Sri Lanka Institute of Information Technology

Information Technology Project (IT2080)

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Activity_01

Web App/Centralized Platform for Dean Apparels

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1. Introduction

One of The largest apparel and technology company on the island, Dean Apparels, offers concept-to-apparel solutions for the top clothing brands in the nation.

In order to develop novel solutions that exceed human capacity, they foresee future trends. While dedication to the environment has made Dean Apparels the industry standard for ethical and sustainable production, innovative partnerships have resulted in ground-breaking advancement.

They mostly employ jeans, shirts, trousers, and t-shirts as their primary industry-based method in the market approach.

In order for clients to be happy with the value they receive for their money, the primary objective is to maximize product output.

Every staff member and every worker in this community is valued.

2. Assumptions

The database that contains information about employees, transactions, suppliers, staff, and inventory is referred to as "xDB" in the use case diagram.

Twillio Caller Api is the caller management API that is used to contact customers, personnel, and other parties.
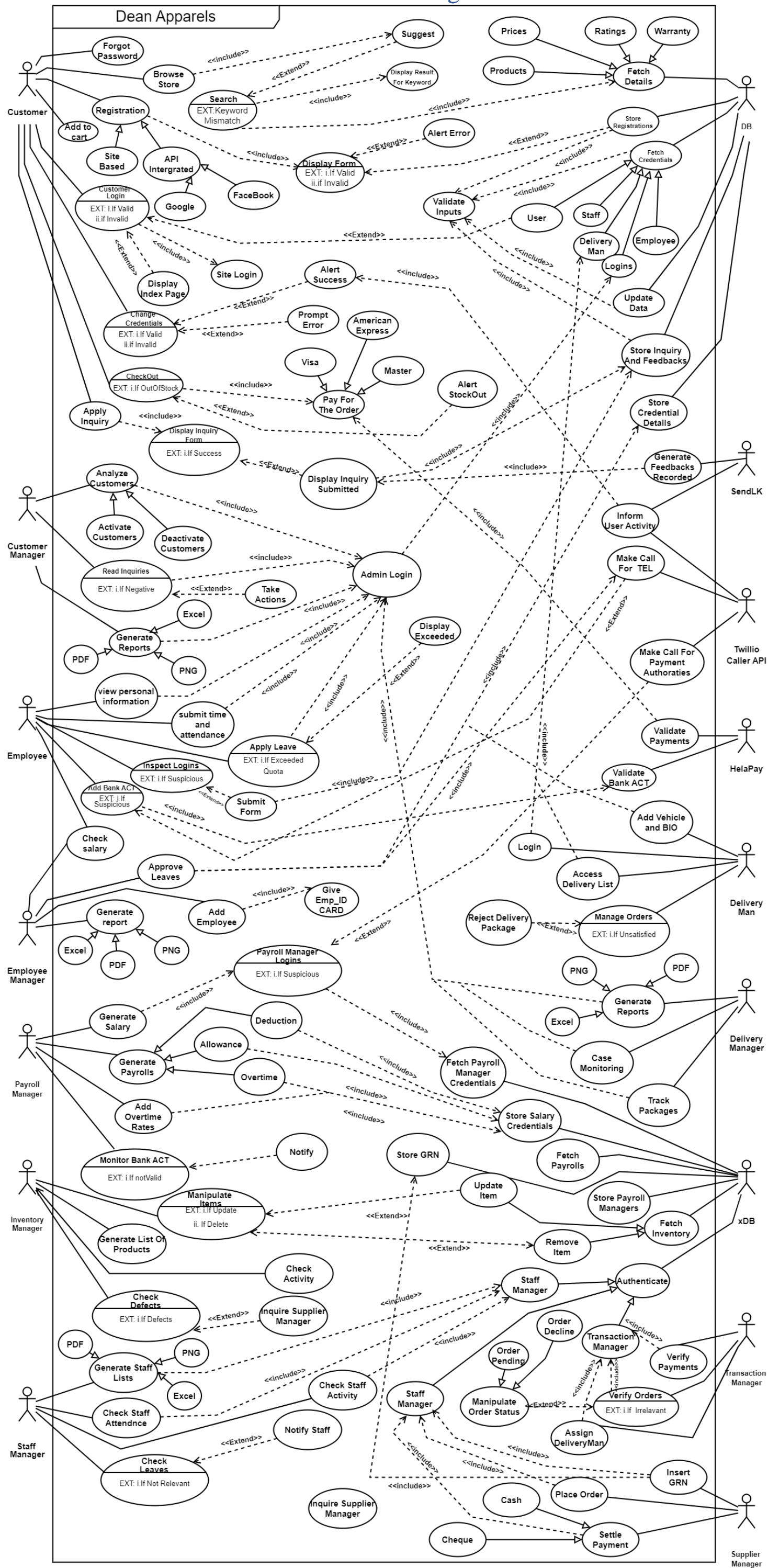
The API called SendLk holds SMS-based communications, therefore things like OTP generation are also handled here..

