



Sri Lanka Institute of Information Technology

Information Technology Project

Year2, Semester 2 - 2024

Project Charter

Title of the Project :	Garbage Management System	
Campus & Batch :	Malabe Y2S2	Group No: TW23
Development Technology :	MERN Stack	

Description of the Project:

Current Problem

The urban waste management service is essential for the urban population, and service providers may gain a great deal by utilizing internet platforms. The conventional waste management system is criticized for being ineffective in day-to-day operations, lacking real-time monitoring, exhibiting poor staff coordination, utilizing unnecessary resources, and managing customer contacts inadequately. Because of this, the current system might not adequately address the client's concerns, underscoring the need for a more efficient and technologically advanced approach to urban waste management.

Suggestion

It is suggested to create a new online waste management system with interconnected sub-systems to provide a thorough approach to solving current problems. With features like a helpdesk and system rating facility, the system seeks to effectively handle client requests, deliver services, and sustain customer contact. Sub-systems for personnel, Tasks, finances, staff, customers, research and development, vehicles, and route management are part of the main system. The new online system has superior real-time monitoring and decision-making capabilities, increased customer satisfaction through online participation, and increased efficiency and effectiveness. On the other hand, such drawbacks include personnel aversion to change, technological difficulties, and problems integrating new systems with current ones.



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Details of the Group Members: *(Provide the details of the group leader in the first row)*

	Name with Initials (Surname first)	Registration Number	Contact Phone Number	Email
1.	Fonseka W D C	IT22341518	076 292 7764	it22341518@my.sliit.lk
2.	Ganepola G A S S	IT22321022	070 229 7844	it22321022@my.sliit.lk
3.	Chandrasekara N K D R	IT22052988	071 632 5865	it22052988@my.sliit.lk
4.	Aluvihare W B W M R K	IT22304506	077 160 3864	it22304506@my.sliit.lk
5.	Shehara I G D S	IT22338334	077 526 5486	it22338334@my.sliit.lk
6.	Samarasinghe R T	IT22032942	077 442 0669	it22032942@my.sliit.lk
7.	Rashmika S E S	IT22584854	076 436 2185	it22584854@my.sliit.lk
8.	Wijesuriya M W A D	IT22369574	071 993 1314	it22369574@my.sliit.lk

List of Functions Developed by the Group Members:

	Name with Initials	Description of the Function
1.	Fonseka W D C	Task Management <ul style="list-style-type: none">The interface prioritizes user requests received via the customer management system and facilitates efficient management of staff, vehicles, and routes.(Retreive)Users can create requests for staff, vehicles, and routes, streamlining the designation process. (Create)Customers gain access to vehicle tracking via tracking number once all elements are deployed and configured.(Read)Administrators have the capability to update, delete, and generate reports on requests. (Update and Delete)



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		<ul style="list-style-type: none">The interface also manages waste management equipment and assigns transfer stations for effective garbage handling within designated areas.
2.	Rashmika S E S	<p>Product Management</p> <ul style="list-style-type: none">Add product details, quantity and prices: Enable administrator or inventory manager to enter products to the system.Update product resources, details, quantity and prices: Administrator or inventory manager are allowed to validate and update the product details and prices.Delete product resources, details, quantity, and prices: Administrator or inventory manager can remove the product from the system when products are not selling anymore or out of stock.View product resources, details, quantity, and prices: Display all the product in the web site so that users can check and buy the product.Customer can search for product from the system.Only registered customers can buy the products in this system.Customers can add products to the cart.Customer can add products to the cart and remove, update quantity of the products from the cart.The system calculates the total price of the cart and displays it in the cart interface.



