow	No
Alternate flow	Return back to Plant List

Table 16 - Use case description of Display Plant Instruction Plant

Use case	Mini Game
Purpose	Initialize the mini game module activate the service
Actor	User
Trigger	Click on navigation game button
Main flow	No
Alternate flow	1.Go to Plant List
	2.Go to Community Page
	3.Go to Personal Setting Page

Table 17 - Use case description of Mini Game

Use case	Add Water
Purpose	To add value of water for preventing plant die
Actor	User
Trigger	Click on add water button
Main flow	No
Alternate flow	No

Table 18 - Use case description of add Water

Use case	Add Fertilizer
Purpose	To add value of fertilizer for preventing plant die
Actor	User
Trigger	Click on add fertilizer button
Main flow	No
Alternate flow	No

Table 19 - Use case description of add Fertilizer

Use case	Community
Purpose	Initialize the community activity
Actor	User
Trigger	Click on explore navigation button
Main flow	No
Alternate flow	1. Go to Plant List
	2. Go to Game Page
	3. Go to Personal Setting Page
	4. Add Post
	5. Go to Post Detail

Table 20 - Use case description of community

Use case	Display Post Detail
Purpose	Show Post Content in the interface
Actor	User
Trigger	Click on explore navigation button
Main flow	No
Alternate flow	1. Go to display Post List
	2. Add Comment
	3. Press Solve Button

Table 21 - Use case description of Post Detail

Use case	Add Comment
Purpose	Add Comment of user want to deliver
Actor	User
Trigger	Click on add comment button
Main flow	No
Alternate flow	1. Go to display Post List

Table 22 - Use case description of Add Comment

Use case	Add Community Point for personal
Purpose	Add contribution point of personal
Actor	User
Trigger	After add comment button pressed
Main flow	No
Alternate flow	1. Go to display Post List

Table 23 - Use case description of add community point

Lico ango	Salva Putton
Use case	Solve Button
Purpose	Initialize delete post of firebase for solved case by the user
Actor	User
Trigger	Clicked of solve button
Main flow	No
Alternate flow	No

 Table 24 - Use case description of add community point

Use case	Delete Post
Purpose	Initialize delete post from firebase for solved case by the user
Actor	User
Trigger	After clicked of solve button
Main flow	No
Alternate flow	No

 Table 25 - Use case description of delete post

Use case	Personal and Setting
Purpose	Initialize of personal and setting activity
Actor	User
Trigger	Click of personal and setting from navigation button
Main flow	No
Alternate flow	1. Change profile Image
	2. Change password

Table 26 - Use case description of personal and setting

Use case	Change password
D	
Purpose	To change user password for reset
Actor	User
Trigger	Click on setting button
Main flow	No
Alternate flow	1. Return to personal and setting activity

Table 27 - Use case description Change Password

Use case	Display Collection Image
Purpose	Display the current collection of user
Actor	User
Trigger	Open of personal and setting
Main flow	No
Alternate flow	No

 Table 28 - Use case description Display Collection Image

Use case	Add Collection Image
Purpose	Add the collection of user
Actor	User
Trigger	Click on add collection button
Main flow	No
Alternate flow	1.Return of personal and setting activity

Table 29 - Use case description Add Collection Image

#### 3.2.2 Activity Diagram of all activity





Activity diagram of user opening into application



Figure 3.2.2.2

Activity diagram of user register account



Figure 3.2.2.3

Activity diagram of user login account





Activity diagram of main page activity

# CHAPTER 3



# Figure 3.2.2.5

## Activity diagram of Add Plant









## Activity diagram of Delete Plant





Activity diagram of Mini game activity

#### CHAPTER 3



#### Figure 3.2.2.9

Activity diagram of community activity

## CHAPTER 3



## Figure 3.2.2.10

Activity diagram of personal setting activity

# Firebase Realtime Database 3.3



#### Figure 3.3.1 Figure of realtime database structure of application

From the figure shows two sample of user data saved and structure form of application data stored. The first child tree which is authentication code which used to verify the which data belong to which user. Then there will be 3 important data will be stored in this application included email, name and plantlist. From Plant List shows the entity and data of single plant

included attributes. Such as reminder setting for SunLight, Water and Fertilizer Date, not only that attributes such as plant name, plant type and plant image will be saved into the real-time database.

succulearner-77ab6-default-rtdb
- User
. Q5xSGP74DuZKZxEUjs1BtAOwSM82
🖕 PlantList
- collection
imageURL: "https://firebasestorage.googleapis.com/v0/b/suc"
-MzJYPfj3SDmlqGTfeuu
imageURL: "https://firebasestorage.googleapis.com/v0/b/suc"
email: "danieltey2014@1utar.my"
name: "mandela"
points: 24
profile: "https://firebasestorage.googleapis.com/v0/b/suc"
FE0RFqAnIAZOaYbBA2gw0Ss8ia23
PlantList
collection
<b>email:</b> "danieltey2014@gmail.com" ×
name: "Daniel Tey"
points: 106
<pre> profile: "https://firebasestorage.googleapis.com/v0/b/suc"</pre>

Figure 3.3.2 Figure of realtime database structure of application

Figure 3.3.2 display the different user information for instance , image , id , points awarded , name and email , additionally for each user had their own different class such as plantlist and collection. For different userID and username in community will display in different form by different name , image and more.