The system manages the payment details entered into the system via the payment gateway HELAPAY.
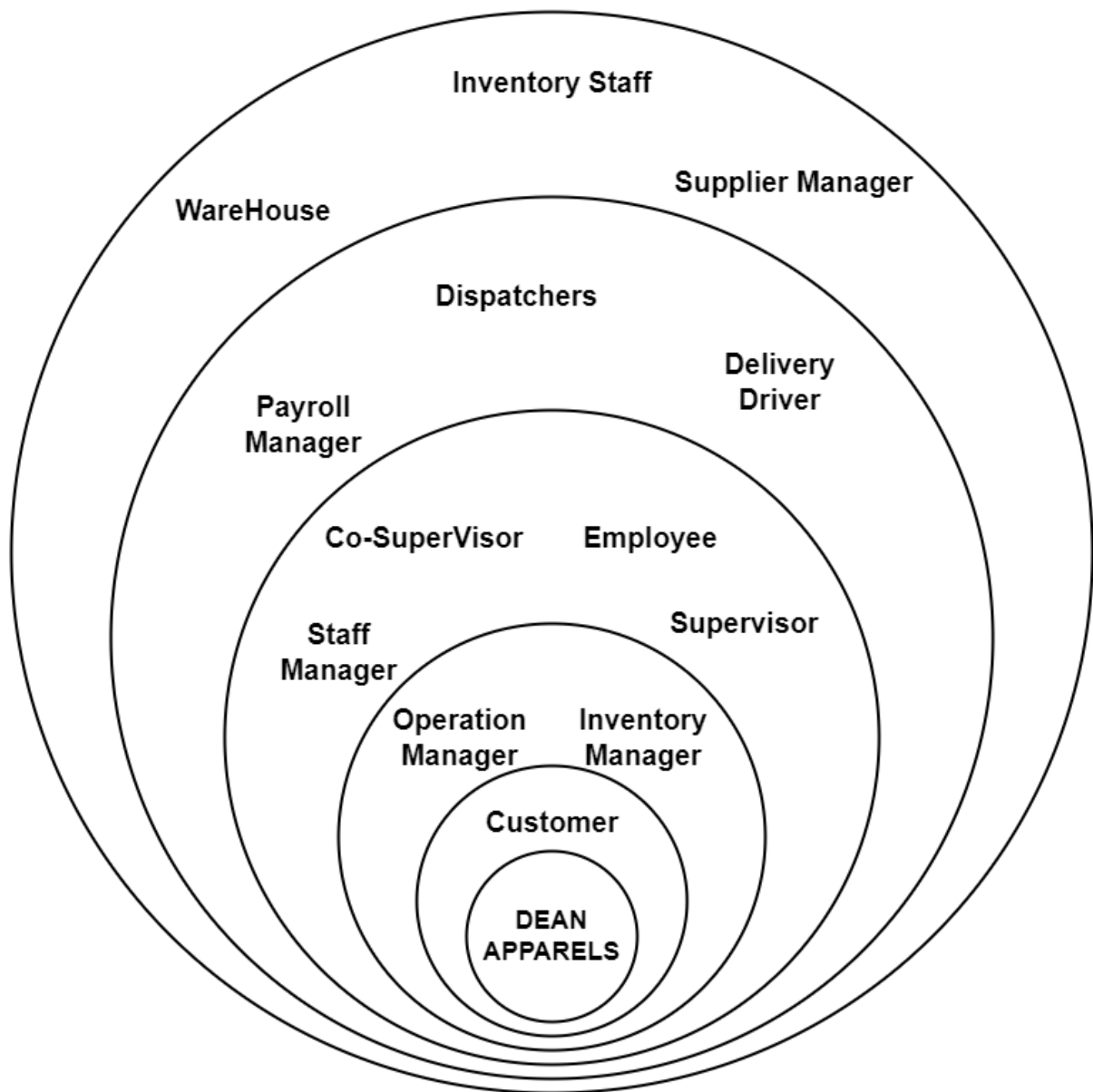
The DB is where the information about the clients and particular admin information is kept.

