



BSc in Information Technology

Supplier Management System Documentation

IT 255 – ADVANCED PROGRAMMING WITH JAVA II

Assignment 02 – 2024(I)

Name -: W.D.J.I. Samaranayaka

Index num -: BSc/WD/22/35/05

Faculty of Information Technology

Sri Lanka International Buddhist Academy

Pallekale, Kundasale

2023

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1. Introduction

In today's dynamic business environment, effective supplier management is crucial for the success and sustainability of organizations across industries. The Supplier Management System is a sophisticated web-based application meticulously crafted using Java EE technologies, including Servlets and JSP, to address the challenges associated with supplier information management.

2. Overview

The Supplier Management System is a web-based application developed using Java EE technologies, specifically Servlets and JSP. This system is designed to streamline the management of supplier information for businesses or organizations. Users can perform CRUD (Create, Read, Update, Delete) operations on supplier data, facilitating efficient management of supplier relationships.

3. Features

1. Supplier CRUD Operations: Users can perform the following operations on supplier data:
 - Create: Add new suppliers to the system.
 - Read: View detailed information about existing suppliers.
 - Update: Modify existing supplier details as needed.
 - Delete: Remove suppliers from the system.
2. User Authentication: Secure login functionality ensures that only authorized users can access and manipulate supplier data.
3. Responsive User Interface: The system provides a user-friendly interface that is accessible via web browsers, allowing users to efficiently manage supplier information from any device with internet connectivity.

4. Technologies Used

- Java EE: The core technologies used for backend development.
- Servlets: Handle HTTP requests and generate dynamic web content.
- JSP (JavaServer Pages): Used for rendering dynamic content to the user interface.
- HTML/CSS/JavaScript: Frontend technologies used for designing and enhancing the user interface.
- MySQL/PostgreSQL: Relational databases used for storing and managing supplier data.
- Tomcat/Jetty: Servlet containers for deploying and running the web application.

5. Installation

1. Prerequisites:

- Java Development Kit (JDK)
- Apache Tomcat or any other Servlet container
- MySQL or PostgreSQL database server

2. Setup Steps:

- Clone the Supplier Management System repository from.
- Configure the database connection parameters in the application configuration file.
- Deploy the application on the Servlet container.
- Access the application through a web browser.

6. Usage

1. Login:

- Access the application using the provided URL.
- Enter valid credentials to log in.

2. Supplier Management

Once logged in, users can perform CRUD operations on supplier data through the respective interface. The Supplier Management section provides a comprehensive set of tools to manage supplier information efficiently.

i. Adding a New Supplier

To add a new supplier, follow these steps:

- Navigate to the "Add Supplier" section.
- Provide the required details such as supplier name, contact information, address, etc.
- Submit the form to add the supplier to the system.

ii. Viewing Suppliers

To view existing suppliers, follow these steps:

- Navigate to the "View Suppliers" section.
- Browse through the list of suppliers to find the desired information.
- View detailed supplier information including contact details, address, and any additional data stored in the system.

iii. Updating Supplier Information

To update existing supplier details, follow these steps:

- Navigate to the "Update Supplier" section.
- Select the supplier you wish to update from the list.
- Modify the necessary fields with the updated information.
- Save the changes to update the supplier's data in the system.

iv. Deleting Suppliers

To delete a supplier from the system, follow these steps:

- Navigate to the "Delete Supplier" section.

- Confirm the deletion action.
- Select the supplier you want to remove from the list.

3. User Management

The User Management section provides tools for managing user accounts and permissions within the system.

i. Adding a New User

To add a new user, follow these steps:

- Navigate to the "Add User" section.
- Enter the required user details such as username, email, password, etc.
- Assign appropriate roles and permissions to the user.
- Save the changes to create the new user account.

ii. Viewing Users

To view existing users and their details, follow these steps:

- Navigate to the "View Users" section.
- Browse through the list of users to find the desired information.
- View user details including username, email, roles, and permissions.

iii. Updating User Information

To update user details, follow these steps:

- Navigate to the "Update User" section.
- Select the user you wish to update from the list.
- Modify the necessary fields with the updated information.
- Save the changes to update the user's data in the system.

iv. Deleting Users

To delete a user from the system, follow these steps:

- Navigate to the "Delete User" section.
- Confirm the deletion action.
- Select the user you want to remove from the list.
- The system will remove the selected user account from the database.

