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UNIVERSITI TEKNOLOGI MARA (UiTM),  
SHAH ALAM CAMPUS.**

**CSC584: ENTERPRISE PROGRAMMING**

**USER MANUAL**

**ECOTECH - SUSTAINABILITY MANAGEMENT SYSTEM**

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## **1. Introduction**

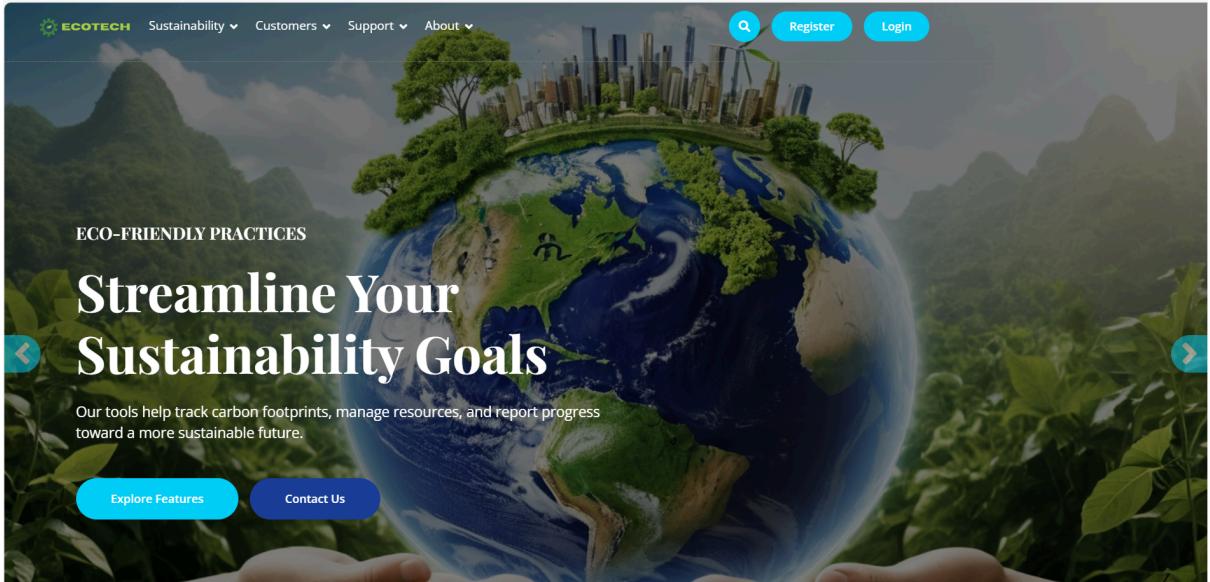
In today's era of rapid technological advancement, the entire world has started prioritizing sustainability to reduce environmental impact by complying with global standards due to the environmental crisis that is threatening the world's balance. Through EcoTech Sustainability Management System, it is an innovative web-based platform designed to help individuals monitor, manage and improve their sustainability efforts efficiently.

The system provides a centralized system for tracking carbon footprint, energy consumption, waste management and other key sustainability metrics. With data analytics and reporting, individuals can make informed decisions to improve their environmental performance and meet personal sustainability goals.

To integrate cutting-edge technology and a user-friendly interface, EcoTech Sustainability Management System is developed with Java EE, Servlet, JSP to ensure the system is functional and reliable by maintaining transparency, compliance and system efficiency and making process sustainability achievable.

## 2. User

1. Homepage Overview: The homepage serves as the entry point to EcoTech, providing quick access to the main features and an overview of how our tools help in sustainability management.



2. Access information about carbon emission reduction, circular economy promotion, and water conservation.

A screenshot of the 'Energy Efficiency' section of the EcoTech website. The top navigation bar is visible with the 'ECOTECH' logo and 'Sustainability' dropdown menu. The 'Energy Efficiency' tab is highlighted with a blue underline. Below the navigation, there's a sub-navigation menu with 'Carbon Tracking', 'Waste Management', and 'Water Conservation'. The main content area features a large blue lightning bolt icon above the heading 'Energy Efficiency'. A subtext explains: 'Energy efficiency is the key to reducing energy waste, minimizing environmental impact, and ensuring a sustainable future. By implementing advanced technologies and sustainable practices, we help individuals and organizations achieve optimal energy use while cutting costs.' There are four sections: 'Residential Solutions' (with a house icon), 'Commercial Solutions' (with a building icon), 'Energy Audits' (with a bar chart icon), and 'Renewable Energy Integration' (with a sun icon). At the bottom, there's a blue button labeled 'Login To Access Tool' and a URL in the address bar: 'localhost:8081/EcoTech/energy\_efficiency.jsp'.

3. Access locate contact details, including email, phone, and physical address.

The screenshot shows the 'Contact Us' page of the Ecotech website. At the top, there's a navigation bar with links for Sustainability, Customers, Support, and About. On the right side of the header are buttons for Register and Login. Below the header is a large banner featuring a globe and stylized children's drawings. In the center of the banner, the word 'Contact Us' is prominently displayed. Below the banner, the URL 'localhost:8081/EcoTech/contact\_us.htm' is visible. To the left of the main content area is a Google Map showing a local area with various landmarks labeled. To the right of the map are three contact options: 'Our Address' (physical address: 13-1, Jalan Desa 9/4, Bandar Country Homes, 48000 Rawang, Selangor), 'Email Us' (info@ecotech.com.my), and 'Call Us' (+603-8765 4310).

4. Access Frequently Asked Questions (FAQ)

The screenshot shows the 'FAQ' page of the Ecotech website. The layout is similar to the Contact Us page, with a header containing links for Sustainability, Customers, Support, and About, and buttons for Register and Login. The main title 'FAQ' is centered above a banner featuring a globe and children's drawings. Below the banner, the URL 'localhost:8081/EcoTech/FAQ.htm' is shown. The page content includes a section titled 'What is energy efficiency?' which is expanded, showing a definition: 'Energy efficiency refers to using less energy to perform the same task. It's about reducing energy waste while maintaining the same level of service or production.' Below this, there are three collapsed questions: 'How can businesses improve their sustainability?', 'What is carbon tracking?', and 'How can I contact support?'. A small circular arrow icon is located in the bottom right corner of the page.

5. Access from About > About Us. Learn about EcoTech's mission to revolutionize sustainability practices through innovative solutions and get to know the faces behind EcoTech

The screenshot shows the 'About Us' section of the EcoTech website. At the top, there is a navigation bar with links for Sustainability, Customers, Support, and About. Below the navigation, a main content area features a heading 'OUR BACKGROUND' with a paragraph about the company's mission to provide innovative solutions for sustainability. To the right, sections for 'OUR MISSION' and 'OUR VISION' are visible. The 'OUR TEAM' section at the bottom displays three team members: Sufian Bakar (Founder), Amirul Rosli (Co-Founder & CEO), and Afif Amuar (Co-Founder & Manager). Each team member has a portrait, name, title, and a small bio.