DAxxx Refers The UseCase Scenario Name Where DA means Dean Apparels.

3. Use Case Diagram

4. Onion Diagram

5. User Stories

- ❖ Customer
  - ✓ As a customer, I want to be able to easily browse and search for the clothing items that I'm interested in, so that I can quickly find what I'm looking for.
  - ✓ As a customer, I want to be able to leave reviews and feedback on items and the overall shopping experience, so that I can share my thoughts with other customers and help improve the system.
  - ✓ As a customer, I want to be able to leave reviews and feedback on items and the overall shopping experience, so that I can share my thoughts with other customers and help improve the system.
- ❖ Customer Manager
  - ✓ As a customer, I want to be able to leave reviews and feedback on items and the overall shopping experience, so that I can share my thoughts with other customers and help improve the system.
  - ✓ As a customer, I want to be able to leave reviews and feedback on items and the overall shopping experience, so that I can share my thoughts with other customers and help improve the system.
- ❖ Payroll Manager
  - ✓ As a Payroll manager, I want to be able to view and edit the salary and bonus information for each employee, so that I can ensure that everyone is being paid accurately and fairly.
  - ✓ As a Payroll manager, I want to be able to generate and export payroll reports for specific time periods, so that I can share this information with other managers and keep accurate records of employee compensation.
  - ✓ As a payroll manager, I want to be able to generate payroll reports that accurately reflect the hours worked by employees, so that I can ensure timely and accurate payment of salaries and avoid any potential issues or disputes with employees.
- ❖ Inventory Manager
  - ✓ As an Inventory Manager, I want to be able to quickly view inventory levels for all products, so that I can proactively manage stock levels and avoid stockouts or overstocks.
  - ✓ As an Inventory Manager, I want to be able to set and adjust reorder points for each product, so that I can ensure we have enough stock on hand without tying up capital in excess inventory.
  - ✓ As an Inventory Manager, I want to be able to receive real-time notifications about the stock levels, so that I can make timely purchase orders and avoid running out of stock.
- ❖ Staff Manager
  - ✓ As a staff manager, I want to be able to easily view and update the contact information for all of my staff, so that I can quickly get in touch with them if necessary and ensure that our records are accurate and up to date.

- ✓ As a staff manager, I want to be able to easily assign tasks to my staff and track their progress, so that I can ensure that all work is being completed efficiently and on time.
- ✓ As a staff manager, I want to be able to easily view the work schedules for all of my staff in one place, so that I can quickly identify any conflicts or issues and make necessary adjustments.

❖ Supplier Manager
- ✓ As a supplier manager, I want to be able to view the inventory levels of Dean Apparels in real-time, so that I can better plan my production and delivery schedules.
- ✓ As a supplier manager, I want to be able to receive notifications when inventory levels for certain items fall below a certain threshold, so that I can take proactive steps to prevent stockouts and ensure timely deliveries to Dean Apparels.
- ✓ As a supplier manager, I want to be able to view the historical purchasing data for Dean Apparels, so that I can identify trends and patterns in their buying behavior and make more accurate forecasts for future orders.

❖ Employee Manager
- ✓ As an employee manager, I want to be able to easily view and edit the personal information of each employee, such as their contact details, employment status, and performance metrics, so that I can keep accurate records and ensure that our staff is well-managed.
- ✓ As an employee manager, I want to be able to generate reports on employee attendance, productivity, and other key performance indicators, so that I can identify areas for improvement and make data-driven decisions about how to optimize our workforce.
- ✓ As an employee manager, I want to be able to easily communicate with all staff members via an internal messaging system, so that I can quickly disseminate important information, answer questions, and provide feedback and support to my team.