4. Purchase Order Management

The Purchase Order Management section allows users to create, view, update, and delete purchase orders within the system.

i. Adding a New Purchase Order

To create a new purchase order, follow these steps:

- Navigate to the "Create Purchase Order" section.
- Fill in the required details such as supplier information, order items, quantity, etc.
- Submit the form to generate the purchase order.

ii. Viewing Purchase Orders

To view existing purchase orders, follow these steps:

- Navigate to the "View Purchase Orders" section.
- Browse through the list of purchase orders to find the desired information.
- View detailed information about each purchase order including supplier, order date, items, quantity, etc.

iii. Deleting Purchase Orders

To delete a purchase order, follow these steps:

- Navigate to the "Delete Purchase Order" section.
- Confirm the deletion action.
- Select the purchase order you want to remove from the list.
- The system will remove the selected purchase order from the database.

5. Product Management

The Product Management section allows users to manage product information within the system.

i. Adding a New Product

To add a new product, follow these steps:

- Navigate to the "Add Product" section.
- Enter the required product details such as name, description, price, etc.
- Save the change to add the product to the system.

ii. Viewing Products

To view existing products, follow these steps:

- Navigate to the "View Products" section.
- Browse through the list of products to find the desired information.

- View detailed information about each product including name, description, price, etc.

iii. Updating Product Information

To update product details, follow these steps:

- Navigate to the "Update Product" section.
- Select the product you wish to update from the list.
- Modify the necessary fields with the updated information.
- Save the changes to update the product's data in the system.

iv. Deleting Products

To delete a product from the system, follow these steps:

- Navigate to the "Delete Product" section.
- Confirm the deletion action.
- Select the product you want to remove from the list.
- The system will remove the selected product from the database.

6. User Audit

The User Audit section provides a log of user activities and system events for auditing purposes.

i. Viewing Audit Logs

To view user audit logs, follow these steps:

- Navigate to the "Audit Logs" section.
- Browse through the list of logs to find the desired information.
- View details of user activities, including login/logout events, CRUD operations, etc.

7. Report Generation

The Report Generation section allows users to generate various reports based on system data.

i. Generating Reports

To generate reports, follow these steps:

- Navigate to the "Generate Reports" section.
- Select the type of report you wish to generate (e.g., supplier report, purchase order report, etc.).
- Configure report parameters such as date range, filters, etc.
- Generate the report and view/download the generated document.

8. Registration

To create a new user account and register within the system, follow these steps:

- Access the application using the provided URL.
- Navigate to the "Register" or "Create Account".
- Fill in the required registration details such as username, email address, password, etc.
- Optionally, provide additional information as prompted by the registration form.
- After completing the registration form, review the entered information for accuracy.
- Submit the registration form by clicking the "Register" or "Create Account" button.
- Upon successful registration and verification, you will receive a confirmation message or notification.
- You can now proceed to log in to the application using the newly created user credentials.

9. Search

- ✓ Supplier Management: Search for suppliers by name, contact information, or other relevant attributes.
- ✓ Users: Search for users by username, email address, or role.
- ✓ Purchase Orders: Search for purchase orders by order number, supplier name, or order date.
- ✓ Products: Search for products by name, description, or category.
- ✓ User Audit: Search for audit logs by user activity, timestamp, or specific actions.

10. Audit Tables

- User Audit
- Supplier Audit
- Product Audit
- Purchase Order Audit

11. Secure
Password hashing and encryption.

12. Reports

- Generation of various reports for analysis.
- Insights into supplier, product, and purchase data.

7. Screenshots

Login

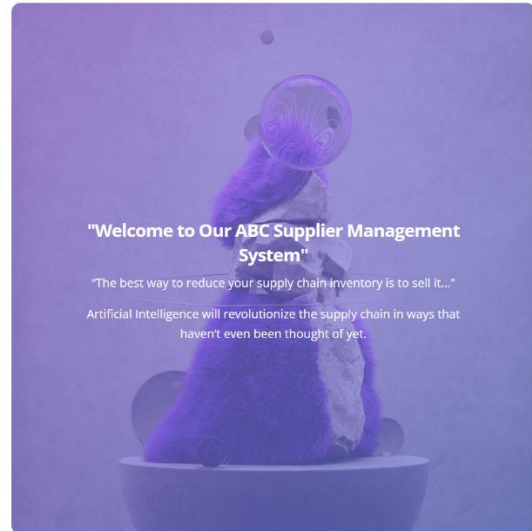
Login

Enter your email and password to log in

☐ Remember me

Please Log

Don't have an account? [Sign up](#)



Register

Welcome!

