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A Home Gardening Guidance System

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Abstract: Home gardening defines the cultivation of flowers, fruits, vegetables, or ornamental plants for the personal use of the owner of a lot. However, not many people have green fingers or know gardening. Hence, if they proceed with the gardening, they might fail to grow a plant. Therefore, Home Gardening Guidance Mobile Application was created to guide the community in gardening practices and learn more information related to gardening. The object-oriented approach is chosen to design the system. The software used to develop the proposed application is Unity Hub. C# programming used as a programming language to develop the proposed application. This application is expected to help the community who are new or lack knowledge regarding home gardening to conduct gardening all by themselves by providing videos related to gardening, requirements of plants and significant dates for each plants. Moreover, this mobile application supports the people in the community to eat healthy by growing their vegetables in their garden.

Keywords: Home Gardening, Mobile Application, planting, vegetable

1. Introduction

Home gardening can be said as a cultivation of fruits, vegetables, flowers, or ornamental plants for personal use of the owner or tenants [1]. A plant is actually a living thing that grows in water, in earth, containers or on other plants. Besides that, it usually has leaves, stem roots, and flowers, and sometimes it produces seeds. Home gardening also can be termed as a community garden where the space is given without any charge for which the space for the individuals to raise produce for their personal use, or for the non-profit groups to raise produce to donate to individuals or charitable organizations. The home gardening impacts a lot of benefits for an individual. Home gardening can be a great hobby for an individual as at the end it going to rewards the person who spend their time and energy on it. It is also true that some individuals find the activity of home gardening relaxing and stress-relieving [2]. Besides that, home gardening also allows a person to earn money. An individual also able to sell the excessive

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fresh vegetable or fruits from their own home garden to others. Moreover, a home garden also gives an individual instant access to fresh produced vegetable or fruits, so that they're not forced to go to the grocery store to stock up their vegetable especially during the pandemic. They also get to save their time, money, energy and secure their health rather than driving somewhere else to buy the vegetables or fruits.

Currently, the people in the community look up on the internet or ask the people around them who have experience in gardening like their neighbors, relatives or they even consult an experienced gardener if they want any information regarding the home gardening or indoor planting. Some even go to workshop regarding indoor planting by paying money. This is because every plant needs its own requirements, and it may vary with one another. Right from the type of soil, the type of fertilizer a plant, type of planting that a plant need is unique from one another. By the above facts, it is very clear that guidance while planting is significance to produce a healthy plant. Hence, it needs utmost care and guidance to carry out a planting process and taking care of a plant in a home garden.

In this project the investigation is conducted in a non - profit organization named The Selangor Gardening Society. The investigations are held to know the existing process of the members of The Selangor Gardening Society on approaching the people in the community to plant a tree or plant. By the results of the investigation, it is clearly proven that the members of The Selangor Gardening Society have talks on various plants or groups of plants to basic gardening and landscaping to even floral workshops and various number of events to guide the people in the community to spread their knowledge on planting and taking care of a tree or a plant. The committee of the organization tries to arrange an activity for every month of the year and sometimes twice in a month.

Hence, the proposed project Home Gardening Guidance Application tend to solve these problems that a common person face while involving in home gardening or indoor planting. The proposed project tends to contain the required information about home gardening in a single application. Moreover, the reminders/notification from the proposed project tends to remind the users to derive their attention on their plants. Besides that, the proposed project also acts as complete guide for an individual until they get the product from the plant.

This article is organized into five sections. The first part is an introduction describing the context of the proposed project. The second section describes the relevant work. In the third section, the methodology is explained. The user interface, result and discussion of this system is described in the fourth section. In the last section, a conclusion of the proposed system is given.

2. Related Work

2.1 The Case Study: Home Gardening

Home gardening also can be termed a community garden where the space is given without any charge for the area for the individuals to raise for their personal use or for the non-profit groups to raise produce to donate to individuals or charitable organizations. Home gardening impacts a lot of benefits for an individual. Home gardening can be an excellent hobby for an individual as it will reward the person who spends their time and energy on it. It is also true that some individuals find the activity of home gardening relaxing and stress-relieving [2]. Besides that, home gardening also allows a person to earn money. An individual can also sell the excessive fresh vegetable or fruits from their home garden to others.

