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Melaka Botanical Park Services Management System

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Abstract: Service Management System is to facilitate when dealing with data or information from customers. Melaka Botanical Park uses manual methods to manage their service information to customers. Customers need to go to the park and queue at the counter to fill in the information. Manual systems are now becoming less relevant as humans are unable to deal with work processes with a large number of papers to analyze growing data. Therefore, this system was developed to facilitate the process of renting the services provided at the Melaka Botanical Park by customers without going to the counter and writing information. The methodology used to manage the development of this system is a prototype model. The programming languages used are Hypertext Preprocessor (PHP) and Hypertext Mark-up Language (HTML) and MySQL database. This system can be used for the Melaka Botanical Park customer who wants to use the provided services. This system can manage various information to the services. With the development of this system, users only need to login into the system to make the reservation and this system also provides all services that are at Melaka Botanical Park then it will save the users time and energy to go to the place. This service management system is much better than any existing system for managing service and customer data, as well as for managing the ordering and renewal process

Keywords:Booking System, Services Management System, Web Based System , Structured Approach

1. Introduction

The manual system would be less relevant as humans could not handle the work process with a large number of papers to analyze some data. The service management system will simplify the rental system when dealing with the data or information from the customer. This system can help the customer because some people do not have time to go to the place to get the form of rental and need something that can be faster and easier.

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Yet, they have a problem regarding the booking since they used the manual system to handle the system and the paper wastage. The main purpose of developing this system is to make the rental system more efficient which makes this services rental system to keep information about rental and customers and also to increase the business service performance and speed of work. Thus, a system known as the services management system has been proposed to solve the current problem. This system can manage various information to the services. The objective of this study is to design the Services Management System based on a structured approach, to develop the Services Management System, and to evaluate the developed Services Management System. The case study in this project is conducted at Melaka Botanical Park as a service management system to the customer. The user scope is for the user and the customer and administrator.

This chapter contains six main sections. Part 1 describes the background of the project, while Part 2 provides the results of the literature review. Part 3 shows the research methodology and Part 4 explains the findings from the analysis and design of the system.

2. Related Work

2.1 Melaka Botanical Park Services Management System

Current Melaka Botanical Park used manual methods to use their services. By doing that, customers need to queue at the counter and fill in the information before using the services. By using existing services it is possible that they cannot use the services because they will not know whether the services are available or not. Thus, a system known as the services management system has been proposed to solve the current problem.

2.2 Web Information System

Nowadays in the fast-growing world, every work or task has been used with the growing reliance on computerized systems and increasing rapidity of the introduction of new technologies, user acceptance of technology continues to be an important issue [1]. It was divided into two which are web information satisfaction and web system satisfaction. Comprehensibility, reliability, and usefulness determine web information satisfaction, while access, accessibility, and navigation determine web system satisfaction [2]. The main features of the web-based information system are cross-platform accessibility. In this project, the proposed system will be developed using the web-based information system method.

This system involves multiple customers and administrators that can access the system at the same time. Developing this system is also cheaper than others and also more manageable for the customer and administrator because no need to install the system, only use the browser. Besides that, this system is more efficient because it can help customers to find the services because all services are provided in one system.

2.2 Comparable Existing System

From a summary of comparisons between existing and proposed systems, the proposed system combines all three features into one system. Therefore, users do not need to change the software or systems to use certain services. Also, all functions in one system will reduce operating costs. Table 1 shows the summary of comparisons between Ayer Keroh D'Village Resort [3], Foresttrek Cycle Centre [4], Langkawi skytrex-adventure [5], and proposed systems. The proposed system combines all three features into one system. Therefore, users do not need to change the software or systems to use certain services. Also, all functions in one system will reduce operating costs.

Table 1: System's Comparison

Features/System	Foresttrek Cycle Centre	D'Village Resort	Langkawi Skytrex	Services Management System
System type	Web-based	Web-based	Web-based	Web-based
Module	Login, registration, payment, product (information, brand, type), customer services and booking	Rooms & rate, facilities, information, contact us, booking and payment	Registration, log in and log out , customer profile, booking, administrator dashboard and report	Registration, log in and log out, customer profile, booking, administrator Dashboard and report
Software development	-	-	-	Prototyping model

3. Methodology/Framework

For this system, a prototyping model is utilized. This software process model to explore design alternatives rather than the new system and also gather requirements. Many of the features suggested by the users may not be well understood, then prototypes are used to minimize the risk associated with the system. This is done by confirming the important issues that need to be understood before the real system is built. This prototype model has six main phases namely planning phase, analysis phase, design phase, implementation phase, prototype system and testing phase.