Use these awesome forms to login or create new account.

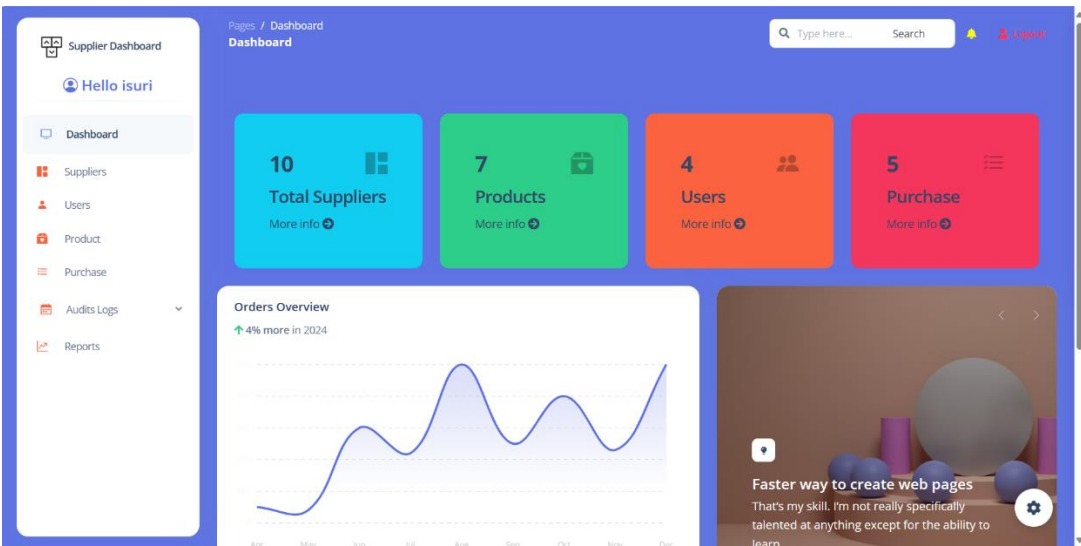
Register

or

☒ I agree the [Terms and Conditions](#)

Already have an account? [Sign in](#)

Dashboard



Supplier Table






















Suppliers								
ID	NAME	CONTACT PERSON	EMAIL	PHONE	ADDRESS	CITY	COUNTRY	POS
1	ABC Electronics	John Doe	john@example.com	123-456-7890	123 Main Street	Washington	USA	
2	XYZ Technologies	Jane Smith	jane@example.com	987-654-3210	456 Elm Street	London	UK	
3	Clothing Brands	Sam Johnson	sam@example.com	456-789-0123	789 Oak Street	Ottawa	Canada	
9	Apple Asia	Michael Brown	michael@example.com	111-222-3333	321 Maple Avenue	Vienna	Australia	
10	Cosmetics	Emily Wilson	emily@example.com	555-666-7777	987 Pine Road	Berlin	Germany	
11	Midlands	David Lee	david@example.com	999-888-7777	741 Birch Lane	Paris	France	
12	Mobile shops	Sophia Rodriguez	sophia@example.com	777-888-9999	852 Cedar Street	Madrid	Spain	
13	Kids Toys	Daniel Martinez	daniel@example.com	444-333-2222	369 Oak Avenue	Rome	Italy	
14	Vehicle	Olivia Taylor	olivia@example.com	666-555-4444	456 Walnut Drive	Tokyo	Japan	
15	Spa Ceylon	William Moore	william@example.com	081-333-4444	963 KCC	Kandy	SriLanka	

