Collaborative Development

(5CS024)

Collaborative Development Project :- Group 3

Our Team members:-

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Semester : 4 (Group 17)

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1. Online Store Management System:

Create a web-based platform for small businesses to manage their online stores. The system should allow merchants to track inventory levels, update product listings, process orders, and manage shipments. Additionally, incorporate features like customer management, sales analytics, and integration with payment gateways.

Major Key features of Online Store Management System are as follows:-

- Sign in
- Login

  Users can view detailed information about products available on the platform, including product name, description, and specifics such as size, color, or other relevant attributes.
- Dashboard

  -orders in real-time,

  providing transparency and peace of mind regarding the status of their deliveries.

- Details information of Product like Product name, Description and Specifics

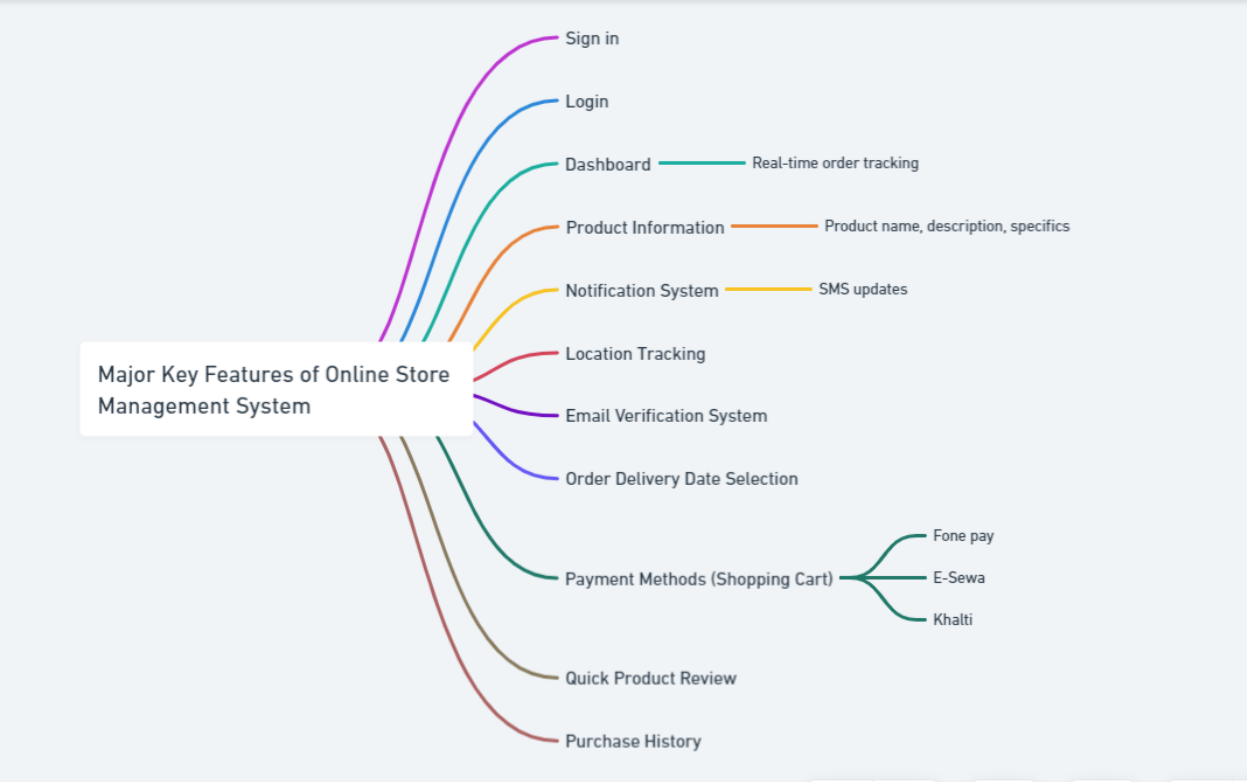
  notification system sends SMS updates to customers regarding order status, shipment tracking, and other important information, enhancing communication and customer engagement.
- Location Tracking: To provide customers with an easy way to track their orders

- There is SMS notification system to communicate with customer

  notification system sends SMS updates to customers regarding order status, and other important information, enhancing communication and customer engagement.

- There is an user E-mail verification system for security concern
- Customers can choose their order delivery date
- Payment method (Shopping Cart) : Fone pay, E-Sewa , Khalti
- To provide quick review of products
- Purchase History

RoadMap:



Tech Stack:

- Frontend : HTML, CSS, Javascript (React / Angular / Vue)
- Backend: Node.js, Express.js
- Database: MongoDB or PostgreSQL
- Other tools: JWT for authentication

Justification:

Both Node.js and MongoDB are known for their scalability and flexibility. MongoDB can handle unstructured data which can be beneficial for the product information and user data storage.