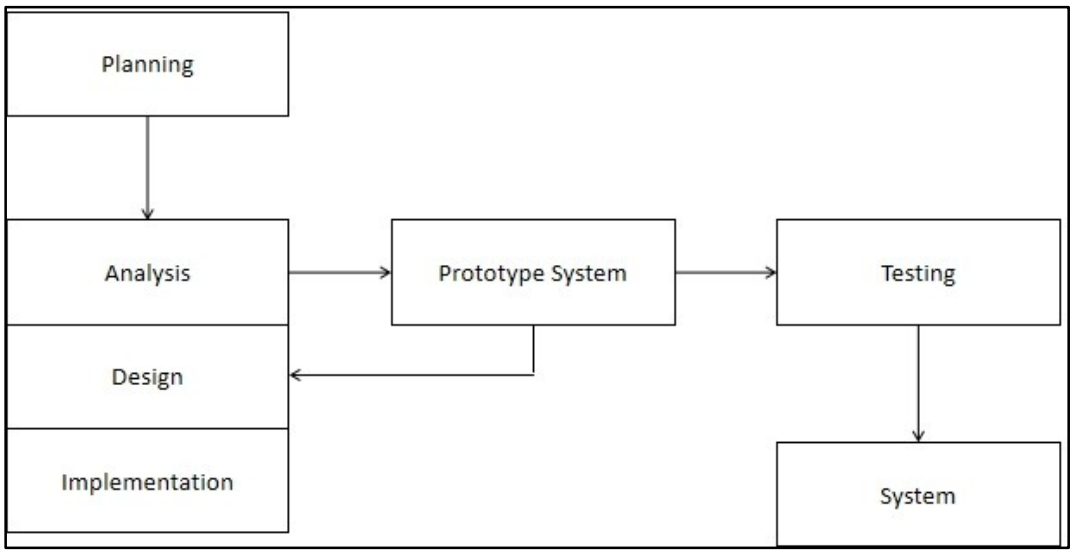

Figure 1: Prototyping Model [6]

3.1 Planning

The approach used to gather the requirements is to perform interviewsessions with the representative of Melaka Botanical Park staff and collecting datafrom official website related the project to inquire about the concept of creating the newweb-based system to handle all the services information such as customer data withoutmanually handling the data. When the specifications match the users' expectations, it isappropriatetocontinuewithactivitiesthatincludesketchinganinterface.Theinformation

obtainedincludestheneedsofcustomersthroughtheuseof thismethod,theprice of the reservation, and the targeted users to customer more know the services areprovided at Melaka Botanical Park.

3.2 Analysis

In this phase, have analyse considers the current system and investigates any problem associated with it. After determine the aspects of planning phase as well the functional and non-functional requirement, collection and analysis information will be carry out to determine and create an Entity Relationship Diagram (ERD) and Data Flow Diagram (DFD) in order to present the relationship between the entities, as well to determine and demonstrate the process and flow of data in the system. The phase of analysis is the phase to get all the details of the project, and perform the analysis.

3.3 Design

The list of requirements that is developed in the definition phase can be used to make design choices. In the design phase, one or more designs are developed, with which the project result can apparently be achieved. The functional module design, flowchart, system's database design and user interface design. Graphical user interface of the system is also created to illustrate the actual system presentation. Brackets software is used to design the user interface of this system. The technical aspects of the design will be shared with the stakeholders concerned. Also, different factors are taken, such as the risk, the technologies to be used, and the skills of the team.

3.4 Implementation

The tasks in this phase are focused on generating software code according to the system design, analysis, and design that has been done. Encoding and debugging is the act of creating the final system. The required documentation should be referenced throughout the rest of the system development process to ensure the project is built in accordance with the needs and requirements or scope. At this step, the database will start working. At this point, the use of acceptable code language is emphasized in relation to system development. The programming languages to be used are the PHP, Xampp, and SQL tools used to build the system further.