❖ Delivery Driver
- ✓ As a delivery driver, I want to be able to see the complete delivery schedule for the day so that I can plan my route efficiently and ensure timely deliveries to customers.
- ✓ As a delivery driver, I want to be able to track the status of each delivery in real-time so that I can keep customers informed and provide accurate delivery estimates.
- ✓ As a delivery driver, I want to be able to report any issues or delays with a delivery to the dispatchers and operation manager so that they can take appropriate action and minimize any impact on customers.

- ❖ Transaction Manager
  - ✓ As a transaction manager, I want to be able to generate reports that show transaction trends over time, such as which products are selling the most, which payment methods are most popular, and which times of day have the highest transaction volume, so that I can make data-driven decisions to improve the company's profitability.
  - ✓ As a transaction manager, I want to be able to view all transaction details, including date, amount, payment method, and status, so that I can track the financial health of the company.
  - ✓ As a transaction manager, I want to be able to configure payment processing rules, such as minimum and maximum transaction amounts, payment gateway settings, and fraud prevention measures, so that I can ensure the security and reliability of all transactions processed by the company.
- ❖ Delivery Manager
  - ✓ As a delivery manager, I want to be able to generate delivery reports for each driver, so that I can evaluate their performance and identify areas for improvement.
  - ✓ As a delivery manager, I want to be able to track the status of all orders in real-time, so that I can quickly identify and address any issues that may arise.
  - ✓ As a delivery manager, I want to be able to assign delivery drivers to specific orders, so that we can ensure timely and accurate delivery of products to customers.

6. Set Of Requirments

> **Functional Requirments**

- Customer
  - Able to view the available product catalog.
  - Search for products by name, category or other attributes.
  - Add products to their Whishlist or to the Cart and place orders.
- Customer Manager
  - Create and manage customer accounts
  - Manage customer feedback and complaints
- Payroll Manager
  - Manage employee payroll data and payment processing.
  - Generate reports on employee salaries, deductions, and benefits.
  - Handle employee tax forms and other regulatory requirements.
- Inventory Manager
  - Ability to manage inventory levels and stock replenishment
  - Track inventory movements and stock locations
  - Generate inventory reports and analysis for decision-making
- Delivery Man
  - View and manage delivery schedules and routes.
  - Communicate with dispatchers and customers regarding delivery status.
  - Track and report on delivery performance metrics.
- Employee Manager
  - Manage employee information and employment status.
  - Ability to track employee performance and training
  - Ability to communicate with employees regarding company policies and benefits
  - View Pay Stubs and Other Compensation Information.
- Staff Manager
  - Create and manage staff schedules.
  - Ability to track staff attendance and absences.
  - Ability to view and update staff information, such as contact details and job titles.
- Supplier Manager
  - Manage supplier accounts and orders.
  - View and update supplier information, such as contact details and product information.
  - Insert GRN(Goods Recived Note).
- Delivery Manager
  - View and track the status of all orders in real-time.
  - Generate delivery reports and analyze delivery performance metrics.
  - Ability to assign orders to delivery drivers based on their availability, location, and workload.

> **Non-Functional Requirments**
>
> - Customer
>   - The website should load quickly and be responsive to user actions.
>   - The website should be easy to navigate, with clear and concise menus and buttons.
>   - The website should be visually appealing and have a modern design.
> - Customer Manger
>   - User interface should be easy to use and navigate
>   - System should be available 24/7 with minimal downtime for maintenance
>   - System should be able to handle a high volume of customer data and transactions
> - PayRoll Manager
>   - Reliable And Portability of the System.
>   - User interface should be intuitive and easy to navigate
>   - System should have robust security measures to protect employee data
>   - System should be able to handle a high volume of employee data and transactions
> - Inventory Manager
>   - User interface should be user-friendly and easy to navigate
>   - System should have real-time inventory updates to prevent stockouts and overstocks
>   - System should be able to handle a high volume of inventory data and transactions
> - Employee Manager
>   - User interface should be easy to use and navigate
>   - System should have robust security measures to protect employee data
>   - System should be able to handle a high volume of employee data and transactions
>   - Usability with Enhancements.
> - Staff Manager
>   - Performance: The system should be able to handle a large number of staff and their data efficiently.
>   - Usability: The system should be easy to use and navigate, with clear instructions and intuitive interfaces.
>   - Security: Staff data should be securely stored and only accessible to authorized personnel.
> - Supplier Manager
>   - Portability: The GRN could be Inserted Via Mobile if In Emergency.
>   - Security : All The Payments Should be maintained Securably So That Supplier Satisfaction Would Be gain.
>   - Sytem Should Be Reliable.