Pages / Dashboard
Dashboard

Type here...
Search
Logout

Suppliers

Add Suppliers

CONTACT PERSON	EMAIL	PHONE	ADDRESS	CITY	COUNTRY	POSTAL CODE	OPTION
John Doe	john@example.com	123-456-7890	123 Main Street	Washington	USA	12345	 
Jane Smith	jane@example.com	987-654-3210	456 Elm Street	London	UK	54323	 
Sam Johnson	sam@example.com	456-789-0123	789 Oak Street	Ottawa	Canada	67890	 
Michael Brown	michael@example.com	111-222-3333	321 Maple Avenue	Vienna	Australia	13579	 
Emily Wilson	emily@example.com	555-666-7777	987 Pine Road	Berlin	Germany	24680	 
David Lee	david@example.com	999-888-7777	741 Birch Lane	Paris	France	98765	 
Sophia Rodriguez	sophia@example.com	777-888-9999	852 Cedar Street	Madrid	Spain	01234	 
Daniel Martinez	daniel@example.com	444-333-2222	369 Oak Avenue	Rome	Italy	56789	 
Olivia Taylor	olivia@example.com	666-555-4444	456 Walnut Drive	Tokyo	Japan	10101	 
William Moore	william@example.com	081-333-4444	963 KCC	Kandy	SriLanka	2002	  

Add Supplier

Add Suppliers

supplier_name

contact_person

email

phone_number

address

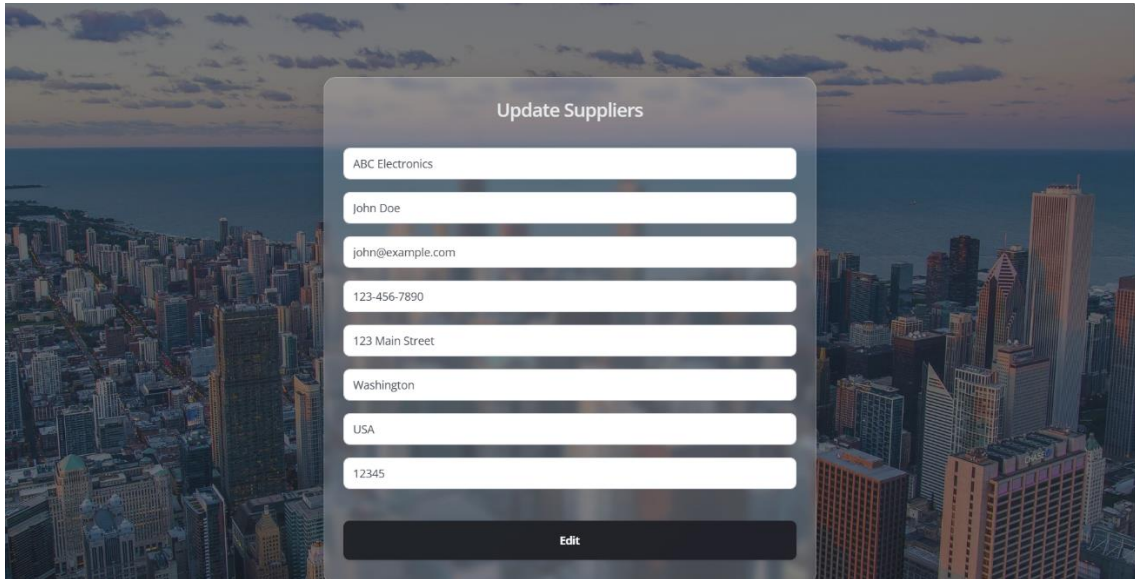
city

country

postal_code

Add

Update Supplier

A modal form titled "Update Suppliers" is displayed over a cityscape background. The form contains several input fields with pre-filled text: "ABC Electronics", "John Doe", "john@example.com", "123-456-7890", "123 Main Street", "Washington", "USA", and "12345". At the bottom of the form is a dark button labeled "Edit".

Update Suppliers

ABC Electronics

John Doe

john@example.com

123-456-7890

123 Main Street

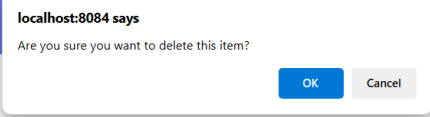
Washington

USA

12345

Edit

Delete Supplier

A confirmation dialog box is shown, titled "localhost:8084 says". It contains the text "Are you sure you want to delete this item?" and two buttons: "OK" and "Cancel".

localhost:8084 says

Are you sure you want to delete this item?