Figure 3.3.3 Figure of realtime database structure of application for post

Figure 3.3.3 shows the example list of post had been created from the list shows the comment list , description of post , postKey , picture of post, time of post published , title and finally user id of the user.



Figure 3.4 Figure of block diagram

From figure 3.4 shows figure entire system working, mobile phone was used by user for view and operating, mobile phone in this project it is the core for design and front end. Then database was in charged to store the information such as user authentication, plant list, community into the database. The example flow of operation will be as below, the user use phone to sign in or register as the new account and the information of user will be stored in the database, and after done of storing the mobile phone will lead to another activity.

From there the user able to add information of plant user currently have , join discussion of community or even play game in the mobile phone. For plant list , authentication and community information all will be stored in the database for future day use. Lastly user able to remodify his information and the update of information will be updated to the database.





Figure 3.5.1 class diagram for succulent management

# **CHAPTER 4**

# 4. 1 Preliminary Work

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Password     Log IN     Or     Or     Forget Password     C O E	SIGN IN SIGN		Username		Daniel ley     danieltey2014@gm     Assignment Help     assignmenthelperso	ill.com <b>er</b> is2020@gmail.com
Or     CREATE ACCOUNT       G     Forget Password       < O =	Password Log IN		Password		daniel rey danieltey2000@gm CHEE LEONG TE danieltey2014@1ut	ail.com Y ar.my
	Or G Forget Passwor	d			To continue, Google wil email address and profi SUCCULEARNER. Befor review its privacy policy	I share your name, le picture with e using this app, and terms of service.
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Figure 4.1.1

Figure 4.1.2

Figure	4.1.3	
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## The interface of Sign in , Register and Log in by Google

Firstly, when application is fresh installed user is required to log in or register as a account as figure 4.1.1 and 4.1.2 shown. For google user is not required to proceed with register phase user with google able to directly sign in their account by sign in from google as figure 4.1.3 shows.

01:01 🕑 🕒		ŭ ₩ ⊜ ''' Ω	01:06 🕲 🕲	0 18 a al 0
MY SUCCL	JLENT	+	SUCCULEARNER	
		$\sim$		
	Plant Name : plant			
	Plant Type : Echeveria		N994	
	Task: 14/8/202 🍐	🌞 🧕	2042	
144 AT	Plant Name : camella			
	Plant Type : Aeonium	•		
	Task: 23/8/202 🍐	🌞 🧕	Plant Name:	
			Plant Type: Aeonium	•
			Reminders	
			Water Level :	
			Sunlight Level :	Ħ
			Fertilizer Level :	
			ADD	
My Plant	e o d	)		
	0	≡	< 0	$\equiv$

Figure 4.1.4 Figure 4.1.5

Figure of Main Page and Add Plant Activity

After sign in of account if user had exist account will display their data which been passed to firebase before and display in the main activity as figure 4.1.4 shows. If user would like to add a new item add activity page will be redirected as figure 4.1.5 shows and add of new plant will display immediately in the main page.

#### **CHAPTER 4**



Figure 4.1.8

Figure of Update Activity

If user had clicked on more button as figure 4.1.6 shows alert dialog will be shows up which allow user to choose update and delete function. When update function is pressed it will redirect to update activity as figure 4.1.7 and user required to update everything and press on add button to update the data. Then change of item list will be display in list immediately.



Figure 4.1.9 Figure 4.1.10

Figure of delete function

When user planned to delete the item a warning dialog will shows up to ensure user had not accidentally clicked on it and delete the item. There are two condition if user clicked on cancel there will no action been done, but if user clicked on delete the item from list will be deleted and data will be update on database as well.



Figure 4.1.11

Figure of plant information and instruction

When user pressed on information icon from main page depend on different type of plant type different instruction and idea will be provided to user as figure 4.1.11 shows which give user some knowledge and idea method to take good care of plant.



Figure of min game activity

From the figure shows mini game activity, once the activity had been initialized the service of pet simulator will be created from onCreate. Next for every few second the water and fertilizer value of plant will be decreased and water and fertilizer value which stand for health status of the plant. Next once plant had reach value below of 100 the icon of plant will change as figure 4.1.1.13 shows. Then notification of plant is unhealthy alert will be shown, as figure 4.1.14.