3.5 Prototype System

In this phase, prototypes begin to be built and this phase is redone if available any errors or problems in the prototype application. There are a total of three prototypes are developed to overcome any errors found in the application this suggestion. Any errors found in this phase need to be referred back to the phase the previous i.e. the design phase to redesign the prototype from any errors and problems. An important part used for prototype activities is the interface front where users comment. The comment used to for perform activities of re -analyzing, redesigning, and performing re - implementation to produce a second prototype which has more many features. This continued until the prototype produced was perfect as desired by the user.

3.6 Testing System

This is to ensure that there will be no bugs in the system, and if a bug is found the code is immediately reworked and retested, during this phase will test many activities. The goal at this level is to evaluate whether the system has complied with all of the outlined requirements and to see that it meets customers standards. In this phase, if the method does not satisfy the set conditions, it will be replicated according to the desired value of the consumer.

4. Results and Discussion

The analysis of needs would identify functional and non-functional needs, the user needs and hardware specifications, as well as software for Melaka Botanical Park Services Management System.

Table 2: Functional requirements for the system to be developed

No.	Module	Details
1	Login and reservation	-The system should allow users to register and enter a password in order to enter the system. -The device should make it possible for the user to enter the correct password. -The system should generate an error message if there is an incorrect password.
2	Customers profile	-The system should allow viewing the customer's information details. -The system should allow viewing the customer's history of reservation.
3	Booking catalog	-The system should allow viewing the customer's information details. -The system should allow viewing the customer's history of reservation.
4	Administrator Dashboard	-The system should allow the administrator to add, edit, update and remove services. -The system should allow the administrator to manage the customer reservation.
5	Orders, payments and status checks	-The system should allow to record the frequency of customers coming to get discount or coupon for the regular customer. -The system should allow the administrator to inspect the report module to allow the administrator to analyze the data.
6	Report	-The system should allow to record the frequency of customers coming to get discount or coupon for the regular customer. -The system should allow the administrator to inspect the report module to allow the administrator to analyze the data.

4.1 Data Flow Diagram (DFD)

Figure 2 shows the context diagram, this services management system has two entities which are customer and admin. For the customer process, this system has registration details that sent to the system and booking details also as a input to the system. Then, the booking details request are the output from the system.

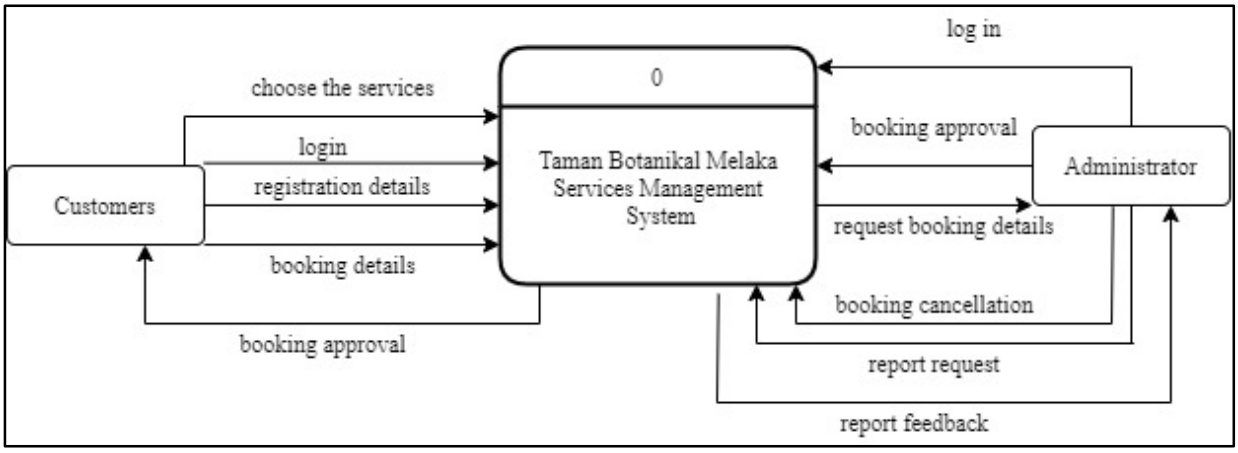

Figure 2: Context Diagram

Figure 3 showsthe entire processes involved in Melaka Botanical Park Services Management System. There are five operations in the system which are registration and login, reservation catalogue, manage booking details, manage report, and manage administrator dashboard. The login process can be accessed by any type of user level who is already registered in the system. The system will keep the information of each user and the users will be redirected according to their access level that has been registered.