OK Cancel

Dashboard

Suppliers

Add Suppliers

CONTACT PERSON	EMAIL	PHONE	ADDRESS	CITY	COUNTRY	POSTAL CODE	OPTION
John Doe	john@example.com	123-456-7890	123 Main Street	Washington	USA	12345	<input checked="" type="checkbox"/> <input type="checkbox"/>
Jane Smith	jane@example.com	987-654-3210	456 Elm Street	London	UK	54323	<input checked="" type="checkbox"/> <input type="checkbox"/>
Sam Johnson	sam@example.com	456-789-0123	789 Oak Street	Ottawa	Canada	67890	<input checked="" type="checkbox"/> <input type="checkbox"/>
Michael Brown	michael@example.com	111-222-3333	321 Maple Avenue	Vienna	Australia	13579	<input checked="" type="checkbox"/> <input type="checkbox"/>
Emily Wilson	emily@example.com	555-666-7777	987 Pine Road	Berlin	Germany	24680	<input checked="" type="checkbox"/> <input type="checkbox"/>
David Lee	david@example.com	999-888-7777	741 Birch Lane	Paris	France	98765	<input checked="" type="checkbox"/> <input type="checkbox"/>
Sophia Rodriguez	sophia@example.com	777-888-9999	852 Cedar Street	Madrid	Spain	01234	<input checked="" type="checkbox"/> <input type="checkbox"/>
Daniel Martinez	daniel@example.com	444-333-2222	369 Oak Avenue	Rome	Italy	56789	<input checked="" type="checkbox"/> <input type="checkbox"/>
Olivia Taylor	olivia@example.com	666-555-4444	456 Walnut Drive	Tokyo	Japan	10101	<input checked="" type="checkbox"/> <input type="checkbox"/>
William Moore	william@example.com	081-333-4444	963 KCC	Kandy	SriLanka	2002	<input checked="" type="checkbox"/> <input type="checkbox"/>

tecontroller?id=15

Search Suppliers

Pages / Dashboard

Dashboard

Search Type here... Search Logout

Suppliers

ID	NAME	CONTACT PERSON	EMAIL	PHONE	ADDRESS	CITY	COUNTRY	POSTAL CODE
1	ABC Electronics	John Doe	john@example.com	123-456-7890	123 Main Street	Washington	USA	12345

Settings

View Suppliers

View Supplier

Supplier Name : ABC Electronics

Contact Person: John Doe

Email : john@example.com

Phone number : 123-456-7890

Address : 123 Main Street

City : Washington

Print

Print View Suppliers

Print

Total: 1 page

Printer

Save as PDF

Layout

Portrait

Landscape

Pages

All

e.g. 1-5, 8, 11-13

More settings

Print using system dialog...