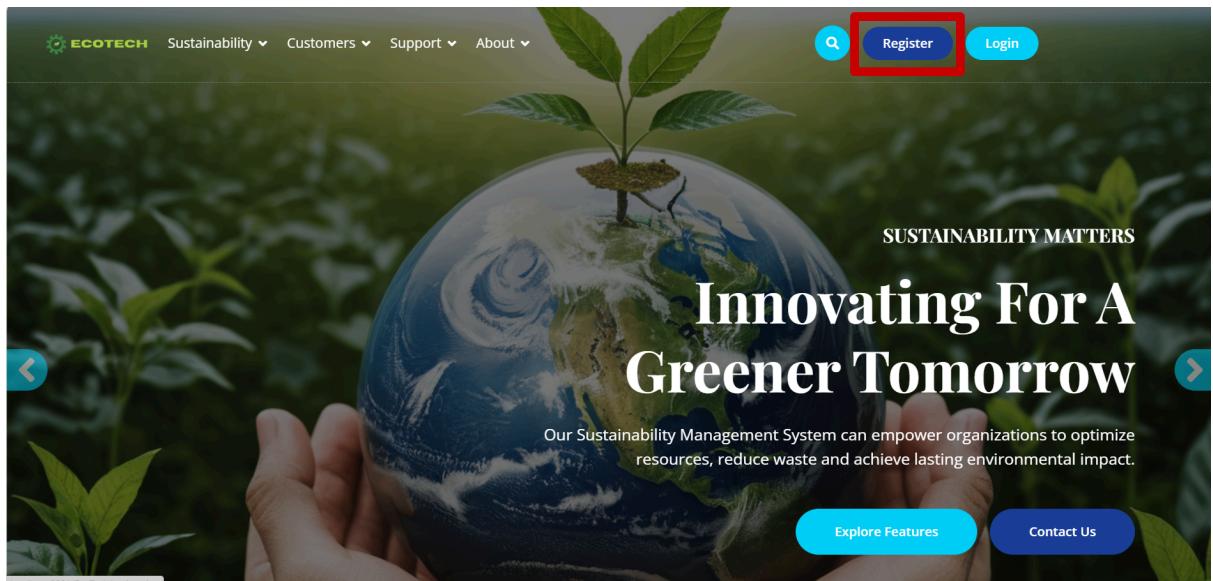
**OUR TEAM**

	<b>Sufian Bakar</b> Founder
	<b>Amirul Rosli</b> Co-Founder & CEO
	<b>Afif Amuar</b> Co-Founder & Manager

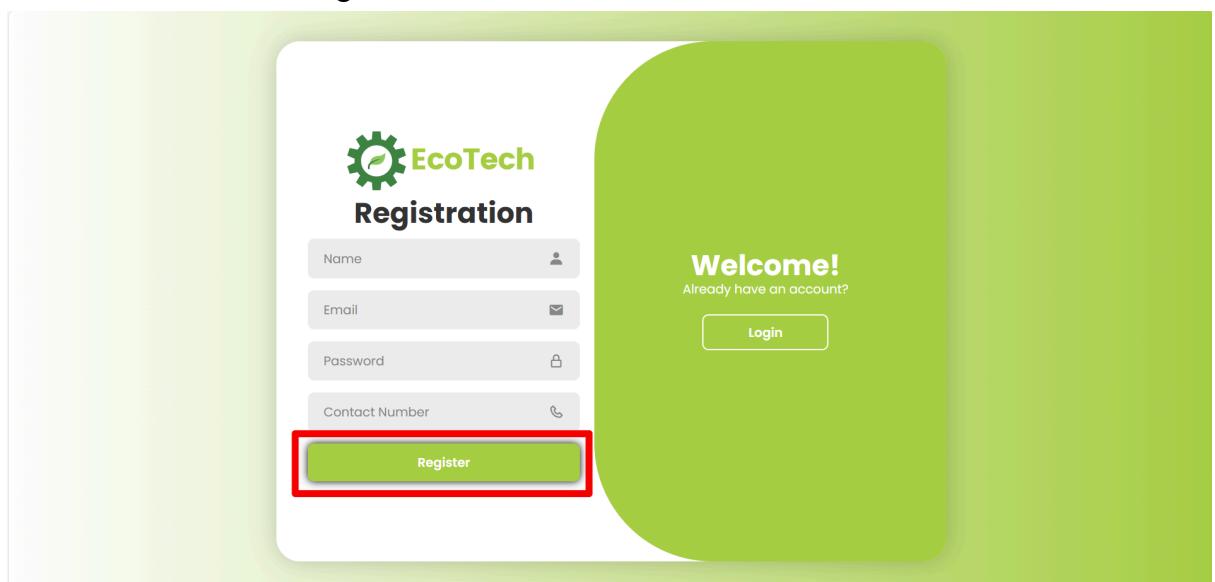
localhost:8081/EcoTech/aboutus.jsp

### 3. Customer

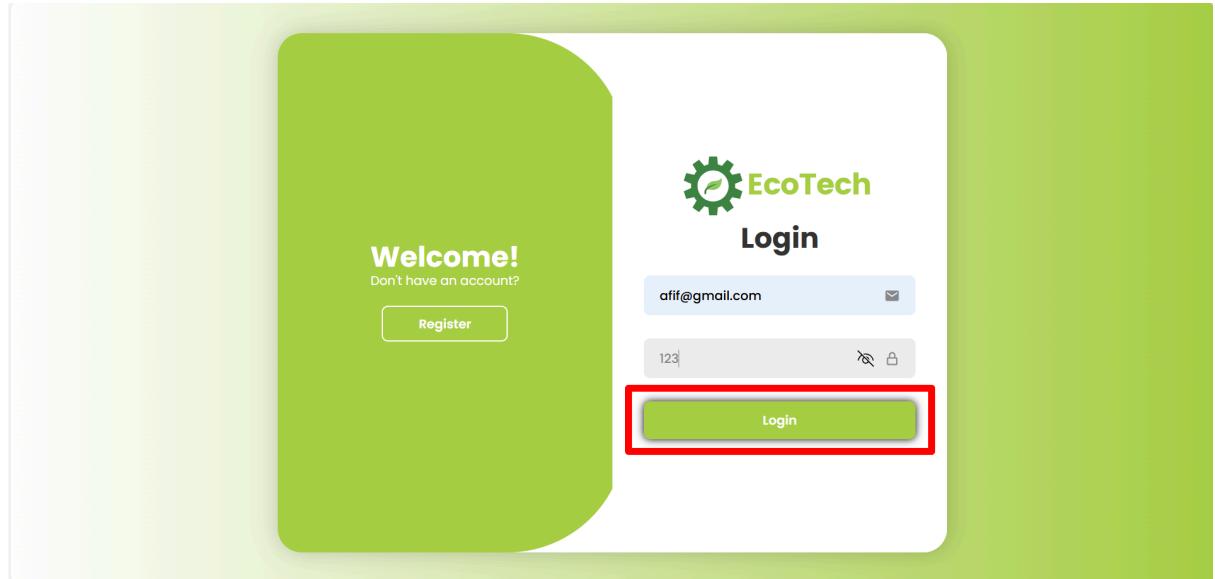
- From the homepage of our website customers can register as a user by clicking on the Register button.