3:22 🔮 🖻	a 😰 🖘 🔠 al al 14% 🖻				3:24 🔮 🖪	10	🗙 🖘 🖓 al al 14% 🖻
MY SUCCULENT		3:24 Tue, Apr 5	0.000	\$ ﷺ at al 14% ₤	MY SUCCI	JLENT	
Fertilizer:452	Thirsty:60	Device control     Device control     Succulearner     Your Succulent is dying     Super fast chargin     28° in Kampar soo	Mec g! rg	dia output	Fertilize	r.0	Thirsty:0
GIVE FERTI	LIZER		Notification :	settings Clear	Click The P	OT TO REST	eart the Game
Came	0 0	N	/Y MAXIS   Digi			Game	0 0
< 0		<	0	Ш	<	0	111
Figur	e 4.1.15		Figure 4	.1.16		Figu	re 4.1.17

Figure of min game activity (continue)

The figures shows the unhealthy condition of plants figure 4.1.15 shows the example of plant is dying and figure 4.1.16 shows the notification to inform user that the plant is unhealthy and need to take action immediately. If the action do not take by the user the value of water and fertilizer will be 0 and user required to click on the pot for restart of game.



Figure of explore activity

The figures shows the example of explore activity, from the figure of 4.1.18 shows there are add post and available list from the interface. The image, title of the post will be listed in the interface once the user had clicked on the post it will redirect to another activity as figure 4.1.19. Which will show the detail of post such as title, image, description of post and date of post published. Additionally user is allowed to add comment, like figure 4.1.19. The comment will be published into the firebase once user had clicked in the add comment button. For each comment had been published will be shows in a list form as figure 4.1.19 shows.



Figure 4.1.20

Figure of explore activity (continue)

If user do not add comment and pressed on the add comment button the toast message will be shown as figure 4.1.20 to inform user insert something in the comment box for publish. Next for every comment added from individual will awarded 2 community points and credit in the personal account. For every user level of badge will be display as figure 4.1.21 for prove of contribution to community. On the other hand, there a slightly different for owner of post and guest as figure 4.1.19 shows the example of non owner of post solve button will be invisible by the user, for owner of the post as figure 4.1.21 solve button will be displayed and once user had clicked on the button the post will be deleted from the application and firebase as the issue or post had been solved.



Figure of personal setting activity

Figure 4.1.22 and 4.1.23 shows the personal setting activity, there are several function in this activity page such as change of personal image, add of collection image, delete collection image, progress of community point and lastly password change for the user. Operation for change profile picture will be trigger once user clicked on the camera icon for switch of image, and external image selector will be pop out to let user select the image. After choosing of image user click on save button as figure 4.1.22 shown the image will be save in firebase. Next collection image will be display based on user had saved image if user willing to add more image for their personal collection user are allowed to add image by pressing add icon from figure 4.1.22 shows and proceed with adding image. Once image had been selected toast message will be display to inform user image had been uploaded as figure 4.1.23 shows the new image had been added.



Figure 4.1.24

Figure 4.1.25

Figure of change password

Figures shows from above showing once user had clicked on the setting button from personal setting activity, from figure 4.1.24 shows it is required user to insert the actual email address of user registered and the email will be sent into the user email inbox for change of password. Next once reset button had been pressed the account will be log out for further step of reset password.



Figure of change password step (continue)

User is required to click on the link provided from firebase for change of password next user is required to insert a new password for further account log in. Figure 4.1.27 shows the example of password had been changed by user while user had done insert password. Lastly user able to insert the new password and email to log in.

# **Chapter 5**

# 5.1 Blackbox Testing

No	Test Case	Function Name	Action Needed	Reason(s) for Non- Achievement
1	addPlantButton	addPlant() Initialize to another activity to add plant property	Pass	
2	returnButton	ReturnButtton() Back to plantList Interface	Pass	
3	addButton	addButton() Add Plant item to firebase	Pass	
4	addWCalander	wCalander() Add Watering Date property for reminder	Pass	
5	addSCalander	sCalander() Add Sun Bathing Date property for reminder	Pass	
6	addFCalander	fCalander() Add Fertilizer Date property for reminder	Pass	
7	plantTypeButton	addType() Select Type of Plant from combo box	Pass	

**Plant Management Module** 

8	infoButton	Holder.info() Show of plant property based on list of item clie	Pass	
9	moreButton	Display dialog of update and delete option	Pass	
10	DisplayPla ntList	FirebaseRecyclerOptions. Builder <plant>.build() Display all plant list available in database</plant>	Pass	
11	uploadFile	uploadFile() mainly upload all image, name, reminder date, type of plant into firebase	Pass	
### Mini Game Module