Save

Cancel

4/24/24, 9:58 PM

Print Table

Supplier Name : ABC Electronics

Contact Person : John Doe

Email : john@example.com

Phone number : 123-456-7890

Address : 123 Main Street

City : Washington

Users Table

Pages / Dashboard

Dashboard

Type here... Search

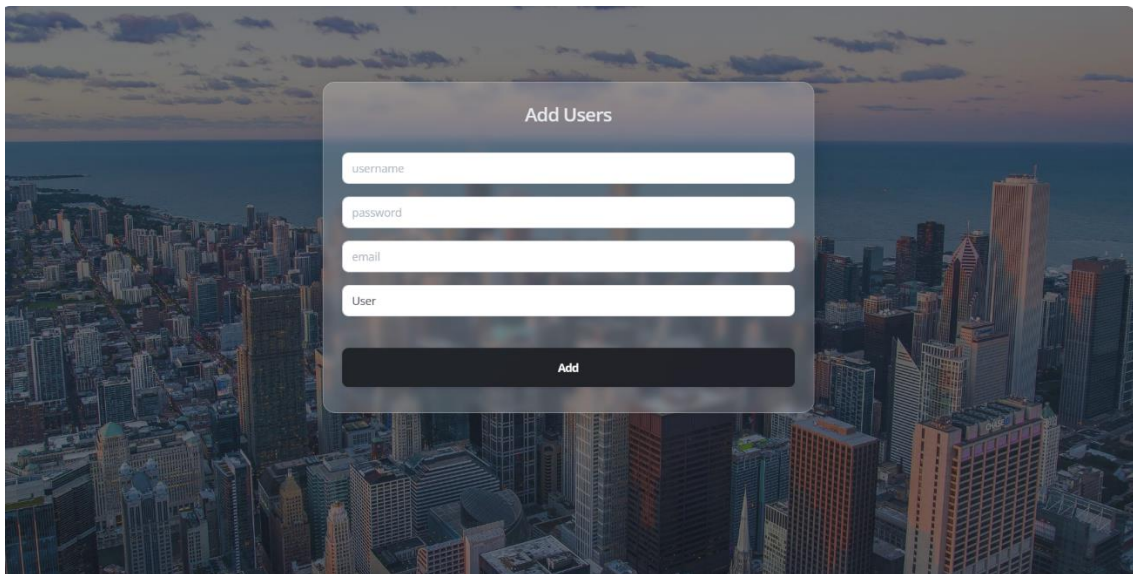
Logout

Users table

Add Users

ID	USERNAME	EMAIL	ROLE	OPTION
2	kumari	kumari@gmail.com	user	<div></div>
4	rawee	rawee@gmail.com	user	<div></div>
8	nimal	nimal@gmail.com	user	<div></div>

Add users

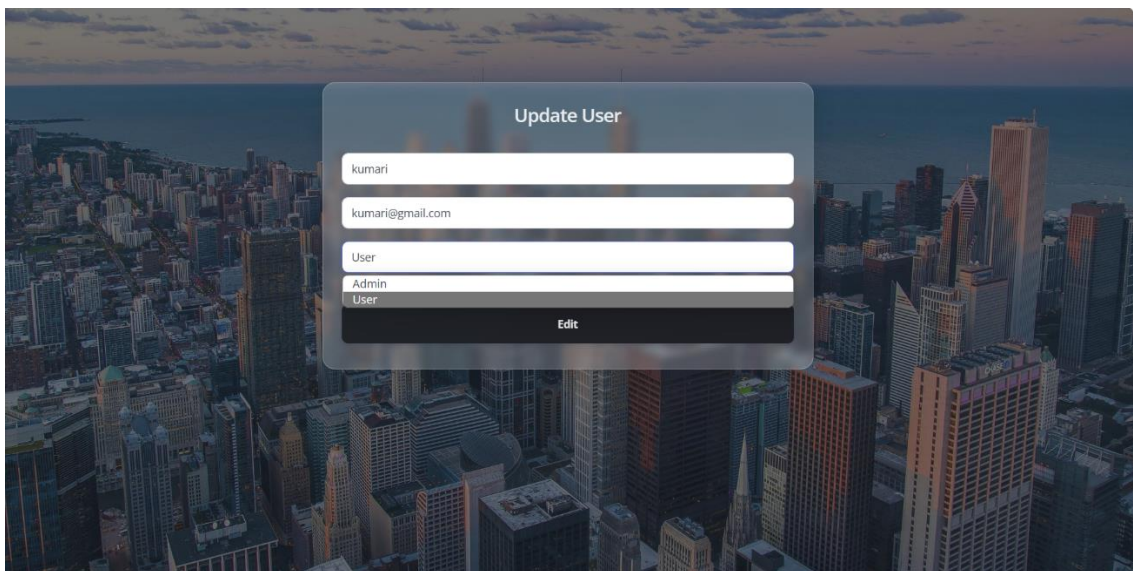


The 'Add Users' form is a semi-transparent modal box centered on a background image of a city skyline at dusk. It contains four input fields for 'username', 'password', 'email', and 'User', followed by an 'Add' button.

Add Users

Add

Update User



The 'Update User' form is a semi-transparent modal box centered on the same city skyline background. It contains four input fields with pre-filled values: 'kumari', 'kumari@gmail.com', 'User', and 'Admin'. Below these is a radio button labeled 'User' and an 'Edit' button.

Update User

☐ User



Edit

Search users



Pages / Dashboard


Dashboard

Q Type here... Search

  Logout

Users

ID	USERNAME	EMAIL	ROLE	OPTION
2	kumari	kumari@gmail.com	user	 





Product Table

Pages / Dashboard















Dashboard


Q Type here... Search

  Logout

Products

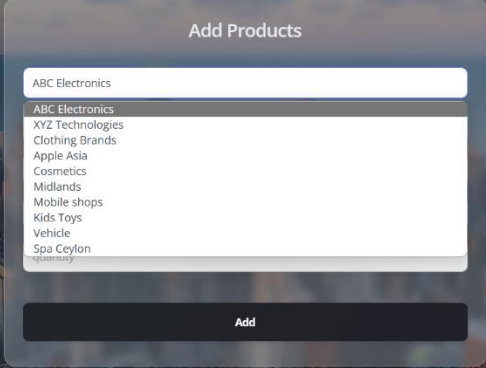
Add Products

PRODUCT_ID	SUPPLIER_ID	NAME	DESCRIPTION	PRICE	QUANTITY	OPTION
5	1	Fridge	High-quality fridge	5000.00	10	 
6	1	Washing machine	Economical	1600.00	8	 
7	2	Laptops	Multi-functional	9936.00	12	 
8	3	T-shirts	Branded	474.25	25	 
9	12	Power bank	High quality	60.00	6	 
10	15	Perfume	Luxury Brands	74.00	2	 
15	10	cat	fff	67.00	56	 