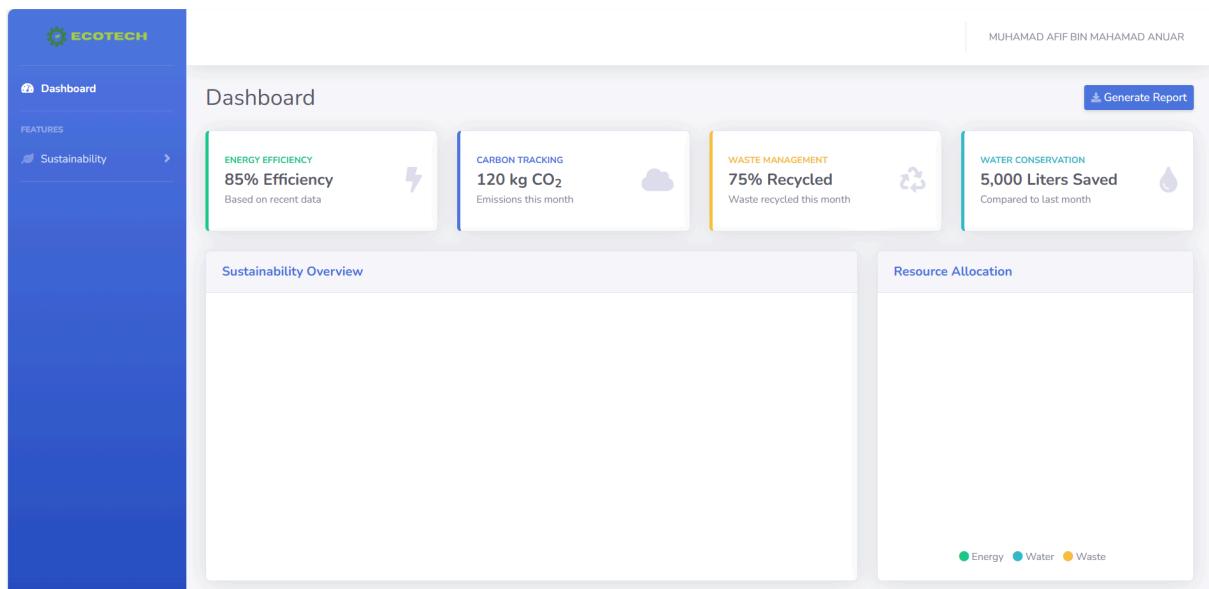
- On the Register Page, users must enter their Name, Email, Password and Contact Number then click the 'Register' button .



3. After register user will login their account by entering Email and Password then click 'Login' button.



4. As a user, the Dashboard provides an overview of your sustainability activities and performance metrics. It displays key features such as:  
Energy Efficiency, Carbon Tracking, Waste Management and Water Conservation.



- On the Project Record page, users can efficiently track and manage their resource usage related to sustainability projects.
  - Smart Irrigation
  - Water Recycling
  - Irrigation History
- Add Irrigation Record. Users must input details about resource usage such as resources type, quantity and recorded at then clicked on ‘Add Record’ button to save their irrigation record.

The screenshot shows the ECOTECH application's user interface. On the left, there is a sidebar with 'Dashboard', 'FEATURES', and 'Sustainability' options. The main content area has three sections: 'Smart Irrigation', 'Water Recycling', and 'Irrigation History'. The 'Smart Irrigation' section contains text about efficient watering solutions and a 'Learn More' button. Below it is a form titled 'Add Irrigation Record' with fields for 'Resource' (set to 'Water'), 'Quantity Used' (set to '1000'), and 'Recorded At' (set to '02/20/2025 03:23 AM'). A blue 'Add Record' button is at the bottom of this form, which is highlighted with a red rectangle. The 'Water Recycling' and 'Irrigation History' sections contain general information and 'Learn More' buttons.

- Users can record their resource usage by selecting the following details such as resource type, quantity and date recorded. Click the Submit button to save the entry.

The screenshot shows the 'Resources Usage Tracking' section of the ECOTECH application. It features a 'Log Resource Usage' form with fields for 'Resource' (set to 'Water'), 'Quantity' (set to '500'), and 'Date Recorded' (set to '02/20/2025 08:00 AM'). A blue 'Submit' button is at the bottom of this form, highlighted with a red rectangle. Below the form is an 'Edit Resource Usage' section with fields for 'Usage ID', 'New Quantity', and 'New Date Recorded'.

- Resource Usage History section displays a summary of past resource usage records, type of resource, the amount of resource consumed, and the date and time of resource usage. Additionally, the Edit button allows users to easily update specific records.

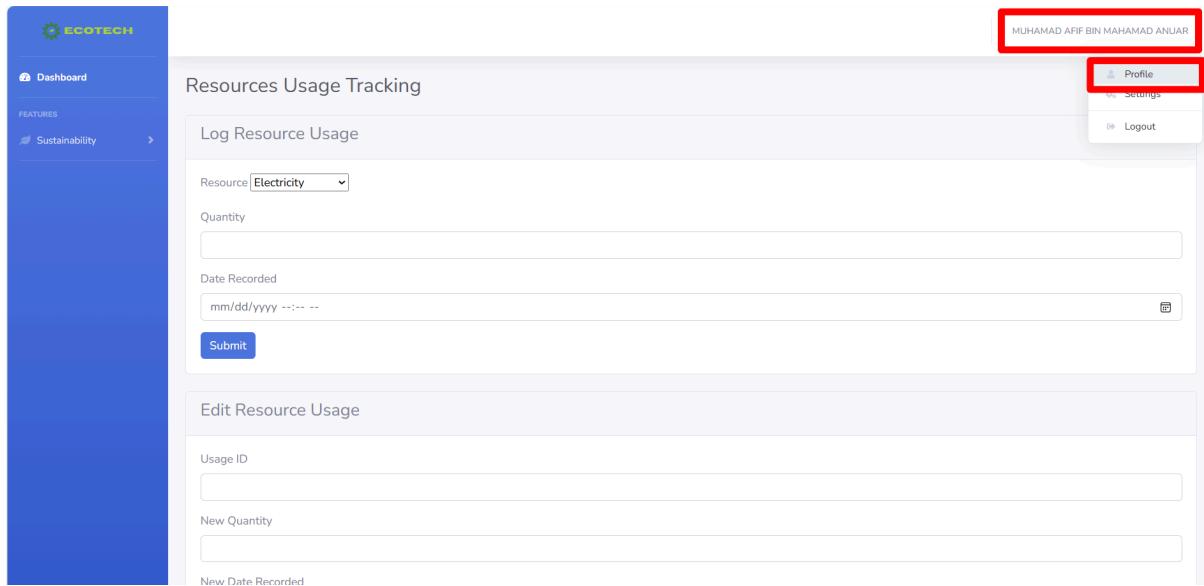
The screenshot shows a user interface for managing resource usage. At the top, there is a blue sidebar. Below it, the main content area has a header "Edit Resource Usage" with a "Submit" button. Below this are three input fields: "Usage ID" (empty), "New Quantity" (empty), and "New Date Recorded" (empty). Below these is an "Update" button. Underneath this section is a table titled "Your Resource Usage History". The table has columns: ID, Resource, Quantity, Date Recorded, and Action. It contains two rows: one for Electricity (ID 1) and one for Water (ID 2). Each row has an "Edit" button in the "Action" column, with the Water row's "Edit" button highlighted by a red rectangle.