No	Test Case	Function Name	Action Needed	Reason(s) for Non- Achievement
1	Provide Fertilizer	giveFood() provide additional value for fertilizer variable	Pass	
2	Provide Water	giveWater() provide additional value for water variable	Pass	
3	Check Plant State	manageState() Change of image , value and notification content while state had changed	Pass	
4	Send Notification	Send() Send of notification while state had changed or unhealthy	Pass	
5	Run of service	Run() Running of services from behind of application for further update	Pass	
6	Create of service	onServiceConnected() Initialize of service while activity start	Pass	
7	Dismiss of service	onServiceDisconnected() hold of service while activity stop	Change of disconnect method while ondestroy and notification redirect	Complex algorithm required and minor bug of onDestroy and onResume disconnect of service is still finding

### **Community Module**

	Test Case	Function Name	Action	Reason(s) for Non-
No			Needed	Achievement
1	addPost	iniPop()	Design a	Still looking for a
		initialpopup dialog for sharing	more	better interface
		post detail from user	pleasing	idea to implement
			interface	in the system
			for	
			dialog	
2	Click on list	ItemView.onclick()	Pass	
	of post	This function help to identify		
		different post id and different		
		content of post into the post		
		detail		
3	Add	commentAdd()	Pass	
	com	this button use to save comment		
	ment	of user into database		
4	SolveButton	solve()	Pass	
		Delete of post from the firebase		
5	Retrieve	recycleViewComment()	Pass	
	Comment	Retrieve of all published		
		comment based on different post		
6	Retrieve	recyclceView.setadapter(postAd	Pass	
	post from	apter)		
	firebase	Retrieve all value from firebase		
		and display in recycleView		

### Personal and Setting Module

No	Test Case	Function Name	Action	Reason(s) for
			Needed	Non-
				Achievement
1	badgepoint	badegePointCategory()	Pass	
	category	differentiate the badge level of		
		personal based on point		
2	addCollection	addCollection()	Pass	
		add of image of collection		
3	listCollection	firebaseReecyclerOptions.buil	Pass	
		der <collection></collection>		
		Created to initialized saved		
		collection image from		
		database		
4	changeImage	addImageButton()	Modification	Exisxting of
		click to change user profile	of funciotn	minor bug that
			on bug and	had not found
			find out the	what the issue
			bug	is.
5	saveBuxtton	saveButton()	Pass	
		Click to confirm save user		
		profile		
6	logOutButton	LogOut()	Pass	
		Log out from current user		
7	changePasswo	Setting()	Pass	
	rd Setting	Created to change individual		
		nassword of user		
8	Reset	resetPassword()	Pass	
	initialized	Call out of resetpassword		
	1	function and reset password		
		runetion and reset pussword		

### 5.2 Survey questionnaire

Refer to Appendix 2 for full detail of data had been collected for this project. There are total of 20 respondents randomly chosen from class and willing to participate the survey after use of application.



#### Figure 5.2.1

From the survey shows, shows that there are three quarter of participant had plantation in their living area. This shows that, high percentage of people is required to take care of their plant.



Figure 5.2.2

From the study above shows majority of 95% percent of people are using reminder in their daily basis. Hence reminder is important for peoples in daily for remind for their task.

Do you use any application related to plant ? 20 responses



### Figure 5.3.3

Most people from the survey have use application related to plant for taking care of their plant from figure 4.3.1 is showing a lower percentage of having plant in their living area might because of moving out from home town to campus cause student unable to bring their plant to the hostel.



What feature you use the most for plant management or other management system 20 responses

### Figure 5.3.4

From the figure result shows that most people had use notification reminder and list management the most for management application. From this shows that this 2 function is highly important for people while managing their things in daily.





#### Figure 5.2.5

Based on the result shows most people having problem of forget of daily task for planting, overwatering for plant, do not understannd what is required by the plant. From above show this 3 issue is what major of people facing.



How useful do you think Succulearner is ? 20 responses

### Figure 5.2.6

After use of application most people providing a good respond regarding to the application.

### Figure 5.2.7

From the graph above shows that most people think that the design of application is easy and nice design which shows it meet satisfaction of user for front end part. Next there are minority of people think that the application is complicated and hard to understand by user.

Please rate features of plant management 20 responses



### Figure 5.2.8

Feature of application is giving a high positive respond and shows that most participant is satify with the functions and application developed.

#### **CHAPTER 5**



Please rate features of mini game (plant living simulator) 20 responses

### Figure 5.2.9

Feature of application is giving a low positive respond and shows that some participant is satify with the functions and majority of participant is giving moderate rating for this function.



Please rate features of community discussion and badge system 20 responses

#### Figure 5.2.10

From the result for community discussion is providing a high positive result toward community discussion and badge system. This shows that community, discussion and badge system did help the members to their problem.

Do you faced any error from the application if yes please describe the problem in detail 20 responses



### Figure 5.2.11

There are showing high error mistake of log in password is not hidden shows in the graph and several small issue of application had been stated as the graph shows.



Do you think the application is useful and overcome your problem in plant nursery ? 20 responses

### *Figure 5.2.12*

The usefulness of application had achieve 100% from all participant shows that the application did really help to overcome the problem that been facing by participant while nursering their plant.