Moreover, a home garden also gives individuals instant access to fresh produced vegetables or fruits. They're not forced to go to the grocery store to stock up their vegetables, especially during the pandemic. They also get to save their time, money, energy and secure their health rather than driving somewhere else to buy vegetables or fruits. Currently, the people in the community lookup on the internet or ask the people around them who have experience in gardening like their neighbors, relatives, or even consult an experienced gardener if they want any information regarding home gardening or

indoor planting. Some even go to a workshop regarding indoor planting by paying money. People in the community are doing this because every plant needs its requirements, and they may vary with one another. Right from the type of soil, the kind of fertilizer a plant need is unique from one another.

The above facts make it very clear that guidance while planting is significant to producing a healthy plant. Hence, it needs utmost care and guidance to carry out a planting process and take care of a plant in a home garden.

The way of sharing the knowledge on gardening of a non - profit organization named The Selangor and Federal Territory Gardening Society to people who needs help in the community is by conducting talk sessions and various types of activities such as demonstrations and excursions.

The Home gardening Guidance application, which is the proposed project, has a module called the garden. One of the features of that particular module is that it will show the nearby plant nurseries from the users' location using this global positioning system technology. Hence, this technology helps the user find the nearby plant nurseries rather than physically searching it, which will eventually waste their energy and time.

There are several reasons why mobile application technology is apt for building the proposed Home Gardening Guidance Application. Firstly, mobile application technology tends to connect a broader range of people [3]. Hence, the number of community people who use this application as a guide to conduct home gardening will increase. Mobile applications will be a better solution for The Selangor and Federal Territory Gardening Society to increase the number of people interested in gardening rather than talk sessions due to the current pandemic situation. Besides that, Mobile applications tend to store multiple features which the user can personalize [4]. For example, the user can easily change their password and profile picture for their account in the proposed application.

Moreover, since mobile applications have the notification feature, it would be easy to get the user's attention to water the plant or fertilize the plant in the proposed application. Last but not least, the mobile application is suitable for the proposed project because of the enhancement in user interaction. Since The Selangor and Federal Territory Gardening Society conducts events once or twice a month, this feature can be a great way to engage the members and the community interested in gardening.

Three existing mobile applications were studied and analyzed to get more detail to develop and enhance the Home Gardening Guidance Application. The three existing systems are Gardroid Mobile Application, Garden Tags Mobile Application, and Garden Planner Mobile Application. The three existing systems are studied and compared to the features of the proposed system. This includes the modules contained in the Home Gardening Guidance Application which are showed in table 1 below.

Table 1: System's Comparison

Main Function	**Gardening Guide System**			
	Gardroid	**Garden Tags**	**Garden Planner**	**Home Gardening Guidance Mobile Application**
System Type	Mobile application	Mobile Application	Mobile Application	Android application
Login and Registration	No	Yes	No	Yes
Provide information about plants/ vegetables	Yes	Yes	Yes	Yes

Allow to set reminders for water and fertilizer	Yes	No	Yes	Yes

Table 1: (continued)

Suggest planting video as a guide	No	No	No	Yes
Allow the people to communicate with one another	No	Yes	No	No
Suggest nearby plant nurseries	No	No	Yes	Yes

3. Methodology

Methodology can define as a clear outline on how to use the funds and timeline to accomplish the project's objectives [5]. It is also can be said as the significant component in the proposal narrative to bridge the gap between the objectives and the eventual outcome. It is also important to demonstrate the project's feasibility by detailing the experiences and resources that will be drawn upon to carry out the project [5]. This chapter explain the use of prototyping model in this project and the activities that had been carried out in each phase which are planning, analysis, design, implementation and prototype. Table 2 shows the software development and their tasks.

Table 2: Software development phases and their tasks

Phase	Task	Output
Planning	Scheduling the task. Determine the problem, project scope, and objectives.	1. Proposal 2. Gantt Chart
Analysis	Collect and analyze the Data	1. System requirements 2. UML Diagrams 3. Class Diagram 4. Requirements Traceability Matrix (RTM) 5. Flowchart or to-be model (swim lane diagram)
Design	Design the flowchart, database and user interface of the whole application.	1. System architecture 2. Database design 3. User interface design
Implementation	Carry out the testing on the application and rework and repair the errors of the application.	C# programming
Prototype 1	Identify errors and bugs on the application and repair and rework the existing system.	Prototype system
	Repeat the phases from planning phase till implementation phase	
Prototype 2	Detect errors again on the application and rework the existing application.	Prototype system
Presentation	Present the application in front of the Panel.	Final report. Complete application.

