



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF ENGINEERING
SCHOOL OF COMPUTING
SCSJ3303 INTERNET PROGRAMMING
GROUP PROJECT - SECTION 02

Project Proposal

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Project Title

Flying Wheel Bicycle Management System

Overview

Flying Wheel Bicycle Management System is a web application for bicycle management that provides a facility for booking and buying bicycles or its equipment.

Problem Background

UTM Bicycle shop has been growing over the years and customers kept increasing. They have been using the manual method to record shop activities since then such as bicycle rental. Due to the increasing number of customers, they are facing difficulties in :

- Keeping track of the damaged bicycles
- Keeping track on unreturned bicycles
- Keeping track of late returned bicycles
- Keeping track on bicycles and bicycle equipment stocks

On the other hand, the customers are facing the inconvenience of pre-booking a bicycle. If they wish to rent a bicycle, they will have to come at the exact date and time they wish to use the bicycle and hope they will find one that is to their liking. If they ran out of bicycles, it will be a waste of time and energy to go all the way and unable to rent a bicycle.

Proposed Solution

To develop a web application known as Flying Wheel to automate all the process done in the Bicycle Shop. This helps the bicycle manager in making sure that the shop management system is eased and well-managed. Other than that, all records can also be kept in an organized manner for future use.

To book a bicycle, customers can fill up a form in the system with information such as including name, date, pickup and return time. Afterward, the bicycle manager has to approve/reject the booking based on availability. The system will update the booking result in the web application for the Customer to view. Customers are also allowed to modify booking such as edit and cancel(delete) booking. Once approved, the customer shall pick up a reserved bicycle at the bicycle shop and payment shall be done at the bicycle shop.

In order to keep track of the damaged bicycles, this can be done through Customer review after use or Customer information(manually) and the bicycle shall be removed from the system by the Bicycle Manager. As a result, the number of damaged bicycles can be reduced hence enhancing the customer experience.

Flying Wheel also acts as an online shopping platform to help Bicycle Manager to keep track of bicycles and bicycle equipment stocks. Items information could be uploaded to the web application for sale. Sold items will be recorded for sales and financial report generation.

This application also allows bicycle manager to record every booking made in the bicycle shop rather than recording it in a book manually. As a result, this helps the Bicycle Manager to keep track of unreturned bicycles and late returned bicycles. There are three modules of the System: (1) Administrator (2) Customer (3) Bicycle Manager.

System Module

Administrator and Bicycle Manager should log-in to use the system using their username and password. Incorrect login will be rejected. Customers, on the other hand, can use the system with logging in with their registered account.

Administrator	<ul style="list-style-type: none">• An administrator can delete Bicycle Manager.• An administrator can add new Bicycle Manager.• An administrator can check all financial reports.
Customer	<ul style="list-style-type: none">• Customer can book bicycles for rent.• Customers can delete the booking• Customer can buy items.
Bicycle Manager	<ul style="list-style-type: none">• Bicycle manager can check all rental bookings from members.• Bicycle manager can add number of bicycles for rent.• Bicycle manager can remove number of bicycles from rent.• Bicycle manager can add new items for sale.• Bicycle manager can delete old items from the sale.• Bicycle manager can check bicycle orders from members.• Bicycle manager can top up amount in members' account.• Bicycle manager can check and manage all ordered items.

Module Functionality

Administrator	(1) Manage Bicycle managers (2) View financial report
Customer	(1) Register in the system (2) Log in the system (3) Book a bicycle (4) View booking (5) Order item (6) View items (7) Edit profile
Bicycle Manager	(1) View booking application (2) Manage order application (3) View order application (4) Manage items for sale (5) Manage bicycle for rent (6) Top up user account

Tools and technology usage

- Servlet/JSP (Backend/Frontend)
- glassfish(local server)
- MySQL (database)
- Bootswatch (front end design)

Use Case