What is your rating to overall application 20 responses

### Figure 5.2.13

The rating of application acquire four over five from all participant and the respond is high positive rating for overall of application functionalities and performance.

# Would you like to recommend or leave any comment to this application (Succulearner) 20 responses

#### (respond from participant)

If possible, create more features for this apps improvement in mini game Please develop artificial intelligent diagnose instead of manual discussion in community have feature such as inbox in future create a bigger community group with different function and features able to make more improvement in future day make improvement in mini game part fix it the bug and everything is okay make more variety for reminder make more task and challenge for mini game need make improvement for crash of explore No make changes for password part make the design easier make more reward method for community and benefit make the badge system better and bring more community to be active no issue no extra for mini game community is helpful

From above shows the resopond in summary there are several participant suggest to had a better feature in community which aim to encourage more members to help each other and some participant is providing AI method as a alternative way for diagnose of plant. In addition, some of the participant suggest to change the feature of mini game or make enhancement.

### **CHAPTER 6**

### Conclusion

In conclusion the proposed project is personal use-based plant nursery platform, the purpose of this application is to help more succulent learner and more potential gardener or children get to know more about plants. The application aim to bring contribution for gardener to manage their succulent with more convenient method.

The problem been facing by related user which included are user will always forget the duty need to be done and work with ineffective way. The second problem of user faced it is no guidance and instruction given from expert it is hard to learn by user themselves. And some community less active.

The main function of applications is to provide reminder system to notify user with different to-do list need to done related to plant, community group which in help for every user have discussion and plant badge system which use to help and provide a honour for contributors.

In short, the application review (NatureID, PlantNote, PlantCare) core and major functionalities will planned to implement in the system. The main core application such as create, retrieve, update and delete will be developed in this application as main of the application functionalities. There will be 2 special feature techniques will be included in application which is discussion and mini game which been develop that aim to provide a high level active for each member in community and reward and offer a badge for contributors for their effort in community. Creation of minigame is aim to attract more children and also cultivate responsibility of user to feed their pet.

There are several weakness of application such what had been informed in black box technique and comment retrieve from survey. The reason of non achieve several is due to time constraint and flaws that still not to be done.

In the future day of development for this project will plan to develop a Artificial Intelligent diagnose for plant illness. So that can overcome of user problem with faster, robotic and efficient method. In short there are several flaws of application in system that still do not got fix will be resolve but it takes time for the issues, hence the project still remain flaws.

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## Appendix 1 : Blackbox Testing Forms

### **Plant Management Module**

No	Test Case	Function Name	Inputs	Expected Output	Actual Output	Action Needed
1	addPlantBu tton	addPlant() Initialize to another activity to add plant property	Button Click	Move to another activity	Move to another activity	Pass
2	returnButto n	ReturnButtton() Back to plantList Interface	Button Click	Return to addplant interface	Return to addplant interface	Pass
3	addButton	addButton() Add Plant item to firebase	Insert information of plant and add reminder for notification	Notification , property of plant information display in interface	Notification , property of plant information display in interface	Pass
4	addWCalan der	wCalander() Add Watering Date property for reminder	Select date from calander	Set of notification based on date selected	Set of notification based on date selected	Pass
5	addSCaland er	sCalander() Add Sun Bathing Date property for reminder	Select date from calander	Set of notification based on date selected	Set of notification based on date selected	Pass
6	addFCaland er	fCalander() Add Fertilizer Date property for reminder	Select date from calander	Set of notification based on date selected	Set of notification based on date selected	Pass
7	plantTypeB utton	addType() Select Type of Plant from combo box	Select item from combo box	Display the plant type in the interface	Display the plant type in the interface	Pass

8	infoButton	Holder.info() Show of plant property based on list of item clie	Button Click	Redirect to plant info activity	Redirect to plant info activity	Pass
9	moreButton	Display dialog of update and delete option	Select of Update or Delete	Update interface initiate or delete will be extecute	Update interface initiate or delete will be extecute	Pass
10	DisplayPla ntList	FirebaseRecyclerO ptions.Builder <pla nt&gt;.build() Display all plant list available in database</pla 	Output of result	Retrieve plant information from firebase and in list form	Retrieve plant information from firebase and in list form	Pass
11	uploadFile	uploadFile() mainly upload all image , name , reminder date , type of plant into firebase	Execute of addButton	Post of all information into firebase	Post of all information into firebase	Pass