Systems Analysis and Design (SAD) can be defined as a broad term for describing methodologies for building a high-quality information system that combines information technology, people, and data to support business requirements [6]. The final output of the analysis and system design can ensure that the detailed description of the system can satisfy the expectation of the stakeholders. A functional requirement describes a system or its component and the functions a software needs to perform. A function can be termed as inputs, behaviour, and outputs [7]. Table 3 depicts the functional Requirement of the Home Gardening Guidance Mobile Application.

4. Analysis and Design

Table 3: Functional Requirements

Module Function	Function	User
Login and registration	• The system shall allow the user to create an account. • The system shall allow the user to login into their respective accounts.	Generic user
Garden	• The system shall allow the user to choose and add the plant or tree that he/she wants to plant. • The system shall allow the user to remove the plant from their garden module. • The system shall remind the user to water and fertilize the plant using the notification and reminders. • The system shall allow the user to water and fertilize the plant once the notification pops up. • The system shall allow the user to see the details of the plant/Tree to plant. • The system shall allow the user to send feedback to the administrator after completing each stage of the plant • The system shall allow the user to show the nearby plant nurseries or garden.	Generic user
Learn Tube	• The system shall allow the user to watch videos of planting process.	Generic user
My Calendar	• The system shall allow the user to monitor the growth of the plant.	Generic user
Plant management	• The system shall allow the admistrator to add, edit, remove the plant details • The system shall allow the administrator to view the number of plants planted	Administrator
Generate Report	• The system shall allow administrator to generate report based on the activities done by the generic users	Administrator
Message	• The system shall allow only allow the administrator to send message to the generic users. • The system shall allow the generic user to read the messages sent by the administrator	Generic user and Administrator

Non-functional requirements (NFRs) explain constraints that might affect how the system or software should complete it [8]. Table 4 shows the non- functional requirements of the Home Gardening Guidance Mobile Application.

Table 4: Non-functional requirements

No	Requirements	Descriptions
1	Performance	• The system should be able for use anytime for 24 hours per day.
2	Operational	• The system needs to be user-friendly. • The system should respond to the user input within 5 seconds. • The system required to be convenient for the administrator to perform CRUD operations • The system needs to support the mobile devices.
3	Localization	• The system should be available in English
4	Security	• The system should only allow the user to access their account.

The user requirements analysis phase searches the user goals and requirements for the technology to provide to the user's needs with ease. Table 5 shows the user requirements for the Home Gardening Guidance Mobile Application.

Table 5: User requirements

No	Descriptions
1.	All the user needs to enter valid Id and password for the Login and registration process.
2.	Administrator should be able to view the report of number of vegetables planted.
3.	Administrator should be able do CRUD process on the plant information.
4.	User should be able to choose and add the plant or tree that he/she wants to plant.
5.	Users should be able to receive notification to water and fertilize the plants.
6.	Administrator should be able to view the feedback given by the user.
7.	User should be able to water and fertilize the plant once the notification pops up.
8.	User should be able to see the details of the plant/Tree to plant.
9.	User should be able to remove the plant from their garden module.
10.	User should be able to see the nearby plant nurseries or garden.
11.	User should be able to view the messages sent by the administrator
12.	User should be able to monitor the growth of the plant.
13	User should be able to watch videos of planting process.
14	Administrator should be able to send the messages to the generic users.

System design can be explained as defining the components, modules, interfaces, and data for a system to meet specified requirements [9]. This process also transfers the proposed system functionality into graphical diagrams according to specific requirements. Moreover, system analysis is the path of approach which identifies the system's performance subject to the assumption and expectation that the system structure is known[10]. Figure 1 shows the Use Case Diagram of Home Gardening Guidance System which is one of the result of the system analysis. There are two actors involve which are administrator and generic user and also several use case involved in the system which are login and logout, monitor the plant, manage my garden, manage plant details, search videos on learning tube, generate report and send notification.