- Delivery Manager
  - Highly Reliable For In contact With Drivers
  - Availability , So 24/7 Delivery Could Be done.
  - Security In order to maintain Package Details and customer privacy.
- Transaction Manager
  - The system should be highly secure, ensuring that transaction data is protected from unauthorized access.
  - The system should be highly available, ensuring that it is accessible to users at all times.
  - The system should be easy to use, with a simple and intuitive user interface.

➢ **Technical Requirments**
- List Of Common Requirments For Whole System Needs
  - BarCode Readers
  - QR Code Sanners
  - BarCode Stickers
  - Thermometric Gun
  - FingerPrint Reader
  - Punch Card
  - Printer
  - Scanner

7. Use Case Descriptions

Number	DA001	
Name	Add to cart	
Summary	User adds product to the cart	
Priority	3	
Preconditions	User should log to the system	
Primary Actor(s)	Customer	
Secondary Actor(s)	System Database (DB) Sendlk database	
Trigger	User wants to buy a product	
Main Scenario	**Step**	**Action**
	1	Guest log to the system
	2	System authorizes the user
	3	Guest Selects "New user"
	4	System session redirects user to cart.isp page
	5	System displays the cart items that exists
	6	User adds the products from the product.jsp
	7	System prompts product added successfully.
	8	User clicks the cart icon in the product page
	9	System displays cart page
	10	System increments the products from the cart page
	11	System increments the products
	12	User requests the cart info as a message
	13	System sends request to the SENDLK server
	14	Sendlk server accepts the response
	15	Sendlk server validates the user
	16	System prompts to enter the number to be message required
	17	User enters the specific number
	18	System validates the number
	19	System displays message send successfully
Extensions	**Step**	**Branching Action**
	6a	System displays "product already exists in the cart" when same items are added to the cart
	10a	If the product stock is "out of stock" increment button get disables.
	16a	If the number is not valid the system prompts to enter the number again.
	16b	If the number is not local or the number id a foreign then system displays "only local numbers are allowed"
	19a	If the process is not successful then system redirects to the initial page again
Open Issues	10	Should the system send AJAX request to refresh cart page

Number	DA002	
Name	Customer Registration	
Summary	Customer Becomes a valid user in the system	
Priority	3	
Preconditions	Customer should browse the system	
Primary Actor(s)	Customer	
Secondary Actor(s)	System Database (DB)	
Trigger	Customer wants to be a User	
Main Scenario	**Step**	**Action**
	1	Customer clicks on the Sign-up button
	2	System displays Sign-in/Sign-up page
	3	Customer Selects "New user"
	4	System redirects guest to the registration page
	5	System display registration form
	6	System display reCAPTCHA
	7	Customer fills registration form
	8	Customer submits the reCAPTCHA
	9	Customer submits the registration form
	10	System generates verification email to the Customer given email address
	11	Customer Enters verification code or clicks the verification link from the email
	12	System prompts to enter valid Username or suggest usernames
	13	Customer choses a username or enters a valid username
	14	On submit System displays greetings to the newly registered user
	15	System stores data in the database
	16	System redirects user to the home page
	17	System take the user a tour through-out the system and thus gives the basic knowledge about the system to the user
Extensions	**Step**	**Branching Action**
	5a	System displays error when fields are not matched or not filled
	6a	System prompts to enter again the CAPTCHA submission if incorrect
	11a	If verification code fails or Customer enters an invalid one prompts user as invalid and asks whether resend verification
	13a	In username exists system prompts to "Enter again"
Open Issues	10	Should the system send newsletter to email?