### Mini Game Module

No	Test Case	Function Name	Inputs	Expected Output	Actual Output	Action Needed
1	Provide Fertilizer	giveFood() provide additional value for fertilizer variable	ButtonClick	Add value of fertilizer to plant	Add value of fertilizer to plant	Pass
2	Provide Water	giveWater() provide additional value for water variable	ButtonClick	Add value of water to plant	Add value of fertilizer to plant	Pass
3	Check Plant State	manageState() Change of image , value and notification content while state had changed	Refresh of application state	Based on different plant condition and push notification	Based on different plant condition and push notification	Pass
4	Send Notification	Send() Send of notification while state had changed or unhealthy	Change of plant state	Send notifications to user to inform the plant condition	Send notification s to user to inform the plant condition	Pass
5	Run of service	Run() Running of services from behind of application for further update	Based on time passed	Decrease of water and fertilizer value	Decrease of water and fertilizier value	Pass
6	Create of service	onServiceConn ected() Initialize of service while activity start	Initialize of activity	Create service for Run() service execute and initialize	Create service for Run() service execute and initialize	Pass

				value of water and fertilizer	value of water and fertilizer	
7	Dismiss of service	onServiceDisco nnected() hold of service while activity stop	While onDestroy() and onPause() called	running of service while application remove and notification pressed	remove of service while application remove and notification pressed	Change of disconnect method while ondestroy and notification redirect

### **Community Module**

	Test Case	Function Name	Inputs	Expected	Actual	Action
No				Output	Output	Needed
				_	_	
1	addPost	iniPop()	Button Clicked	Pop out of	Pop out of	Design a
		initialpopup dialog for sharing post		dialog and	dialog and	more
		detail from user		show	show	pleasing
				information	information	interface
				neeed to be	neeed to be	for
				filled in the	filled in the	dialog
				dialog	dialog	8
				8	8	
2	Click on list	ItemView.onclick()	itemList Clicked	Redirect of	Redirect of	Pass
	of post	This function halp to identify		specific post	specific post	
		different post id and different		with specific	with specific	
		content of post into the post detail		content and	content and	
		content of post into the post detail		comment	comment	
3	Add	comment <b>A</b> dd()	Button Clicked	Add text	Add text	Pass
5	com	this button use to save comment of	Dutton Cheked	content had	content had	1 455
	ment	user into database		type by user	type by user	
	ment			and save in	and save in	
				firebase	firebase	
				meeuse	meeuse	
4	SolveButton	solve()	Button Clicked	Delete of	Delete of	Pass
		Delete of post from the firebase		post detail	post detail	
				only valid	only valid	
				for owner of	for owner of	
				post	post	
5	Retrieve	recycleViewComment()	Retrieve comment	List out all	List out all	Pass
	Comment	Retrieve of all published comment	information from	of the	of the	
		based on different post	firebase	comment	comment	
		I I I I I I I I I I I I I I I I I I I		detail in	detail in	
				firebase	firebase	
6	Retrieve	recyclceView.setadapter(postAdap	Retrieve post	List out all	List out all	Pass
	post from	ter)	information from	of the post	of the post	
	firebase	Retrieve all value from firebase	firebase	as item from	as item from	
		and display in recycleView		firebase	firebase	

Personal and Setting Module

No	Test Case	Function Name	Inputs	Expected Output	Actual Output	Action Needed
1	badgepoint category	badegePointCategory() differentiate the badge level of personal based on point	add value of badge point	Increase of badge point	Increase of badge point	Pass
2	addCollection	addCollection() add of image of collection	Button Click	Add of image of plant into the collection and firebase	Add of image of plant into the collection and firebase	Pass
3	listCollection	firebaseReecyclerOptions.bu ilder <collection> Created to initialized saved collection image from database</collection>	Retrieve of data from database	Retrieve all collection images from firebase	Retrieve all collection images from firebase	Pass
4	changeImage	addImageButton() click to change user profile	Button Click	Change of profile picture from current	Extist of small bug of default image but function work well	Modifica tion of funciotn on bug and find out the bug
5	saveBuxtton	saveButton() Click to confirm save user profile	Button Click	Save of userimage and save in firebase	Save of userimage and save in firebase	Pass
6	logOutButton	LogOut() Log out from current user	Button Click	Log out user account and back to login activity	Log out user account and back to login activity	Pass
7	changePassword Setting	Setting() Created to change individual password of user	Button Click	Redirect to password reset page	Redirect to password reset page	Pass

8	Reset initialized	resetPassword()	Insert correct	Reset of	Reset of	Pass
		Call out of resetpassword	email address of	password in	password	
		function and reset password	user	the mobile	from	
				application	firebase	
					official and	
					email	