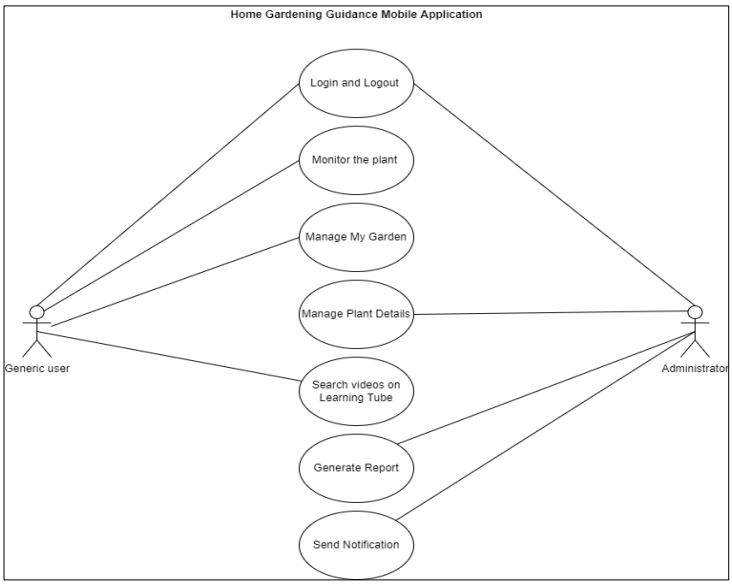

Figure 1: Use Case Diagram of Home Gardening Guidance Mobile Application

Class diagrams are implemented to describe the structure of the proposed system. A class diagram uses Unified Modeling Language (UML) to depict the classes, attributes, operations or methods, and their relationships in the system. Figure 2 display the class diagram of the proposed system where 6 classes which are my calendar, message details, my garden, feedback, plant details and generic user.

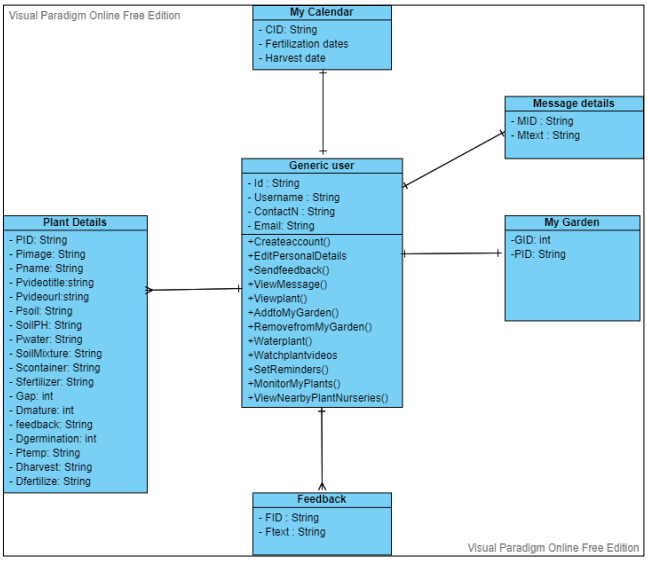

Figure 2: The class diagram of the proposed system

A database schema is an abstract design representing the data stored in a database. A database schema also establishes the organization of data and the relationships between tables of a database. The database schema of the proposed system is as follows:

```
i)     Users(user_id,username, password)
ii)    User_profile(user_id, full_name, email, contact_number, user_level)
iii)   Plant(plant_id,user_id,plantImageData,plant_name,plant_video,
       plantVideoTitle, D_Harvest, D_Fertilize, D_water, D_Germination, D_Mature,
```

```
        S_Mixture, Space, S_PH, Min_Temp, Max_Temp, T_soil, Suitable_P, Suitable_C,
        Suitable_F, P_keyword)
iv)     My_plant(MPID, user_id, is_planted, plant_name, plantImageData, plantID,
        D_water, D_Harvest, D_Fertilize, Start_Date)
v)      Message(MID, user_id, message_text, daytime, message_read)
vi)     Feedback(FID, user_id, feedback_rate, feedback_mes)
vii)    FertilizeFeedaback(FFID, user_id, plant_name, height, rating)
viii)   Harvestfeedback(HFID, user_id, plant_name, height,noofleaves, rating)
```

User interface (UI) design is about creating interfaces focusing on the convenience and interactivity of the user. The User interface primarily builds an interface the user finds uncomplicated and aesthetically pleasing. The user interface can also be termed as the mediator between the user and the system.

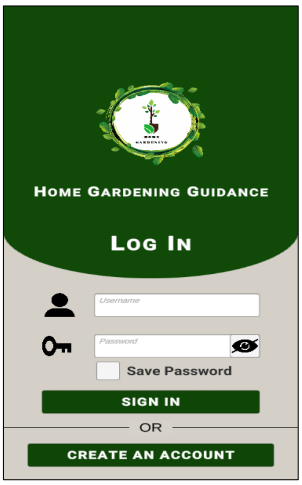

Figure 3: Login page

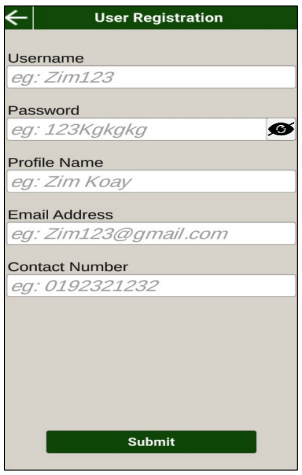

Figure 4: Registration page

Figure 3 shows the user interface design of the proposed system's login page. The generic user and admin will be using the same login page. Figure 4 depicts the registration page of the generic user. The registration page is only restricted for the generic user because the proposed system will only have one administrator.