Number	DA003
Name	Update Delivery Locations
Summary	Updates the locations of the delivery in real-time.
Priority	4
Preconditions	• The delivery driver must have an active delivery assigned to them. • The delivery driver must have access to the delivery management system and the relevant delivery details. • The delivery driver must have the necessary permissions to update the delivery location.
Postconditions	• The delivery location has been updated in the delivery management system. • The customer has been notified of any changes to the delivery location or schedule. • The delivery driver can continue with the delivery process as per the updated details.
Primary Actor(s)	Delivery Driver
Trigger	

Main Scenario	Step	Action
	1	The delivery driver logs in to the delivery management system.
	2	The delivery driver selects the active delivery assigned to them.
	3	The delivery driver selects the "Update Location" option from the delivery details.
	4	The delivery driver enters the new delivery location and any relevant details or comments.
	5	The delivery management system updates the delivery location in real time.
	6	Driver confirms update with customer and shares delivery time estimate.
	7	The customer accepts or rejects the updated delivery details.
	8	Driver contacts manager to resolve issue if customer rejects update.
	9	If the customer accepts the updated details, the delivery driver proceeds with the updated delivery plan.
	10	The delivery driver completes the delivery and marks it as complete in the delivery management system
Extensions	Step	Branching Action
	1a	Driver unable to access system, contact manager for location update.
	5a	Driver unable to update location in real-time, contact manager for coordination.
	8a	Driver contacts manager to solve delivery issues.
	8b	Driver may leave delivery details in secure location for customer.
	10a	Driver contacts manager if unable to confirm delivery details with customer.

Number	DA004
Name	Apply leave
Summary	An employee can apply for leaves
Priority	04
Preconditions	The employee must have available leave days to apply for
Postconditions	The employee may receive a notification or confirmation that their leave request has been received and is being reviewed.
Primary Actor(s)	Employee
Trigger	Employee has three casual leave for a month.

Main Scenario	Step	Action
	1	logs into the employee management system using her login credentials.
	2	Navigating to the leave application page.
	3	Selecting the leave type and date.
	4	Check the leaves are available.
	5	Submits the leave application through the system.
	6	Leave application is now in the system, awaiting approval from her manager or supervisor.
	7	Receiving approval.
	8	takes her approved leave and enjoys her time off, knowing that her leave was approved and accounted for in the company's system.

Extensions	Step	Branching Action
	4a	if exceed three leave in a month, you can't apply leave more.

Number	DA005	
Name	Settle Payment	
Summary	Supplier Payments Are Settled	
Priority	4	
Preconditions	The supplier manager must have access to the payment system. The supplier manager must have a pending payment request from a vendor.	
Postconditions	The payment status for the vendor is updated in the payment system to "paid".	
Primary Actor(s)	Supplier Manager	
Trigger	Checking orders and payments	
Main Scenario	**Step**	**Action**
	1	The supplier manager logs into the payment system.
	2	The system displays a list of pending payment requests.
	3	The supplier manager selects the pending payment request for the vendor.
	4	The system displays the details of the payment request, including the vendor name, amount, and due date.
	5	The supplier manager verifies the details of the payment request and confirms that it is valid.
	6	The supplier manager initiates the payment from the payment system to the vendor.
	7	The system confirms that the payment has been processed and updates the payment status as "paid" in the payment system.
	8	The system sends a notification to the vendor that the payment has been made.
Extensions	**Step**	**Branching Action**
	2a	If the supplier manager identifies an error or discrepancy in the payment request, they can reject the request and send it back to the vendor for correction.

Number	DA006
Name	Verify Payments
Summary	Mainly consider about Paymnet management
Priority	5
Preconditions	
Postconditions	
Primary Actor(s)	Admin
Trigger	Checking orders and payments

Main Scenario	Step	Action
	1	Admin login to the system
	2	Checking daily transactions
	3	Checking payments
	4	Approve and decline payments
	5	Store and checking transaction details
	6	Adding new payments
	7	Checking transaction information
	8	Admin logout the system
Extensions	Step	Branching Action
	5	5a. Add new transaction. 5b. Delete transaction

Number	DA007
Name	Manipulate Items
Summary	Add New products, Store finished Products, Distribute Raw materials
Priority	4
Preconditions	Mainly consider about Store Products and Distribute Raw materials
Postconditions	Update daily workload of inventory and get all work report
Primary Actor(s)	Inventory Manager
Trigger	Store Raw materials and Distributing products