## **Appendix 2 : Survey Questionnaire**

		Accepting responses
Summary	Question	Individual
Please insert your email add 20 responses	dress from below	
laimin@1utar.my		
huaizhou213@1utar.my		
xiaoqing@1utar.my		
tehboonhin@1utar.my		
jianchan18@1utar.my		
lvk.1302@1utar.my		
Yap Hao Yih		
norhidayahh@utar.edu.my		
karming2012@1utar.my		
lease insert your email ad	dress from below	•
lease insert your email ad 0 responses jinwang1956@1utar.my	dress from below	•
lease insert your email ad 0 responses jinwang1956@1utar.my liewzhilei@1utar.my	dress from below	
lease insert your email ad 0 responses jinwang1956@1utar.my liewzhilei@1utar.my lohweichee@1utar.my	dress from below	
lease insert your email ad 0 responses jinwang1956@1utar.my liewzhilei@1utar.my lohweichee@1utar.my Tan Xing Yun	dress from below	
lease insert your email ad 0 responses jinwang1956@1utar.my liewzhilei@1utar.my lohweichee@1utar.my Tan Xing Yun henrytan0418@1utar.my	dress from below	
lease insert your email ad 0 responses jinwang1956@1utar.my liewzhilei@1utar.my lohweichee@1utar.my Tan Xing Yun henrytan0418@1utar.my peiyilee9@1utar.my	dress from below	
lease insert your email ad o responses jinwang1956@1utar.my liewzhilei@1utar.my lohweichee@1utar.my Tan Xing Yun henrytan0418@1utar.my pelyilee9@1utar.my Ong Wei Qi	dress from below	
lease insert your email ad o responses jinwang1956@1utar.my liewzhilei@1utar.my lohweichee@1utar.my Tan Xing Yun henrytan0418@1utar.my peiyilee9@1utar.my Ong Wei Qi weiqiwang08@1utar.my	dress from below	
lease insert your email ad 0 responses jinwang1956@1utar.my liewzhilei@1utar.my lohweichee@1utar.my Tan Xing Yun henrytan0418@1utar.my peiyilee9@1utar.my Ong Wei Qi weiqiwang08@1utar.my jimmylamkn@1utar.my	dress from below	

jimmylamkn@1utar.my

cyc930131@1utar.my

secret.71520@1utar.my

Please insert your name from below

20 responses

Lai Min

yeap huaizhou

Chua Xiao Qing

TEH BOON HIN

Chan Jian Bin

LEONG VERN KEI

haoyihyap@1utar.my

Norhidayah Binti Hamsah

ONG KAR MING

Please insert your name from below 20 responses CHANG JIN WANG Liew Zhi Lei Loh Wei Chee tanxingyun0606.yt@1utar.my TAN TZE HENG Lee Per Yi weiqiwang08@1utar.my ONG Wi Qi Lam Keat Nam





Bachelor of Information Systems (Honours) Business Information Systems Faculty of Information and Communication Technology (Kampar Campus), UTAR







Would you like to recommend or leave any comment to this application (Succulearner) 20 responses

If possible create more features for this apps

improvement in mini game

Please develop artificial intelligent diagnose instead of manual discussion in community

have feature such as inbox in future

create a bigger community group with different function and features

able to make more improvement in future day

make improvement in mini game part

fix it the bug and everything is okay

make more variety for reminder

Would you like to recommend or leave any comment to this application (Succulearner) 20 responses

make more task and challenge for mini game

need make improvement for crash of explore

No

make changes for password part

make the design easier

make more reward method for community and benefit

make the badge system better and bring more community to be active

no issue

no

) responses	
No	
make char	nges for password part
make the c	design easier
make more	e reward method for community and benefit
make the b	padge system better and bring more community to be active
no issue	
no	
extra for m	nini game
community	y is helpful

(Project I / Project II)

Trimester, Year: Y3 T3	Study week no.: 1&2	
Student Name & ID: Tey Chee Leong		
Supervisor:Ts Dr Wong Pei Voon		
Project Title: Succulent Plants Nursery Management System		
1. WORK DONE		
Arrangement of past project information and document, change of module with discusison		
2. WORK TO BE DONE		
Start implementing mini game module		
3. PROBLEMS ENCOUNTERED		
Found out augment reality is time consuming and change of module with supervisor discussion		
4. SELF EVALUATION OF THE PROGRESS		
Everything was going fine		

wong

Cer

Student's signature

Supervisor's signature

(Project I / Project II)

Trimester, Year: Y3 T3	Study week no.: 3&4	
Student Name & ID:Tey Chee Leong		
Supervisor:Ts Dr Wong Pei Voon		
Project Title: Succulent Plants Nursery Management System		

1. WORK DONE

Developing mini game module , finding model , method to implement

2. WORK TO BE DONE

Running of mini game service

**3. PROBLEMS ENCOUNTERED** 

No idea of run of background service and done finding of image need to be use for the application

4. SELF EVALUATION OF THE PROGRESS

Finding of module feature what is required

wong

Supervisor's signature

Cer

Student's signature

(Project I / Project II)

Trimester, Year: Y3 T3	Study week no.: 5&6
Student Name & ID:Tey Chee Leong	
Supervisor:Ts Dr Wong Pei Voon	
Project Title: Succulent Plants Nursery Management System	