Next process is services catalogue whereby customers can view and choice the services. Managing booking process is done by the customer make some reservation and administrator will validate the booking request and update the status of the booking either approve or rejected.

Managing report is the process where administrator can view the regular customers that can make the customer get some discounts. Then, administrator will generate the reports from the data that available in the database for the analysis purposes. Last process is manage administrator dashboard where administrator can add, edit, update and remove the services.

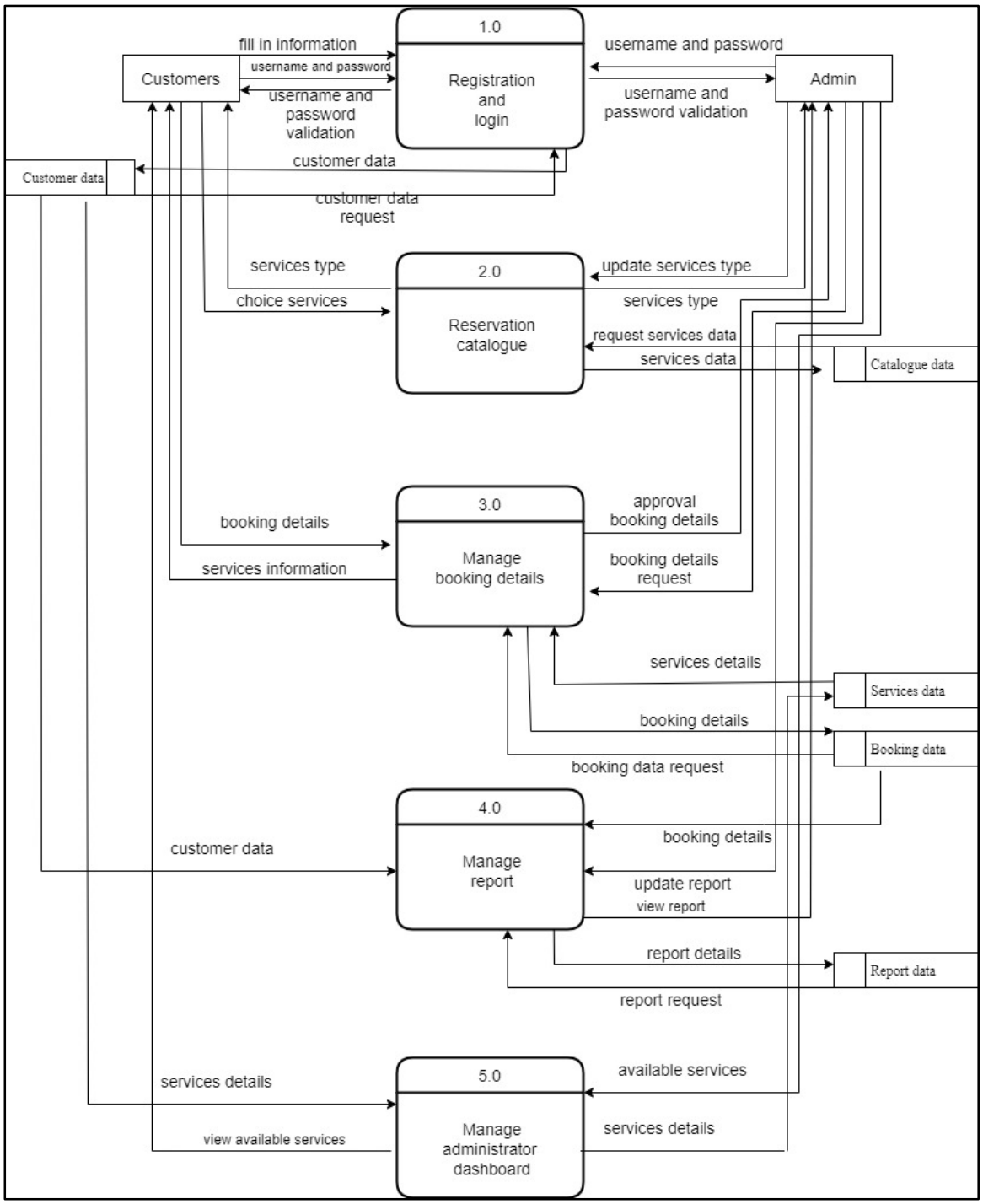

Figure 3: Data Flow Diagram Level 0

4.2 Entity Relationship Diagram (ERD)

In Figure 4 shows the Entity Relationship Diagrams (ERD). ERD are used to describe and explain the components or procedures involved in designing a database which is any information that can be linked to each other. ERD aims to ease the development of designing a system for managing information systems entities inventory and have seven entity which is users, administrators, booking, report, outrec, transportation, and skytrex.