Main Scenario	**Step**	**Action**
	1	Admin Log using his factory ID and password.
	2	Checking daily delivery schedule
	3	Check orders and payments
	4	Check Store capacity and material details
	5	Check Raw material Quantity
	6	Order Empty materials from Suppliers
	7	Check Store Activity
	8	Log out
Extensions	**Step**	**Branching Action**
	4	4.a) Update Raw material and remove materials
		4.b) Check store input capacity

Number	DA008
Name	Generate Salary
Summary	Employee,Staff and DeliveryMan get Paid
Priority	05
Preconditions	The payroll manager is authorized to generate salary payments for employees
Postconditions	Employee salary payments have been generated and are ready for distribution
Primary Actor(s)	Employee
Trigger	The payroll manager initiates the "Generate Salary" process

Main Scenario	Step	Action
	1	The payroll manager logs into the system and navigates to the "Generate Salary" screen
	2	The system displays a form to the Payroll Manager to enter salary details such as salary period, employee IDs, etc.
	3	The Payroll Manager enters the required details and submits the form.
	4	The system validates the data entered by the Payroll Manager.
	5	The system generates the salary for the employees whose details were entered by the Payroll Manager.
	6	The system calculates the deductions for each employee based on their salary and other factors.
	7	Receiving approval.
	8	The system displays the summary of the generated salary, which includes the gross salary, deductions, and net salary for each employee.
	9	The Payroll Manager verifies the generated salary.
	10	The Payroll Manager approves the generated salary.
	11	The system updates the payroll records with the generated salary and deductions.
	12	The system generates payslips for each employee and sends them to the Payroll Manager.
	13	The Payroll Manager reviews the payslips and verifies that they are accurate.
	14	The Payroll Manager distributes the payslips to the employees.
Extensions	Step	Branching Action
	1a	If the Payroll Manager enters invalid data, the system displays an error message and prompts the Payroll Manager to correct the data.
	3a	If the system encounters errors while generating the salary or payslips, it displays an error message and prompts the Payroll Manager to resolve the issue.
	4a	If the Payroll Manager identifies discrepancies in the payroll records, they can request to review and correct the records before proceeding with the use case.

Number	DA009
Name	Check Staff Activity
Summary	Add new member, get attendance, Get staffs bio
Priority	Mainly consider about staff management
Preconditions	
Postconditions	
Primary Actor(s)	Co-supervisor
Trigger	Check Staff bio and attendance

Main Scenario	Step	Action
	1	Admin login to the system(Co-supervisor)
	2	Checking daily attendance
	3	Checking Daily leave sheets
	4	Accepting leaving forms
	5	Store and checking staff bio
	6	Adding New members and Maintain staff list
	7	Checking Staff information
	8	Admin logout the system
Extensions	**Step**	**Branching Action**
	5	5a. Add new Account 5b. Delete Account

8. Contributions

CONTRIBUTION	STUDENT_NAME	STUDENT_ID

❖ Requirments
  ✓ Customer
  ✓ Customer Manager
❖ Use Case Scenario
  ✓ Add To Cart
  ✓ Customer Registration
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❖ Requirments
  ✓ PayRoll Manager
❖ Use Case Scenario
  ✓ Generate Salary
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❖ Requirments
  ✓ Inventory Manager
❖ Use Case Scenario
  ✓ Manipulate Items
	Jayasinghe S.V.M.T	IT21314742

❖ Requirments
  ✓ Delivery Man
  ✓ Delivery Manager
❖ Use Case Scenario
  ✓ Update Delivery Location
	Yapa Y.M.T.N.S	IT21298912

❖ Requirments
  ✓ Supplier Manager
❖ Use Case Scenario
  ✓ Settle Payment
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❖ Requirments
  ✓ Employee
  ✓ Employee Manager
❖ Use Case Scenario
  ✓ Apply Leave
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❖ Requirments
  ✓ Transaction Manager
❖ Use Case Scenario
  ✓ Verify Payments
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❖ Requirments
  ✓ Staff Manager
❖ Use Case Scenario
  ✓ Check Staff Activity
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