ID	Resource	Quantity	Date Recorded	Action
1	Electricity	100 kWh	2025-02-21 10:00	<button>Edit</button>
2	Water	50 Liters	2025-02-20 08:00	<button>Edit</button>

9. Next, Users must enter the usage ID, the new quantity of the resource consumed, and the new date then clicking the Update button.

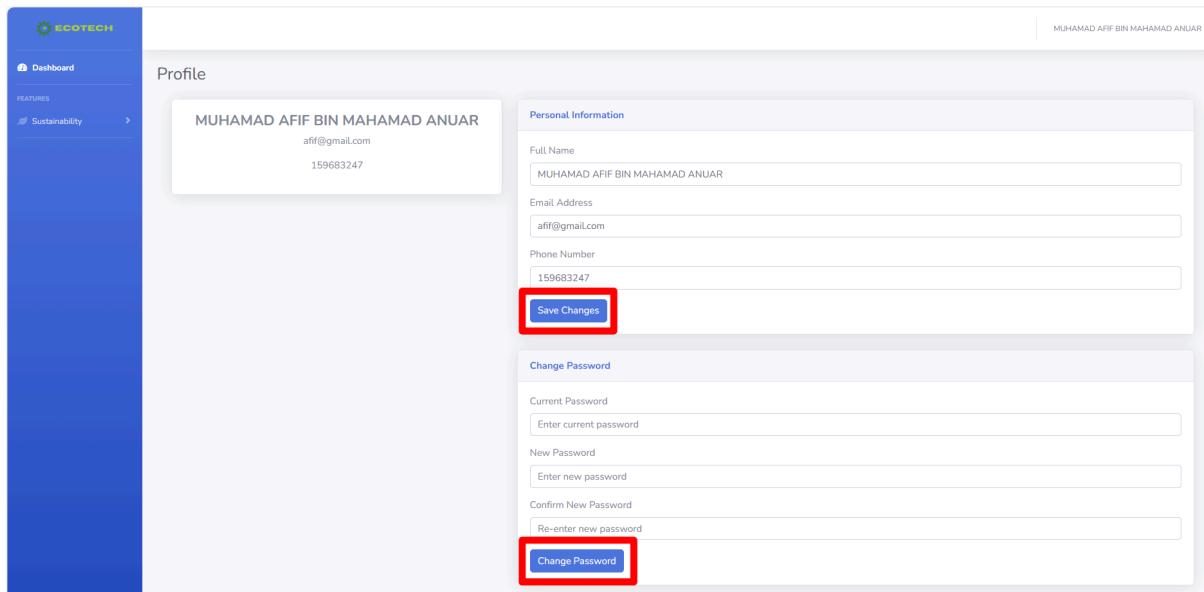
This screenshot shows the same "Edit Resource Usage" form as the previous one, but with a red rectangle highlighting the "Update" button at the bottom left of the form area.

10. The user profile menu is accessible by clicking on the username displayed at the top right corner of the screen. Then click Profile to view profile update page.



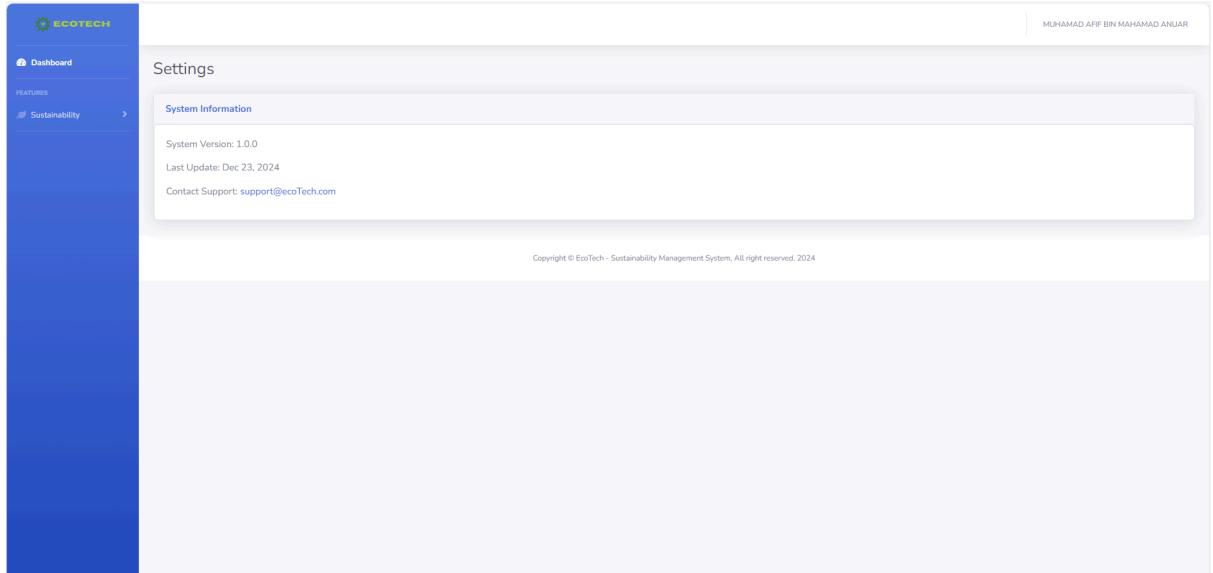
The screenshot shows the 'Resources Usage Tracking' interface. On the left, there's a sidebar with 'ECOTECH' logo, 'Dashboard', 'FEATURES', and 'Sustainability'. The main area has a form titled 'Log Resource Usage' with fields for 'Resource' (set to 'Electricity'), 'Quantity', 'Date Recorded' (a date input field), and a 'Submit' button. Below it is another section titled 'Edit Resource Usage' with fields for 'Usage ID', 'New Quantity', and 'New Date Recorded'. In the top right corner, there's a user profile menu with options: 'Profile' (highlighted with a red box), 'Settings', and 'Logout'. The user name 'MUHAMAD AFIF BIN MAHAMAD ANUAR' is also displayed.

11. On the Profile page, edit your personal details and click Save Changes to update them. To change your password, enter your current password, the new password twice, and click Change Password.