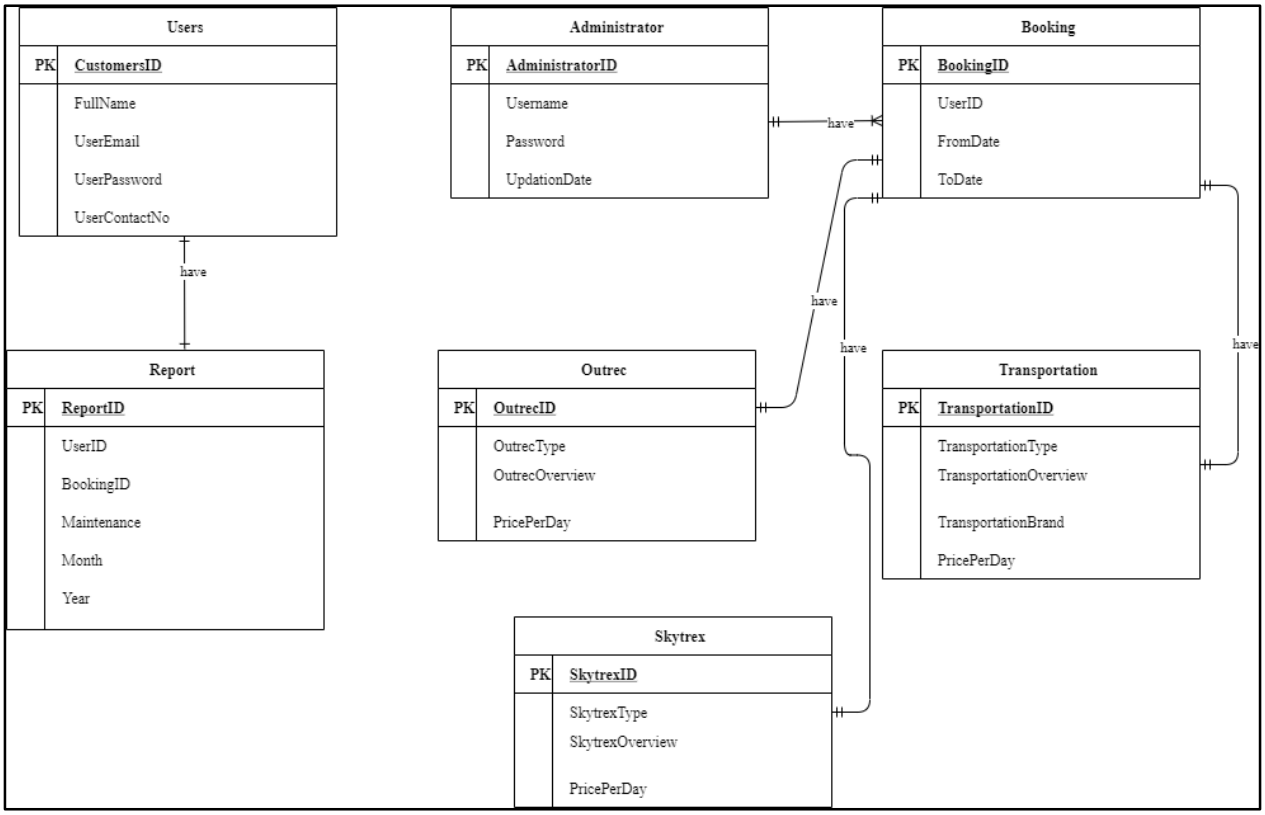

Figure 4: Entity Relationship Diagram

4.3 System Design

In Figure 5 shows the system flow chart. Customer need to register first before using the system by fill in the required information such as name, email and password. Then customer can login the system by insert their email and password and customer can open their profile. At the customer profile customer can update their details, manage booking, write some feedback and change password. After that, customer can view the services by clicking on the services listing at the top of website then choose it to make some reservation. In the reservation phase, customer need to fill in the details at the field and also can make multiple reservation then checkout. Next, after confirm the information, customer can make a payment. The payment have two (2) method which is via online banking or cash. The administrator will be inform about the booking and prepare it and ready to used.