Figure 5: Generic user dashboard

Figure 6: Admin dashboard

Moreover, figure 5 shows the dashboard of the generic user where the user can select and choose to do multiple activities such as checking the Messages, the My calendar module, learn tube module, garden module and also logout from the session. Figure 6 shows the admin dashboard where the admin can perform multiple activities such as manage plants, write message, generate report.

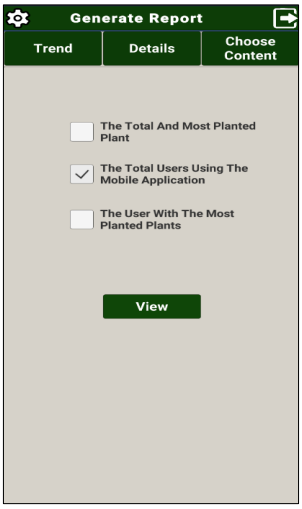

Figure 7: Generate Report page

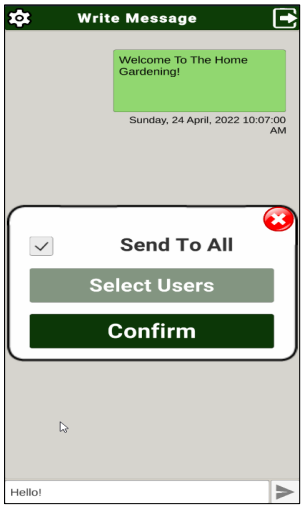

Figure 8: Message page

Figure 7 shows the generate report page where the administrator can select the required contents of the report by just clicking the checkboxes. Figure 8 depicts the Message page where the administrator able to send the message or the announcements to either all the user or selected user.

Figure 9: Garden page

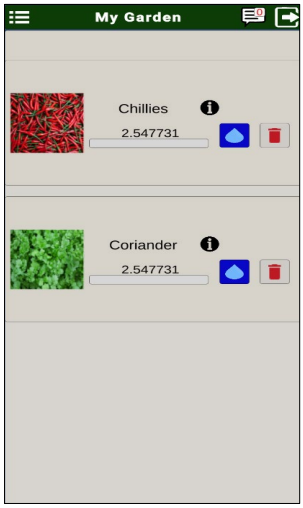

Figure 10: My Garden page

Figure 9 depicts the Garden page where the user gets to do multiple activities such as viewing the plant details, checking the nearby plant nurseries. Figure 10 shows the My Garden page where the system displays the plants that the generic user adds to their My Garden page. The generic user can also remove the plant from their My Garden page by just clicking the remove button.

The Home Gardening Guidance Mobile Application has been tested using test cases for each module. The modules involved in the testing process are the Account Registration and Login module, the Learn Tube module, the My Calendar Module, the Garden Module, the Plant Management Module, the Message Module, and the Generate Report Module. Table 6 shows the functional testing for the Home gardening Guidance Mobile Application for each module.

Table 6: Functional Testing Mobile application

TC_100 Account Registration and Login

Test Case ID	Description	Expected Result	Actual	Pass/Fail
TC_100_01	To check whether the system navigates to the correct scene when click the Create an Account button	The system should navigate the user to the registration scene	The system navigated the user to the registration scene	Pass
TC_100_02	To check whether the user can register without filling out the registration form completely	The system should send a message stating, “Please Fill Up All The Fields.”	The user viewed a popup message stating, “Please Fill Up All The Fields.”	Pass
TC_100_03	To check whether the user can register for an account	The user should be able to create an account	The user has successfully created an account	Pass
TC_100_04	To check whether the user id has already been registered	The system should send a message stating, “Username Already Exists.”	The user viewed a popup message stating, “Username Already Exist.”	Pass
TC_100_05	To check whether the user can log in without filling out entering their login credential	The system should send a message stating, “Please enter your login credential.”	The user viewed a popup message stating, “Please enter your login credential.”	Pass
TC_100_06	To check whether the user can log in to the system	The user should be able to login into the system	The user has successfully logged into the system	Pass
TC_100_07	To check whether the system displays a message when the login is successful	The system should pop up a message stating “Login Successful.”	The user viewed a popup message stating, “Login Successful.”	Pass