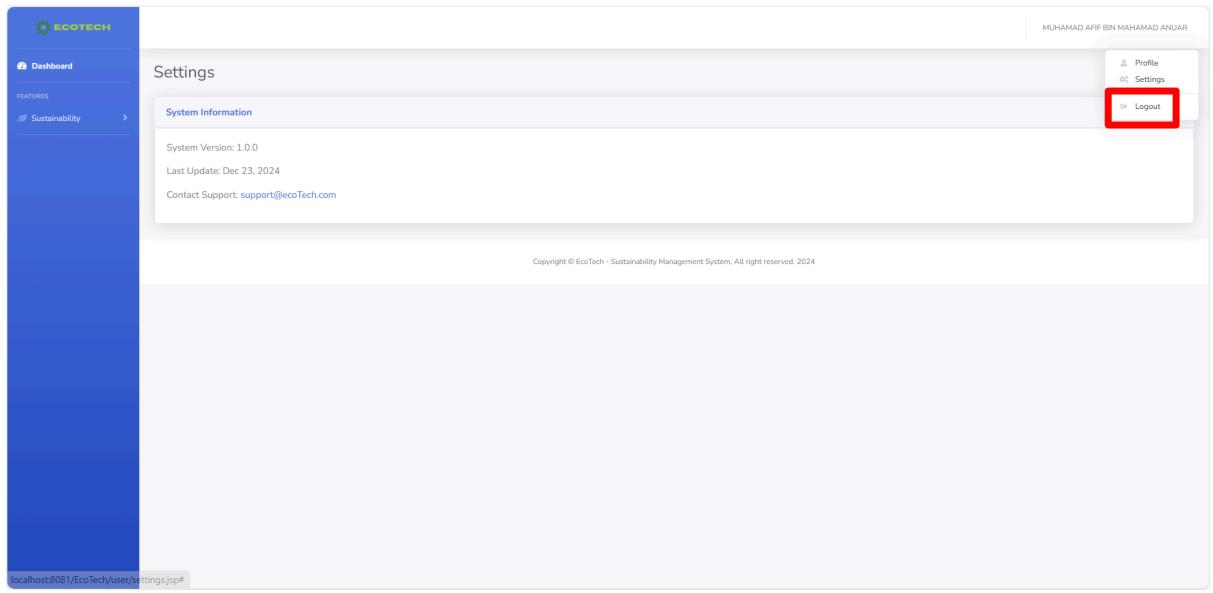


The screenshot shows the 'Profile' page. The left sidebar is identical to the previous screenshot. The main area has two sections: 'Personal Information' and 'Change Password'. In the 'Personal Information' section, there's a summary box for 'MUHAMAD AFIF BIN MAHAMAD ANUAR' with email 'aff@gmail.com' and phone '159683247'. Below it are fields for 'Full Name' (set to 'MUHAMAD AFIF BIN MAHAMAD ANUAR'), 'Email Address' ('aff@gmail.com'), and 'Phone Number' ('159683247'). A 'Save Changes' button is highlighted with a red box. In the 'Change Password' section, there are four input fields: 'Current Password' (placeholder 'Enter current password'), 'New Password' (placeholder 'Enter new password'), 'Confirm New Password' (placeholder 'Re-enter new password'), and 'Change Password' (a large blue button highlighted with a red box). The top right corner shows the user name 'MUHAMAD AFIF BIN MAHAMAD ANUAR'.

12. On the Settings page, view the system version, last update date, and support contact details. For assistance, reach out to the support team using the provided email.

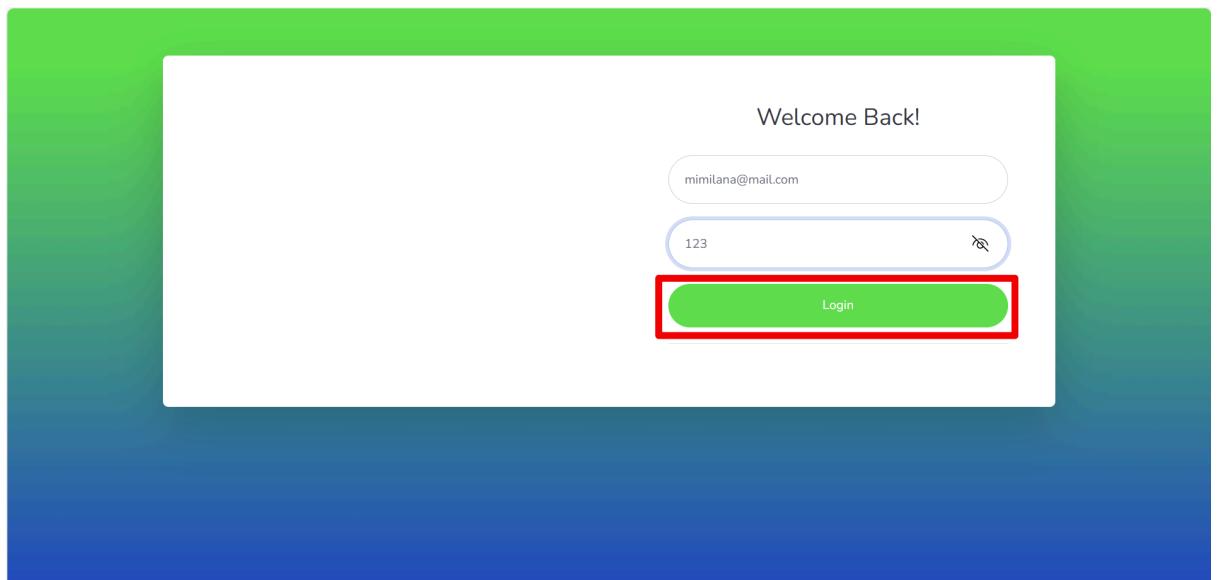


13. To log out, click on your name at the top right and select Logout from the dropdown menu. This will end your session and redirect you to the login page.