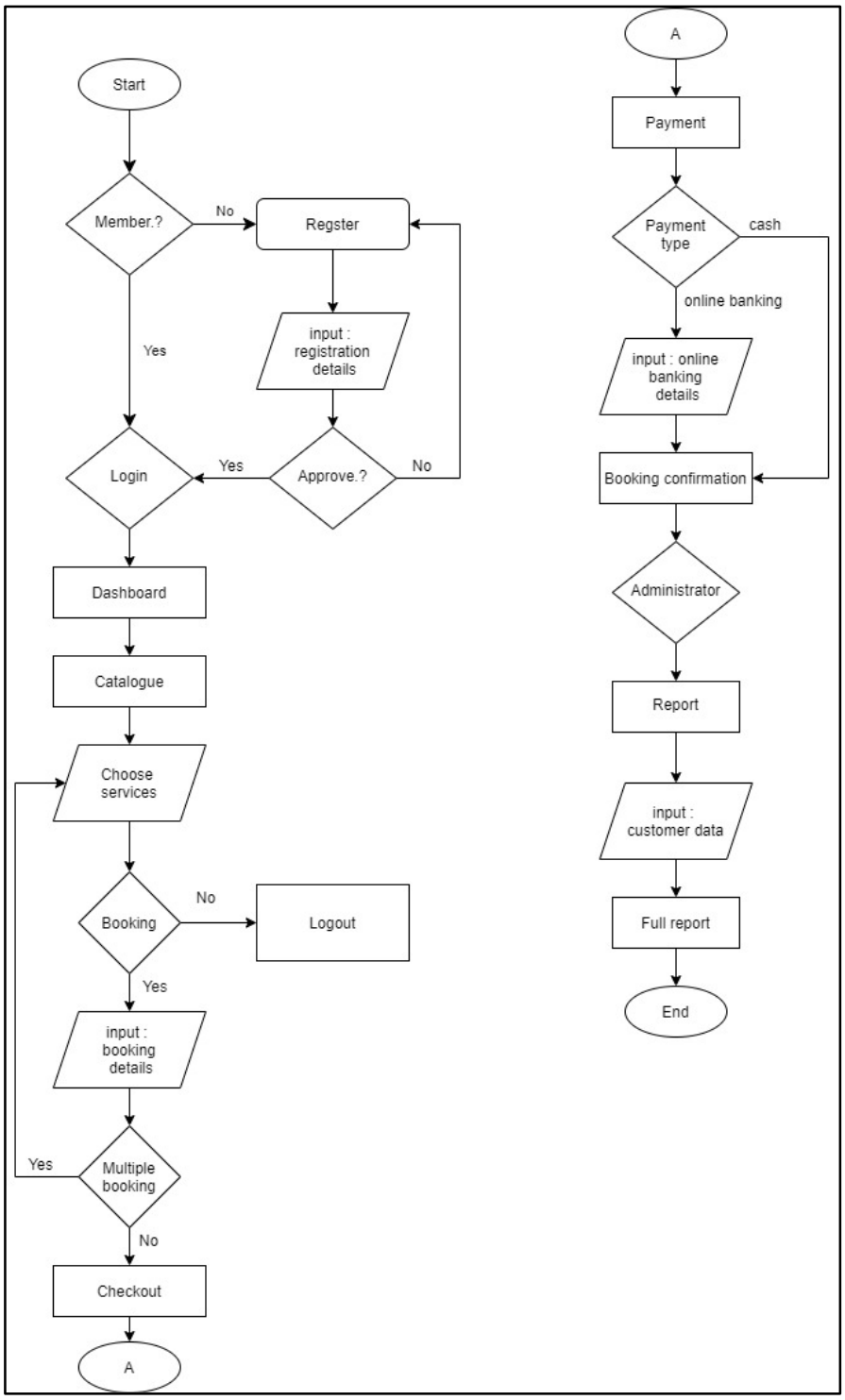

Figure 5: Flowchart

4.4 Interface Design

Figure 6 shows the customer login interface, where the customer needs to insert the username and password to use the system and also for registration where where customer need to insert the information such as name, email, phone number and password. Next, Figure 7 shows the program code for the database connection using the PHP language. The phpMyAdmin database is selected as the data storage location for the Melaka Botanical Park Services Management System.