Table 6: (continued)

TC_100_08	To check whether the system will restrict login whenever a wrong credential is entered	The system should restrict login when an incorrect credential has been entered	The system restricted the login when an incorrect or no credentials have been entered	Pass
		TC_200 Learn Tube		
TC_200_01	To check whether the system can show all the plant videos from the database	The system should display the list of all the plant videos in the database	The user viewed a list of the plant videos in the database	Pass
TC_200_02	To check whether the user can search a specific plant videos	The system should narrow down plant videos by displaying the plant video related to the user search.	The user viewed a plant video related to their search	Pass
TC_200_03	To check whether the user can search videos with the search field empty	• The user should be able to see all the videos in the database • The system should send a message stating, "No related videos found."	• The user viewed a list of all the plant videos in the database • The user viewed a popup message stating, "No related videos found."	Pass
TC_200_04	To check the result when there is no related plant video with the words entered by the user	• The user should be able to see all the videos in the database • The system should send a message stating, "No related videos found."	• The user viewed a list of all the plant videos in the database • The user viewed a popup message stating, "No related videos found."	Pass
TC_200_05	To check whether the system navigates the user to the correct video on youtube when they click on the thumbnail	The system navigates the user to the correct video on youtube when they click on the thumbnail	The user navigated to the correct youtube video when they clicked on the thumbnail	Pass

Table 6: (continued)

		TC_300 My Calendar		
TC_300_01	To check whether the system can show all the significant activities of the plants	The system should display the list of all the essential activities of the plant with the dates	The user viewed a list of the critical activities of each plant	Pass
TC_300_02	To check whether the system displays the dates of the plant's essential activities even if there is no plant added to the user is My Garden	The system should display a message stating, "Please Add Plants To Your My Garden First."	The message "Please Add Plants To Your My Garden First" was viewed by the user.	Pass
TC_300_03	To check if the user may choose the time when they wish to be reminded.	• The user should be able to select the time for them to be reminded. • The system should send a message stating, "Reminder Already set."	• The user viewed a list of all the plant videos in the database • The user viewed a popup message stating, "Reminder Already set."	Pass
TC_300_04	To check whether the toggle button for the reminders functions or not	The user should be able to turn on and off the toggle button reminder	The user switched the toggle button on and off	Pass
		TC_400 Garden		
TC_400_01	To check the search result when there is no related plant with the words entered by the user	• The user should be able to see all the plants in the database • The user should see a popup message stating "No Related Plants Found."	• The user viewed a popup message stating, "No Related Plants Found." • The user viewed all the plants in the database	Pass
TC_400_02	To check whether the user can search plants	• The user should be able to see all the plants in the database	• The user viewed a list of all the plant videos in the database	Pass

	with a search field empty	• The system should send a message stating, "No related videos found."	• The user viewed a popup message stating, "No related videos found."	

Table 6: (continued)

TC_400_03	To check whether the system can shortlist the plants depending on the user's search word	The system should only display plants that are related to the words searched by the user	The user saw plants that were relevant to his or her search terms.	Pass
TC_400_04	To check whether the system can navigate the user to the google map if the user clicks on the nearby plant nurseries button	The system should navigate the user to the google map and show the nearby plant nurseries	The user redirected to the google map and was shown a list of plant nurseries nearby the device's location	Pass
TC_400_05	To check whether system can navigate the user to the My garden page if the user clicks on the My Garden button	The system should navigate the user to the My Garden page	The user redirected to the My Garden page	Pass
TC_400_06	To check whether the system can navigate the user to the user dashboard page if the user clicks on the home button	The system should navigate the user to the user dashboard page	The user redirected to the User dashboard page	Pass
TC_400_07	To check whether the system can let the user see the information about the plant if click on the icons	The user should be able to see unique information about the plant when clicking on the icons	The user viewed unique information about the plant when they clicked on the icons	Pass
TC_400_08	To check whether the user can add new plants to the My Garden page when they click on the Add To My Garden button	• The user should be able to add plants to the My Garden • The system will display a popup message stating,	• The user added a plant to the My Garden • The user saw a popup message stating,	Pass

		"Adding a plant to My Garden."	"Adding a plant to My Garden."	