Add Products



The 'Add Products' modal is displayed over a cityscape background. It features a title bar, a search input field, a list of product categories, and an 'Add' button.

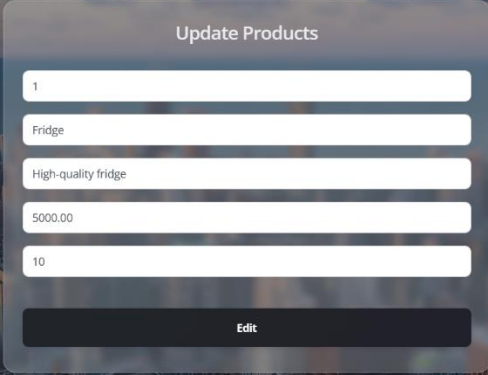
Add Products

ABC Electronics

- ABC Electronics
- XYZ Technologies
- Clothing Brands
- Apple Asia
- Cosmetics
- Midlands
- Mobile shops
- Kids Toys
- Vehicle
- Spa Ceylon
- Regalms

Add

Update Products



The 'Update Products' modal is displayed over a cityscape background. It features a title bar, five input fields for product details, and an 'Edit' button.

Update Products

1

Fridge

High-quality fridge

5000.00

10



Edit

Search Product

Pages / Dashboard

Dashboard

🔍 Type here... Search 🔔 🚪 Logout

Products						
PRODUCT_ID	SUPPLIER_ID	NAME	DESCRIPTION	PRICE	QUANTITY	OPTION
5	1	Fridge	High-quality fridge	5000.00	10	 

⚙️

View Products

View Products

Product ID : 5

Supplier ID : 1

Name : Fridge

Description: High-quality fridge

Price : 5000.00

Quantity : 10

Print

Print View Products

Print

Total: 1 page

Printer

Save as PDF

Layout

Portrait

Landscape

Pages

All

e.g. 1-5, 8, 11-13

More settings

Print using system dialog...

Save

Cancel

4/24/24, 9:54 PM

Print Table

Product ID : 5

Supplier ID : 1

Name : Fridge

Description: High-quality fridge

Price : 5000.00

Quantity : 10






Purchase Orders Table


Pages / Dashboard

Dashboard

Q Type here... Search

Logout

Purchase_orders					
ORDER_ID	SUPPLIER_ID	DATE	TOTAL_AMOUNT	STATUS	OPTION
1	1	2024-04-15 21:01:38.0	1099.00	Delivered	
5	3	2024-04-23 11:52:39.0	2200.00	Delivered	
6	10	2024-04-23 11:53:27.0	4357.00	Delivered	
7	9	2024-04-23 11:53:59.0	65000.00	Delivered	
8	3	2024-04-23 11:54:34.0	5000.00	Delivered	






Search Purchase Orders


Pages / Dashboard

Dashboard

Q Type here... Search

  Logout

ORDER_ID	SUPPLIER_ID	ORDER DATE	TOTAL AMOUNT	STATUS	OPTION
1	1	2024-04-15 21:01:38.0	1099.00	Delivered	





Users Audit Table


Pages / Dashboard

Dashboard

Q Type here... Search

  Logout

ID	USERID	ACTION	TIME
2	4	update	2024-04-19 14:20:12.0
3	2	update	2024-04-19 14:20:31.0
4	4	update	2024-04-19 14:20:47.0
5	1	update	2024-04-23 11:45:54.0
6	2	update	2024-04-23 11:46:17.0
7	1	update	2024-04-24 09:07:13.0
8	2	update	2024-04-24 09:07:21.0
9	2	update	2024-04-24 09:21:45.0
10	2	update	2024-04-24 09:21:50.0
11	4	update	2024-04-24 09:24:10.0
12	8	update	2024-04-24 09:24:12.0
14	1	update	2024-04-24 09:47:39.0