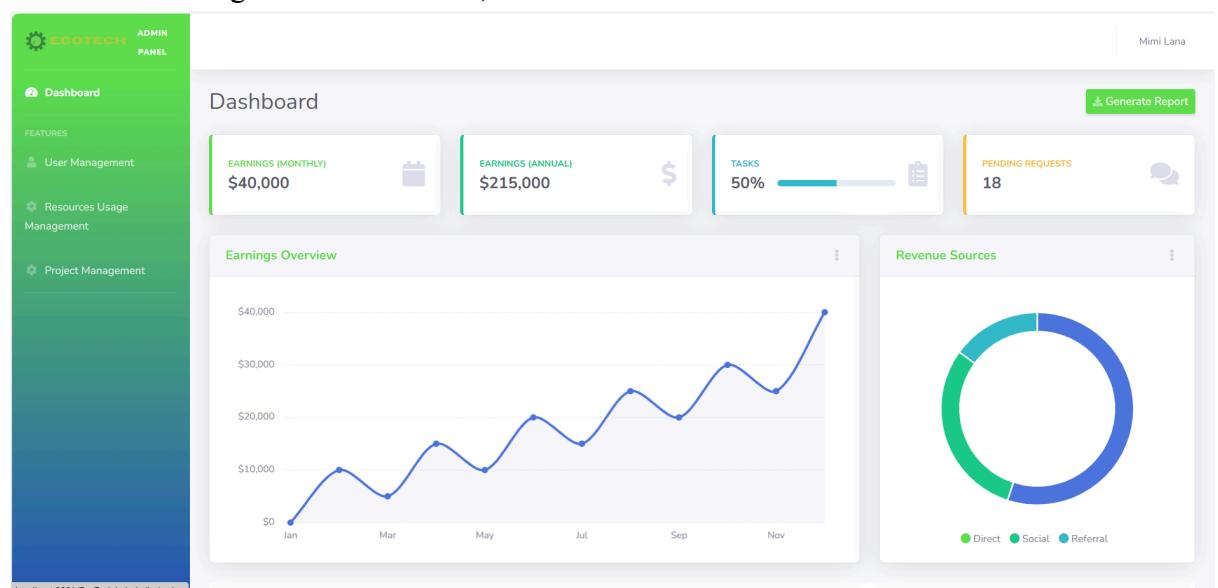


## 4. Administrator

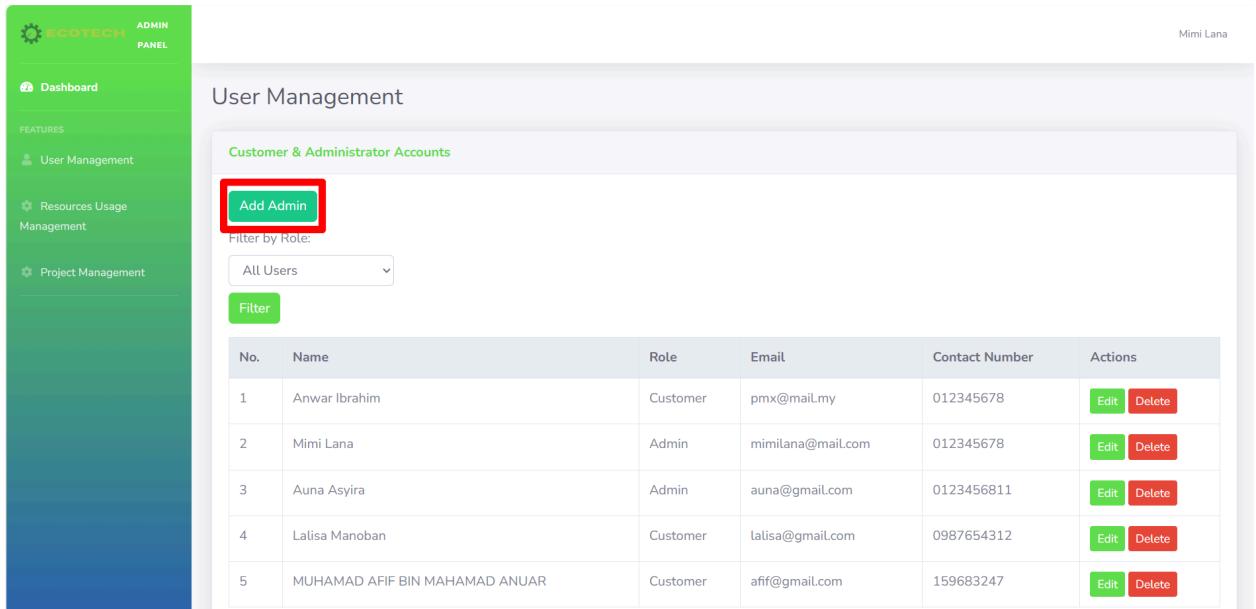
- To log in, admin must enter email and password, then click the Login button. This will grant you access to your dashboard.



- After admin log in their credential, it will redirect to admin dashboard.

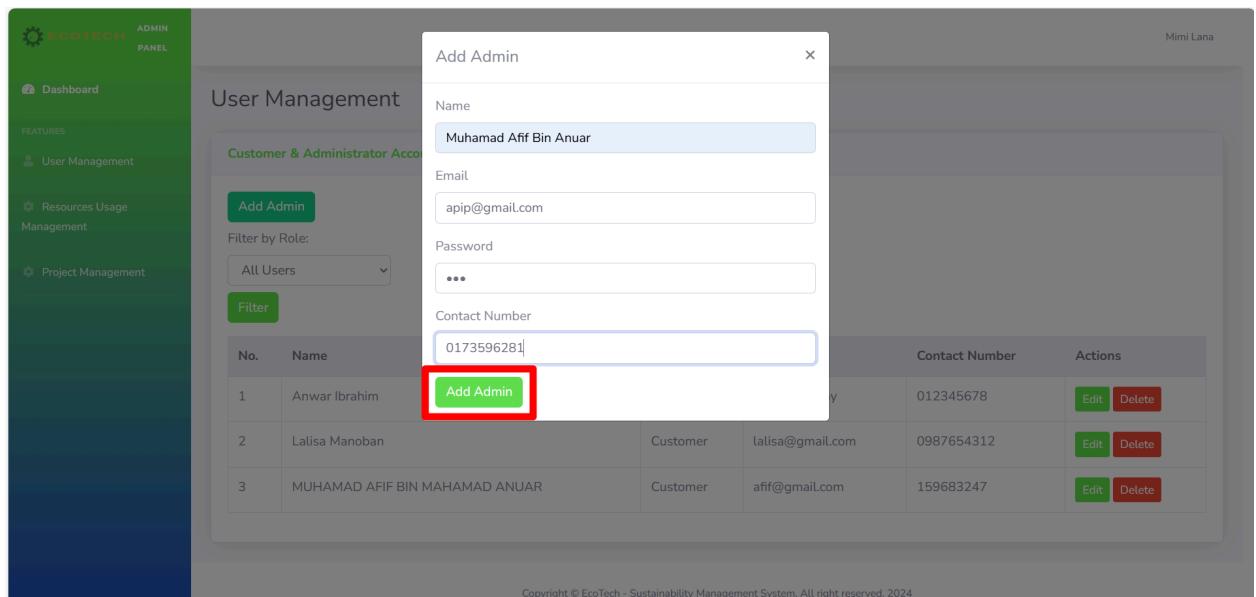


3. For register new admin, admin need to click the “Add Admin” button at User Management page which it automatically show the the form of admin details.