Table 6: (continued)

TC_400_09	To check whether the user can add plants that already exist in My Garden again	The system will display a popup message stating, "Plant is already added in My Garden."	The user saw a popup message stating, "Plant is already added in My Garden."	Pass
TC_400_10	To check whether the system allows the user to delete the plants from the My Garden	The user should be able to delete the plants from the My Garden	The user deleted the plant from the My Garden	Pass
TC_400_11	To check whether the system allows the user to water the plant	The user should be able to water the plant by clicking the water icon button	The user watered the plant by clicking on the water icon	Pass
TC_400_12	To check if the user did not water the plant for more than three days	The system will automatically detect the plant is already wilt and show a message stating "The plant is already wilted" and ask the user to remove it from the My Garden	The user views a message stating, "the plant is already wilted."	Pass
TC_400_13	To check whether the system allows the user to set early reminders for the significant plant activities by clicking the "i" icon beside the plant name	The user should be able to set an early reminder for the significant plant activities	The user switches the early reminders on for the significant plant activity	Pass
TC_400_14	To check whether the user can change the start date for a plant	The user should be able to change the start date for a plant	The user changed the start date for a plant	Pass
		TC_500 Plant Management		

Table 6: (continued)

TC_500_01	To check the search result when there is no related plant with the words entered by the administrator	• The administrator should be able to see all the plants in the database • The administrator should see a pop up message stating "No Related Plants Found."	• The administrator viewed a pop up message stating, "No Related Plants Found." • The administrator viewed all the plants in the database	Pass
TC_500_02	To check whether the administrator can search plants with search field empty	• The administrator should be able to see all the plants in the database • The system should send a message stating, "No related videos found."	• The administrator viewed a list of all the plant videos in the database • The administrator viewed a pop up message stating, "No related videos found."	Pass
TC_500_03	To check whether the system can shortlist the search result depending on the administrator's search word	The system should only display plants that are related to the words searched by the administrator	The administrator saw plants that were relevant to his or her search terms.	Pass
TC_500_04	To check whether the system allow the administrator to edit the details of the existing	The administrator should be able to edit the details of the existing plants	The administrator altered the details of the plants	Pass
TC_500_05	To check whether the system allow the administrator to delete the plants from the database	The administrator should be able to delete the plants from the database	The administrator deleted the plants from database	Pass
TC_500_06	To check whether the administrator can add new plants to the database	The administrator should be able to add new plants to the database	The administrator added new plants to the database	Pass

TC_600 Message

Table 6: (continued)

TC_600_01	To check whether the system allows the administrator to send messages to all users	The administrator should be able to send the message to all users	The administrator sent the message to all the users	Pass
TC_600_02	To check whether the system allows the administrator to send messages to selected users	The administrator should be able to send the message to selected users	The administrator sent the message to selected users	Pass
TC_600_03	To check whether the system narrows down the user list depending on the administrator's search	The system should be able to shortlist the users based on the administrator's search.	The administrator can view the user related to his search	Pass
TC_600_04	To check whether the system allows the administrator to view the previously sent messages	The system should allow the administrator to see all the previously sent messages	The administrator saw all the previously sent messages	Pass
TC_600_05	To check whether the system allows an empty message to be sent to the users	The administrator should see a popup message stating, "Please Write Your Message First."	The administrator saw a popup message stating, "Please Write Your Message First."	Pass
TC_600_06	To check whether the system lets know the administrator that the message is sent	The administrator should be able to see the popup message stating "Message Sent."	The administrator saw a popup message stating "Message Sent."	Pass
TC_600_07	To check whether the system lets the users view the messages sent by the administrator	The user can view the messages sent by the administrator	The user saw the messages sent by the administrator	Pass
		TC_700 Generate Report		
TC_700_01	To check whether the system allows the administrator to view	The administrator should be able to see the ratings given by the users	The administrator saw the ratings given by the users	Pass

	the rating given by the users			

Table 6: (continued)

TC_700_02	To check whether the system allows the administrator to view the graph of total planted based on months and years	The administrator should be able to view the graph of the total planted according to the months and years	The administrator saw the graph of the total planted according to the months and years	Pass
TC_700_03	To check whether the system allows the administrator to view the details of total planted based on months and years	The administrator should be able to view the details of the total planted according to the months and years	The administrator saw the details of the total planted according to the months and years	Pass
TC_700_04	To check whether the system allows the administrator to select the content by marking the checkbox	The administrator should be able to select the content by marking the checkbox	The administrator selected the content by marking the checkbox	Pass
TC_700_05	To check whether the system allows the administrator to view the selected content	The administrator should be able to view the selected content	The administrator viewed the selected content	Pass
TC_700_06	To check whether the system allows the administrator to download the selected content	The administrator should be able to download the selected content	The administrator downloaded the selected content	Pass

A questionnaire was designed and distributed to 10 respondents who will use the mobile application: the public and the members of The Selangor and Federal Territory Gardening Society. The questionnaire consists of a description of the functionalities and features of the system. The respondents provided the rank for the interface, starting from strongly agree to disagree strongly.