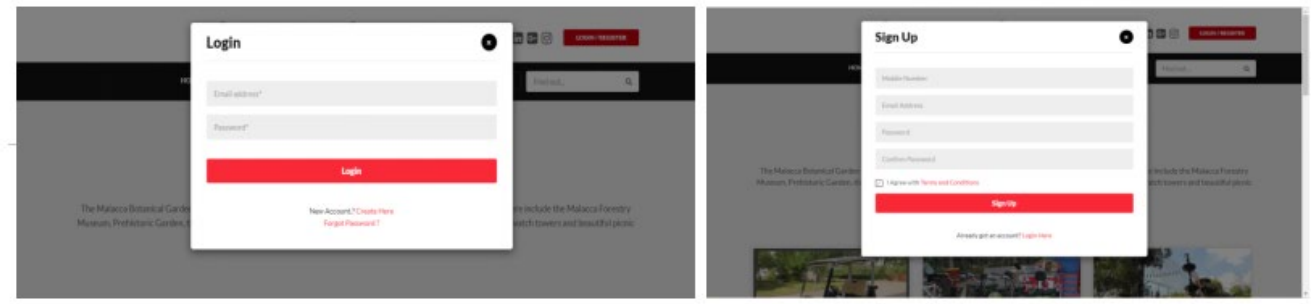

Figure 6: Login and Registration Interface

Figure 7: Program Code for Database Extension

4.4 Test Cases

The plan's goal is to validate and identify whether or not the end system are fulfil the requirements.

Table 3: Registration of test cases

No	Test Cases	Description	Expected Results	Passed/ Fail	Corrections
1	User registration data iscomplete	Registration is successful and the application displaysmain page	Asexpected	Passed	No correction
2	Registration data not completed	Warning display to fillempty space	Asexpected	Passed	No correction
3	Sign up use email and password which has been registered or the same	Users cannot registered because of e-mail and password used ever registered	Asexpected	Passed	No correction

Table 4: Customer Profile of test cases

No	Test Cases	Description	Expected Results	Passed/ Fail	Corrections
1	User login	Login is successful and the application displays the customer profile	Asexpected	Passed	No correction
2	Profile setting	Display customer information where customer can change name, email address, phone number and date of birth then click on "Save changes"	Asexpected	Passed	No correction
3	Changes password	User can change their password by fill in the current password and new password then click on "Update"	Asexpected	Passed	No correction
4	My booking	List the customer and have display "Active" if admin have make action to approve the booking	Asexpected	Passed	No correction
5	Post a feedback	User can write a feedback regarding the system or the services and click on "Save" after write the feedback	Asexpected	Passed	No correction
6	My feedback	Display user feedback and posting date	Asexpected	Passed	No correction
7	Logout	User can logout form customer profile by click on "Logout" button	Asexpected	Passed	No correction

5. Conclusion

This report consists of four parts which are part 1, part 2, part 3, and part 4. part 1 describes the project introduction and research background such as problem statement, objectives, scope, importance and expected results of the project. Besides, part 2 includes a description of the study literature such as study domain, management system techniques information and comparative studies from existing systems. Then, part 3 explains the methodology system development. While part 4, explains about the analysis system requirements, system design, design database and interface design. This system was developed in accordance with the scheme set out in the analysis and design phase. Some of the functions contained in the system are functioning successfully. Although the system has been successful achieving intended objectives, there are a few suggestions from users of the system in order to upgrade and added some functionality so that the system becomes more complete and easier for the administrator and user or customer . By having this system, Melaka Botanical Park is no longer using the manual process to manage their customer information and also save the user time to make reservation because the user only need do by online, they do not need to queue at the counter to make reservation.

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