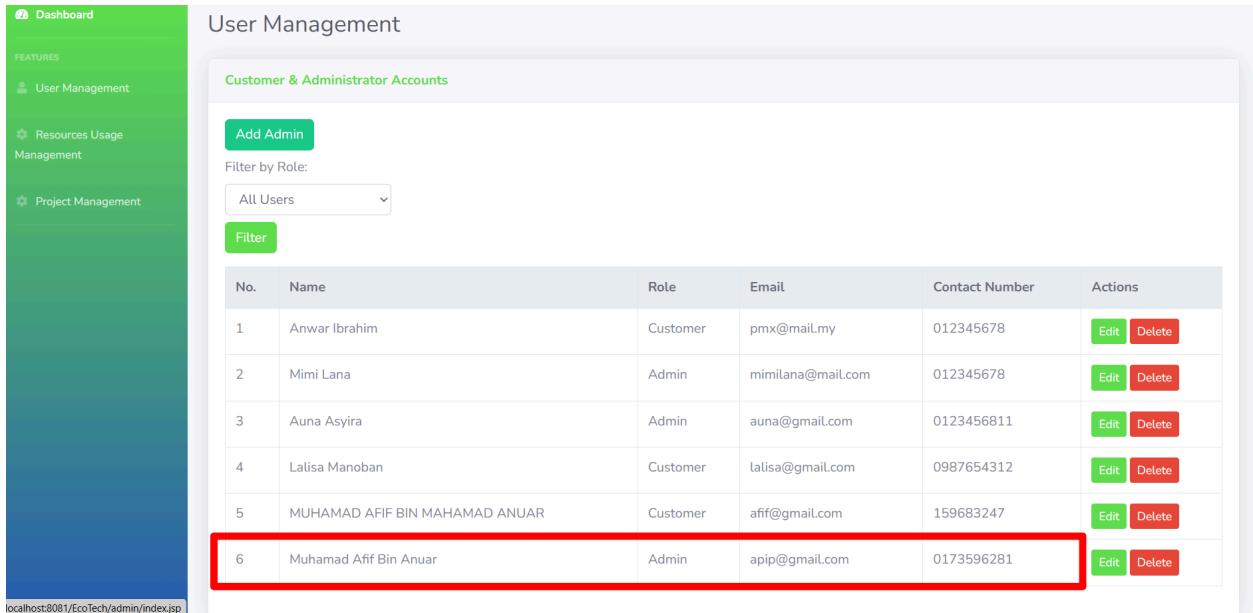
The screenshot shows the 'User Management' page of the EcoTech Admin Panel. The left sidebar has 'ECOTECH ADMIN PANEL' at the top, followed by 'Dashboard', 'FEATURES' (with 'User Management' selected), 'Resources Usage Management', and 'Project Management'. The main area is titled 'User Management' and contains a sub-section 'Customer & Administrator Accounts'. A green 'Add Admin' button is highlighted with a red box. Below it is a dropdown menu 'Filter by Role:' set to 'All Users' and a 'Filter' button. A table lists five users with columns: No., Name, Role, Email, Contact Number, and Actions (Edit and Delete buttons). The users are: 1. Anwar Ibrahim (Customer, pmx@mail.my, 012345678), 2. Mimi Lana (Admin, mimilana@mail.com, 012345678), 3. Auna Asyira (Admin, auna@gmail.com, 0123456811), 4. Lalisa Manoban (Customer, lalisa@gmail.com, 0987654312), and 5. MUHAMAD AFIF BIN MAHAMAD ANUAR (Customer, afif@gmail.com, 159683247).

4. Next, admin need insert the admin details such as name, email, password, contact number. If done insert the data, admin just click the “Add Admin” button to save the data into the system.



The screenshot shows the 'Add Admin' modal dialog over the User Management page. The modal has fields for 'Name' (Muhamad Afif Bin Anuar), 'Email' (apij@gmail.com), 'Password' (three asterisks), and 'Contact Number' (0173596281). The 'Add Admin' button is highlighted with a red box. The background shows the same User Management interface as the previous screenshot.

5. After added the admin successfully, the system will show the latest list of the admin in User Management page.

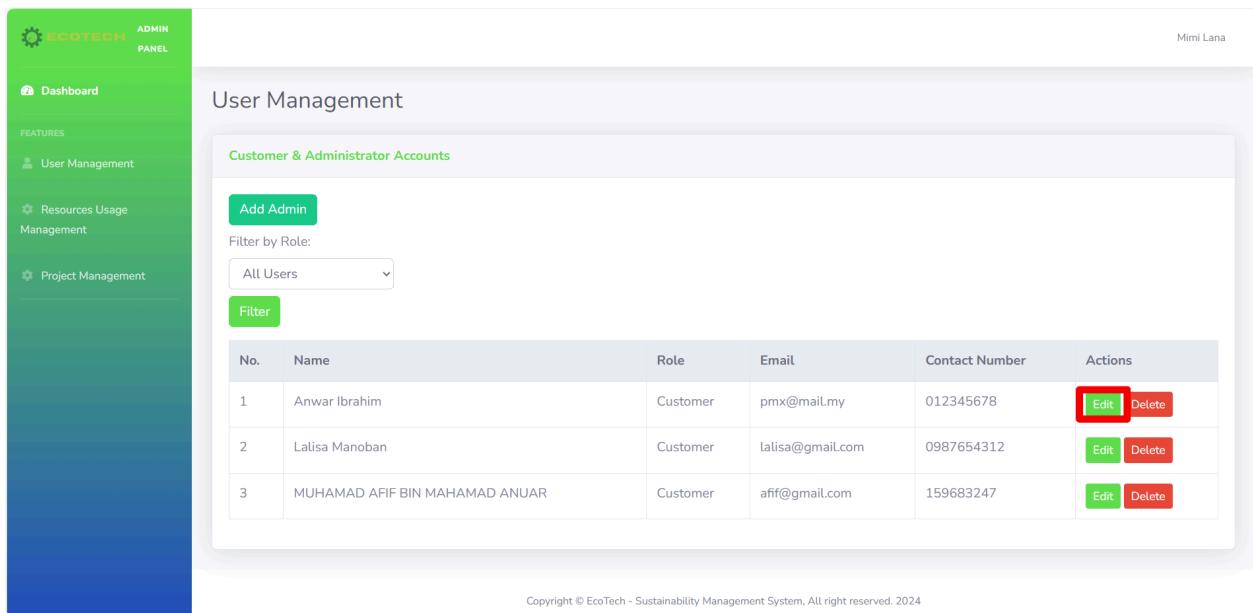


The screenshot shows the 'User Management' page with the following details:

- Left Sidebar:** Shows 'Dashboard', 'FEATURES' (User Management, Resources Usage Management, Project Management), and the URL 'localhost:8081/EcoTech/admin/index.jsp'.
- Header:** 'Customer & Administrator Accounts'.
- Buttons:** 'Add Admin', 'Filter by Role' dropdown set to 'All Users', and a 'Filter' button.
- Table Headers:** No., Name, Role, Email, Contact Number, Actions.
- Data:**

No.	Name	Role	Email	Contact Number	Actions
1	Anwar Ibrahim	Customer	pmx@mail.my	012345678	Edit Delete
2	Mimi Lana	Admin	mimilana@mail.com	012345678	Edit Delete
3	Auna Asyira	Admin	auna@gmail.com	0123456811	Edit Delete
4	Lalisa Manoban	Customer	lalisa@gmail.com	0987654312	Edit Delete
5	MUHAMAD AFIF BIN MAHAMAD ANUAR	Customer	afif@gmail.com	159683247	Edit Delete
6	Muhamad Afif Bin Anuar	Admin	apip@gmail.com	0173596281	Edit Delete