Suppliers Audit Table


Pages / Dashboard

Dashboard

Q Type here... Search



Suppliers Audit			
AUDITID	SUPPLIERID	ACTION	TIME
1	15	UPDATE	2024-04-22 21:53:17.0
2	2	UPDATE	2024-04-22 23:48:50.0
3	1	UPDATE	2024-04-23 11:15:42.0
4	2	UPDATE	2024-04-23 11:16:40.0
5	3	UPDATE	2024-04-23 11:18:02.0
6	9	UPDATE	2024-04-23 11:19:16.0
7	10	UPDATE	2024-04-23 11:20:28.0
8	11	UPDATE	2024-04-23 11:22:30.0
9	12	UPDATE	2024-04-23 11:23:21.0
10	13	UPDATE	2024-04-23 11:25:04.0
11	13	UPDATE	2024-04-23 11:25:27.0
12	14	UPDATE	2024-04-23 11:26:23.0





Products Audit Table


Pages / Dashboard

Dashboard

Q Type here... Search



Products Audit			
AUDITID	PRODUCTID	ACTION	TIME
1	6	UPDATE	2024-04-22 21:51:41.0
2	5	UPDATE	2024-04-23 11:33:24.0
3	5	UPDATE	2024-04-23 11:33:51.0
4	5	UPDATE	2024-04-23 11:34:41.0
5	6	UPDATE	2024-04-23 11:36:44.0
6	7	UPDATE	2024-04-23 11:38:27.0
7	8	UPDATE	2024-04-23 11:39:39.0
8	9	INSERT	2024-04-23 11:42:06.0
9	10	INSERT	2024-04-23 11:44:23.0
10	15	INSERT	2024-04-24 11:10:17.0
11	5	UPDATE	2024-04-24 11:14:07.0
12	5	UPDATE	2024-04-24 11:14:12.0



Purchase Order Audit Table

Pages / Dashboard

Dashboard

Q Type here... Search

Logout

Purchase Order Audit			
AUDITID	ORDERID	ACTION	TIME
1	2	DELETE	2024-04-22 21:57:13.0

Reports

Print

Total: 1 page

Printer

Save as PDF

Layout

Portrait

Landscape

Pages

All

e.g. 1-5, 8, 11-13

More settings

Print using system dialog... (Ctrl+Shift+P)

Save

Cancel

Print Table							
ID	NAME	CONTACT PERSON	EMAIL	PHONE	ADDRESS	CITY	COUNTRY
1	ABC Electronics	John Doe	john@example.com	123-456-7890	123 Main Street	Washington	USA
2	XYZ Technologies	Jane Smith	jane@example.com	987-654-3210	456 Elm Street	London	UK
3	Clothing Brands	Sam Johnson	sam@example.com	456-789-0123	789 Oak Street	Ottawa	Canada
9	Apple Asia	Michael Brown	michael@example.com	111-222-3333	321 Maple Avenue	Vienna	Australia
10	Cosmetics	Emily Wilson	emily@example.com	555-666-7777	987 Pine Road	Berlin	Germany
11	Midlands	David Lee	david@example.com	999-888-7777	741 Birch Lane	Paris	France
12	Mobile shops	Sophia Rodriguez	sophia@example.com	777-888-9999	852 Cedar Street	Madrid	Spain
13	Kids Toys	Daniel Martinez	daniel@example.com	444-333-2222	369 Oak Avenue	Rome	Italy
14	Vehicle	Olivia Taylor	olivia@example.com	666-555-4444	456 Walnut Drive	Tokyo	Japan
15	Spa Ceylon	William Moore	william@example.com	081-333-4444	963 KCC	Kandy	SriLanka

8. Security

- ❖ The system implements user authentication to ensure that only authorized users can access and manipulate supplier data.
- ❖ Passwords are securely stored using encryption techniques to protect user accounts from unauthorized access.

9. Future Enhancements

- ❖ Integration with third-party APIs for automatic supplier data retrieval.
- ❖ Advanced search and filtering options for efficiently managing large sets of supplier data.
- ❖ Role-based access control to provide different levels of access to users based on their roles within the organization.
- ❖ Notification

10. Conclusion

The Supplier Management System offers a robust solution for businesses or organizations to efficiently manage supplier information. With its user-friendly interface and comprehensive features, it simplifies the process of supplier management, contributing to improved productivity and decision-making.