The result of acceptance testing conducted on ten respondents about the mobile application interface is shown in Figure 11. The Figure shows that 90 per cent of respondents strongly agree that the interface is user-friendly and convenient. In contrast, 10% of the respondents agree about the mobile

application interface. It can be concluded that most of the respondents strongly agree that the user interface of The Home Gardening Guidance Mobile Application is user-friendly.

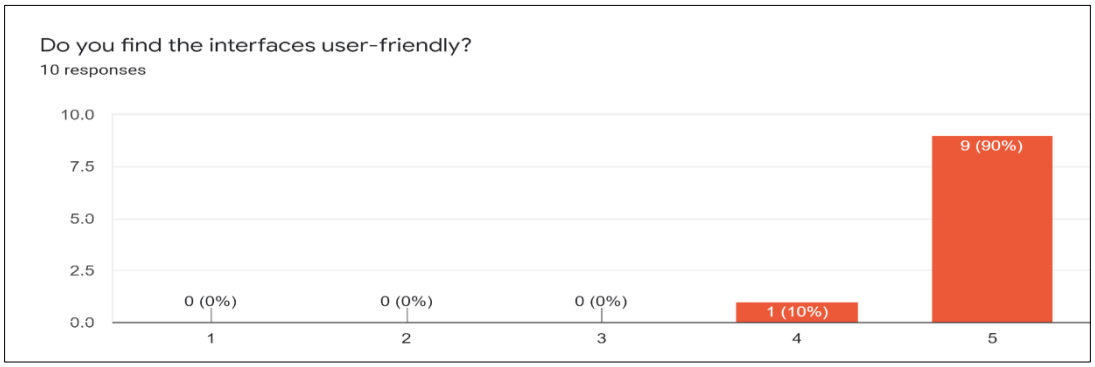

Figure 11: The Respondent's satisfaction level with the user interface

The result depicts the percentage of the user's satisfaction level with the functionalities provided by the Home Gardening Mobile Application, such as the Garden, the My Calendar, and Learn Tube modules, as shown in Figure 12. Based on the chart, around 90% of the users strongly agree with the service provided by the Home Gardening Guidance Mobile Application. In comparison, 10% of the respondent agree with the functionalities of The Home Gardening Guidance Mobile Application. There is no response such as uncertain, disagree, or strongly disagree from the respondents.

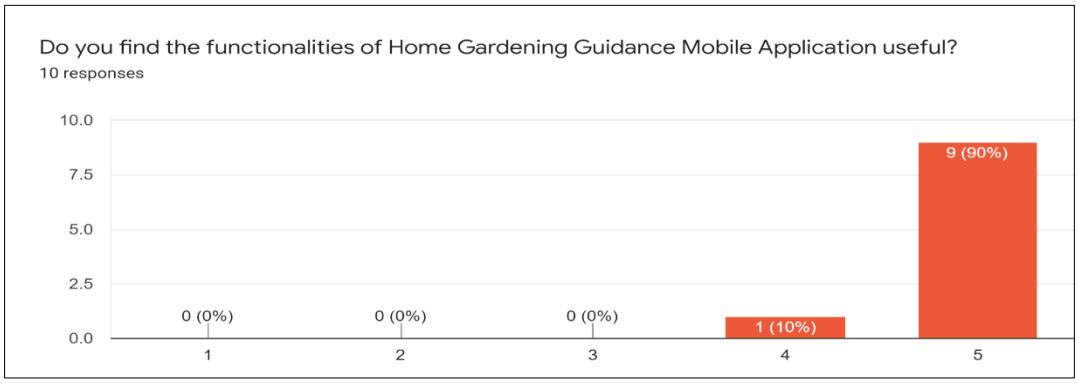

Figure 12: The Respondent's satisfaction level with functionalities of the Mobile Application

5. Conclusion

As a conclusion, the Home Gardening Guidance Mobile Application tends to benefit the people in the community to carry out gardening activities all by themselves. This will also be a great platform for to increase the people with interest in gardening activities without any knowledge.

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