6. To edit, admin need click the “Edit” button.



The screenshot shows the 'User Management' page with the following details:

- Left Sidebar:** Shows 'Dashboard', 'FEATURES' (User Management, Resources Usage Management, Project Management), and the URL 'localhost:8081/EcoTech/admin/index.jsp'.
- Header:** 'Customer & Administrator Accounts'.
- Buttons:** 'Add Admin', 'Filter by Role' dropdown set to 'All Users', and a 'Filter' button.
- Table Headers:** No., Name, Role, Email, Contact Number, Actions.
- Data:**

No.	Name	Role	Email	Contact Number	Actions
1	Anwar Ibrahim	Customer	pmx@mail.my	012345678	Edit Delete
2	Lalisa Manoban	Customer	lalisa@gmail.com	0987654312	Edit Delete
3	MUHAMAD AFIF BIN MAHAMAD ANUAR	Customer	afif@gmail.com	159683247	Edit Delete

7. Next, the system bring admin to User Edit page to admin update the admin details.

The screenshot shows the 'Edit User' form. It contains fields for Name (Daniel Putra), Email (daniel@mail.my), Role (Customer), and Contact Number (0123127524). A red box highlights the 'Update' button at the bottom right of the form.

8. After admin updated the details, the system bring to the User Management page and show the latest list of user who used in this system.

The screenshot shows the 'User Management' page. It displays a table of users with columns: No., Name, Role, Email, Contact Number, and Actions. The first row, which corresponds to the updated user from the previous step, is highlighted with a red box. The 'Actions' column for this row contains 'Edit' and 'Delete' buttons.

No.	Name	Role	Email	Contact Number	Actions
1	Daniel Putra	Customer	daniel@mail.my	0123127524	<button>Edit</button> <button>Delete</button>
2	Lalisa Manoban	Customer	lalisa@gmail.com	0987654312	<button>Edit</button> <button>Delete</button>
3	MUHAMAD AFIF BIN MAHAMAD ANUAR	Customer	afif@gmail.com	159683247	<button>Edit</button> <button>Delete</button>

9. For Project Management, admin need to add project by insert the value, choose date and time, project id and metrics id at Add New Project section same as add New Metric Record

The screenshot shows a web-based application for Project Management. On the left, there's a sidebar with a green gradient background containing a 'Dashboard' icon and a 'FEATURES' section with 'User Management', 'Resources Usage Management', and 'Project Management' (which is selected). The main content area has a light gray background. It contains two separate sections, each titled with a small icon: 'Add New Project' and 'Add New Metric Record'. Each section has four input fields: 'Value' (with a dropdown arrow), 'Recorded At' (a date/time picker), 'Project ID' (text input), and 'Metric ID' (text input). Below each set of fields is a blue rectangular button labeled 'Add Metric Record'. The 'Add Metric Record' button in the 'Add New Project' section is highlighted with a red rectangular border.

10. In this feature of Project Management also here have Resources Usage History which is here admin supposedly can see the project data from customer which customer insert the data of their project tracking by see the details that customer made..

The screenshot shows a web-based application for managing resources. The URL in the browser is 'localhost:8080/EcoTech/admin/manage\_resources.jsp'. The interface has a green gradient sidebar on the left with a 'Management' icon and a 'Project Management' section. The main content area has a white background. At the top, there's a search form with 'From Date' and 'To Date' fields (both set to 'mm/dd/yyyy') and a 'Filter' button. Below the search form is a table with a light gray header row and two data rows. The table is titled 'Resource Usage History' and has columns: 'Usage ID', 'Customer', 'Resource', 'Quantity', 'Date Recorded', and 'Actions'. The first row shows 'Usage ID' 1, 'Customer' John Doe, 'Resource' Electricity, 'Quantity' 100 kWh, 'Date Recorded' 2025-02-21 10:00, and 'Actions' with 'Edit' and 'Delete' buttons. The second row shows 'Usage ID' 2, 'Customer' Jane Smith, 'Resource' Water, 'Quantity' 50 Liters, 'Date Recorded' 2025-02-20 08:00, and 'Actions' with 'Edit' and 'Delete' buttons. At the bottom of the table, there's a copyright notice: 'Copyright © EcoTech - Sustainability Management System. All right reserved. 2024'.

11. For Resources Usage Management page, admin can resources usage data by using Filter Resource Usage section which admin can see list of the resources usage of the customer made which it will by display the table at Resources Usage History section

The screenshot shows the 'Resources Usage Management' page. On the left is a green sidebar with the 'ECOTECH ADMIN PANEL' logo and navigation links for 'Dashboard', 'User Management', 'Resources Usage Management', and 'Project Management'. The main content area has a title 'Resources Usage Management' and a 'Filter Resource Usage' section. It includes fields for 'Resource' (a dropdown menu), 'From Date' (a date input field), 'To Date' (another date input field), and a 'Filter' button. Below this is a 'Resource Usage History' section containing a table with columns: Usage ID, Customer, Resource, Quantity, Date Recorded, and Actions. The table currently has no data.

12. For admin who want to update their details, they can update their details such as email, password and contact number at Profile page.

The screenshot shows the 'Profile' page. The left sidebar is identical to the one in the previous screenshot. The main content area has a title 'Profile' and a form for updating user details. It includes fields for 'Email Address' (containing 'awie14@mail.com'), 'Password' (a password input field with placeholder text 'Enter new password (leave empty to keep current password)'), 'Contact Number' (containing '0987654312'), and a 'Save Changes' button. At the bottom of the page, there is a copyright notice: 'Copyright © EcoTech - Sustainability Management System. All right reserved. 2024'.

13. Here are the settings of admin panel which display the system information.

The screenshot shows the 'Settings' page of the EcoTech Admin Panel. The left sidebar has a green gradient background and lists 'Dashboard', 'User Management', 'Resources Usage Management', and 'Project Management'. The main content area is titled 'Settings' and contains a 'System Information' section. This section displays the 'System Version: 1.0.0', 'Last Update: Dec 23, 2024', and 'Contact Support: support@ecoTech.com'. At the bottom right of the content area, there is a small copyright notice: 'Copyright © EcoTech - Sustainability Management System. All right reserved. 2024'. In the top right corner of the main content area, there is some faint text: 'awie'.

14. For admin who want end the session, they can click the Logout button at their name (at the top right side of the page).

The screenshot shows the same 'Settings' page as the previous one, but with a red box highlighting the top right corner of the main content area. This corner contains a user profile icon and the text 'awie'. Below this, there is a dropdown menu with three options: 'Profile', 'Settings', and 'Logout'. The 'Logout' option is also highlighted with a red box. The rest of the page, including the sidebar and the system information section, remains the same as in the first screenshot.