#### **1. WORK DONE**

Done of service and entire module for mini game

#### 2. WORK TO BE DONE

Find of community module idea

### **3. PROBLEMS ENCOUNTERED**

No problem while developing

### 4. SELF EVALUATION OF THE PROGRESS

Had complete in build of mini game module and found out method to develop and apply service in the mobile application.

won

Supervisor's signature

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Student's signature

(Project I / Project II)

Trimester, Year: Y3 T3	Study week no.: 7&8	
Student Name & ID: Tey Chee Leong		
Supervisor:Ts Dr Wong Pei Voon		
Project Title: Succulent Plants Nursery Management System		
1. WORK DONE		
Design sample and prototype drawing for community and small developing process such as create of post into the firebase		
2. WORK TO BE DONE		
Retrieve of post and discussion is allowed	by members.	
3. PROBLEMS ENCOUNTERED		
No problem for design and prototype part and facing small exception error		
4. SELF EVALUATION OF THE PROG	RESS	
Finding of community idea from external source and design of module.		

wong

Cer

Supervisor's signature

Student's signature

(Project I / Project II)

Trimester, Year: Y3 T3	Study week no.: 9&10
Student Name & ID:Tey Chee Leong	
Supervisor:Ts Dr Wong Pei Voon	
Project Title: Succulent Plants Nursery Management System	

#### **1. WORK DONE**

Done of retrieve information, discussion, and solve of post.

#### 2. WORK TO BE DONE

Plan for personal setting and badge system for contributors.

### **3. PROBLEMS ENCOUNTERED**

No problem

### 4. SELF EVALUATION OF THE PROGRESS

Find out method to implement community to retrieve, add comment and delete of post for members.

wong

Supervisor's signature

Ŋ

Student's signature
# FINAL YEAR PROJECT WEEKLY REPORT

(Project I / Project II)

Trimester, Year: Y3 T3	Study week no.: 11&12
Student Name & ID:Tey Chee Leon	g
Supervisor: Ts Dr Wong Pei Voon	
Project Title: Succulent Plants Nursery Management System	

#### **1. WORK DONE**

Done of personal setting, reset password and badge system.

#### 2. WORK TO BE DONE

Display of badge for each members based on badge point

**3. PROBLEMS ENCOUNTERED** 

No issue

#### 4. SELF EVALUATION OF THE PROGRESS

Done of developing the modules and check for any issue in it.

wong

Supervisor's signature

Cey

Student's signature

## FINAL YEAR PROJECT WEEKLY REPORT

(Project I / Project II)

Trimester, Year: Y3 T3	Study week no.: 13&14
Student Name & ID:Tey Chee Leong	
Supervisor:Ts Dr Wong Pei Voon	
Project Title: Succulent Plants Nursery	Management System

### **1. WORK DONE**

Done of design badge system and arrangement and make of report

## 2. WORK TO BE DONE

#### **3. PROBLEMS ENCOUNTERED**

No issue

#### 4. SELF EVALUATION OF THE PROGRESS

Done of design the entire project and ready for submitting.

wong

Supervisor's signature

Cer

Student's signature

## Poster





SUCCULENT PLANT NURSERY MANAGEMENT SYSTEM TEY CHEE LEONG 1802375

**UNIVERSITI TUNKU ABDUL RAHMAN** 



#### INTRODUCTION

Develop of mobile application which aim to provide better user experience and high effective management system for plant lover.

#### OBJECTIVE

- Develop an account personalized plant listing and task
- To Develop a community discussion about plants
- To Develop augment reality for visualized succulent plants for user
- To Develop a mini game-based tutorial for plantation guide

#### **METHODOLOGY - WATERFAL MODEL**

- First Phase Planning , data colect
- Second Phase -Design and Implementation, System Design, Modules Modify
- Third Phase Testing and Development , Coding and Refine
- Forth Phase Manitain

#### CONCLUSION

- Community point and badge for individual user
- Community discussion about plants
- Account personalized plant listing and task
- Mini game-based for plantation

## FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

#### **ADVISOR: TS DR WONG PEI VOON**

# **Turnitin Report**

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(iii) Matching taxts in continuous block must not exceed 8 words		
(iii) matching texts in continuous block		

Note: Parameters (i) – (ii) shall exclude quotes, bibliography and text matches which are less than 8 words.

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Based on the above results, I hereby declare that I am satisfied with the originality of the Final Year Project Report submitted by my student(s) as named above.

wong

Signature of Supervisor

Signature of Co-Supervisor

Name: WONG PEI VOON

Name: \_\_\_\_\_

Date: \_\_\_\_\_15/4/2022

Date: \_\_\_\_\_

Bachelor of Information Systems (Honours) Business Information Systems Faculty of Information and Communication Technology (Kampar Campus), UTAR



UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF INFORMATION & COMMUNICATION

TECHNOLOGY (KAMPAR CAMPUS)

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Student Name	Tey Chee Leong
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$\checkmark$	Acknowledgement
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	review
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