3.	Shehara I G D S	Customer Management <ul style="list-style-type: none">• Customer Registration<ul style="list-style-type: none">• If the customer is new to the system, they can use a new account by providing their personal information during the signup process. (create)• After the registration, users can log in to the system by providing their own login credentials. The system allows users to view their registration details and account information. (Read)• Users have the ability to update their profile information if there are any changes. (update)• If the users want to delete their account, they can delete their account or remove their information from the system. (delete)• Request Submission<ul style="list-style-type: none">• Customers can create new garbage collection requests by submitting details such as location, type of waste, contact numbers and preferred collection time. (create)• Users can view the details of their submitted requests, including the status and scheduled collection time. (Read)• Customers may update the details of their requests or change the time if needed (Update)• Users can cancel a submitted requests if they no longer require junk collection (Delete)
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		<ul style="list-style-type: none">• Request Tracking<ul style="list-style-type: none">• Customers can track the status (Read)• Payment Gateway<ul style="list-style-type: none">• When a payment is initiated by the user for a waste collection service.(create)• Generate reports by summarizing the customers' requests.(Read)
4.	Ganepola G A S S	Staff Management <ul style="list-style-type: none">• View requests sent by the task management function.<ul style="list-style-type: none">• View requests and assign members to various tasks by their experiences.• Update the status of the requests.• Registration<ul style="list-style-type: none">• Register new staff members. (Insert)• Edit the details of staff members. (Update)• Delete details of old staff members who have left the company. (delete)• Salary management• Record leave information and OT hours of staff members(insert)• Generate the final salary report by using the above-recorded data. (Retrieve data)• Submit the final salary report to the finance management.



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5.	Chandrasekara N K D R	Finance Management <ul style="list-style-type: none">• If the customer makes a payment, then confirm and display a summary of the payment to the customer.• Adjudicate requests for vehicle funds and staff salaries, like approve or reject.• Also, the finance manager can check the previous month's vehicle fund requests and payments of salaries.• Insert financial details: after adjudicate, create a report and send it to the concerned departments, including the adjudicate date, approved funds, and funding details.• Update and delete financial details: The finance manager can maintain and update the financial report according to the current financial situation.• At the end of the month, the finance manager can generate a salary report. About managing the finances of the month.
6.	Samarasinghe R T	Route Management <ul style="list-style-type: none">• If the customer gives order details, then the customer can see the tracking details by clicking the 'track order' button.• Create route details- The system can use the interface to create routes for garbage collection vehicles by using location of the customer, capacity of the garbage, time windows for collection, and traffic periods in routes.



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		<ul style="list-style-type: none">• Read route details-Customer can see the routes and tracking details order by order in time. also, customers want to see the vehicle map location he can see the map by clicking the tracking number.• Update route details- Vehicle drivers can maintain and update the route details according to the current situation.• If the vehicle driver wants to change the route because of route conditions, he can change the route for the new route.• Delete route details- The route manager can delete the route after the garbage collecting job has been done or if all the customers on the route had rescheduled their collecting date.
7.	M W A D Wijesuriya	Vehicle Management <ul style="list-style-type: none">• Registering new vehicles (Insert).• Register new vehicles in the system by providing all the essential details.• Maintain a list of vehicles.• The system can easily create detailed reports for each vehicle, including essential information like its name, identification number, assigned task, curb weight, fuel type, and fuel capacity.• Read, update, and Delete about the maintenance of the vehicles such as by checking the engine, suspensions, brake system, transmission, tiers, and fuel capacity before assigning a task.



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		<ul style="list-style-type: none">• Estimate repair cost by a request for finance management. (Update/Delete/Insert)• Assigning them to specific duties (By viewing requests sent by the Task management function)• View requests• Assign vehicles available for relevant tasks.
8.	Aluvihare W B W M R K	<p>Research & Development Management</p> <p>The system features a comprehensive set of functions to facilitate efficient management and interaction within the research platform.</p> <ul style="list-style-type: none">• The Research team can publish the research in several areas,<ul style="list-style-type: none">▪ Technological Innovation▪ Environmental Impact Assessment▪ Behavioral Studies▪ Policy and Governance▪ Health and Safety▪ Art and Design▪ Capacity Building and Training <p>And the Research team can update delete These Research.</p> <ul style="list-style-type: none">• After Research are published the customers can view the Research.



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	<ul style="list-style-type: none">• Search research articles enable users to search for research articles based on keywords, a or categories, enhancing accessibility to valuable information.• Customers can provide feedback on the research that has been published.• Customers can offer suggestions for improving research methodologies, approaches, or outcomes based on their perspectives and experiences.
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