References or Link:

https://www.academia.edu/38404847/An_Online_Shopping_Store_Management_System
https://www.daraz.com.np/#hp-flash-sale
https://www.netsuite.com/portal/resource/articles/inventory-management/inventory-management-system-features.shtml
https://www.strikingly.com/content/blog/store-management/

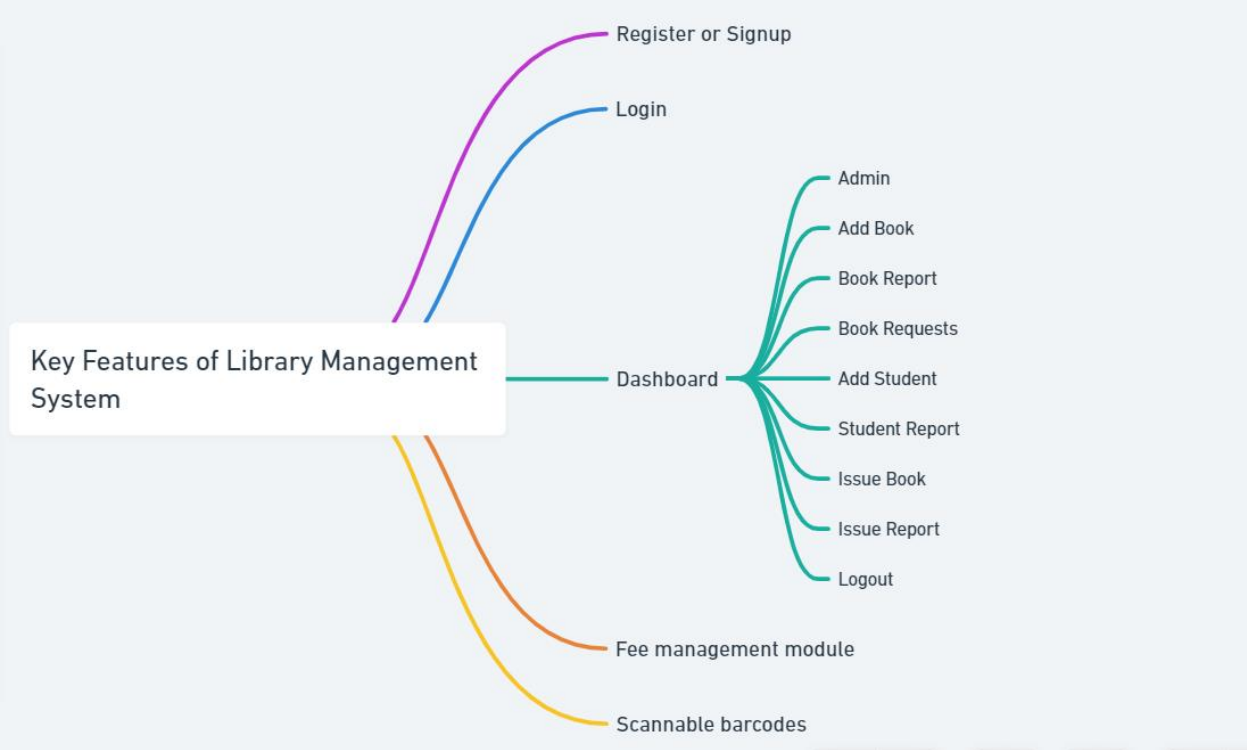
2. Library Management System:

Develop a software solution for libraries to manage their book collections. The system should include features for cataloging books, tracking borrowing and returning, managing overdue fines, and generating reports on book availability and usage patterns.

The key features of library management system are as follows:

- Register or Signup
- Login
- Dashboard
  - ✓ Admin
  - ✓ Add Book
  - ✓ Book Report
  - ✓ Book Requests
  - ✓ Add Student
  - ✓ Student Report
  - ✓ Issue Book
  - ✓ Issue Report
  - ✓ Logout
- Fee management module
  Here incase of unreturned , lost or damaged, the software throws up due from student by automatically counting days from the due date.
- Scannable barcodes
- User feedback and review
- E-books and digital resources integration

RoadMap:



Tech Stack:

- Frontend : HTML, CSS, Javascript (React / Angular)
- Backend: Java (Spring Boot) / Python (Django)
- Database: MYSQL or PostgreSQL
- Other tools: Hibernate (Java) or Django ORM (Python) for database interaction, JWT for authentication

Justification:

Both spring boot and Django give concrete development frameworks for rapid building of backend services. Both databases offer ACID (Atomicity, Consistency, Isolation, and Durability) compliance, ensuring data integrity.

References and link:

https://itechindia.co/blog/what-features-should-your-library-management-system-have/

https://www.youtube.com/watch?v=BAtYQZxpmhs

https://www.elibrarysoftware.com/what-online-library-management-system.html

https://www.vidyalayaschoolsoftware.com/blog/2022/04/key-features-of-school-library-management-software-that-you-need-to-know/

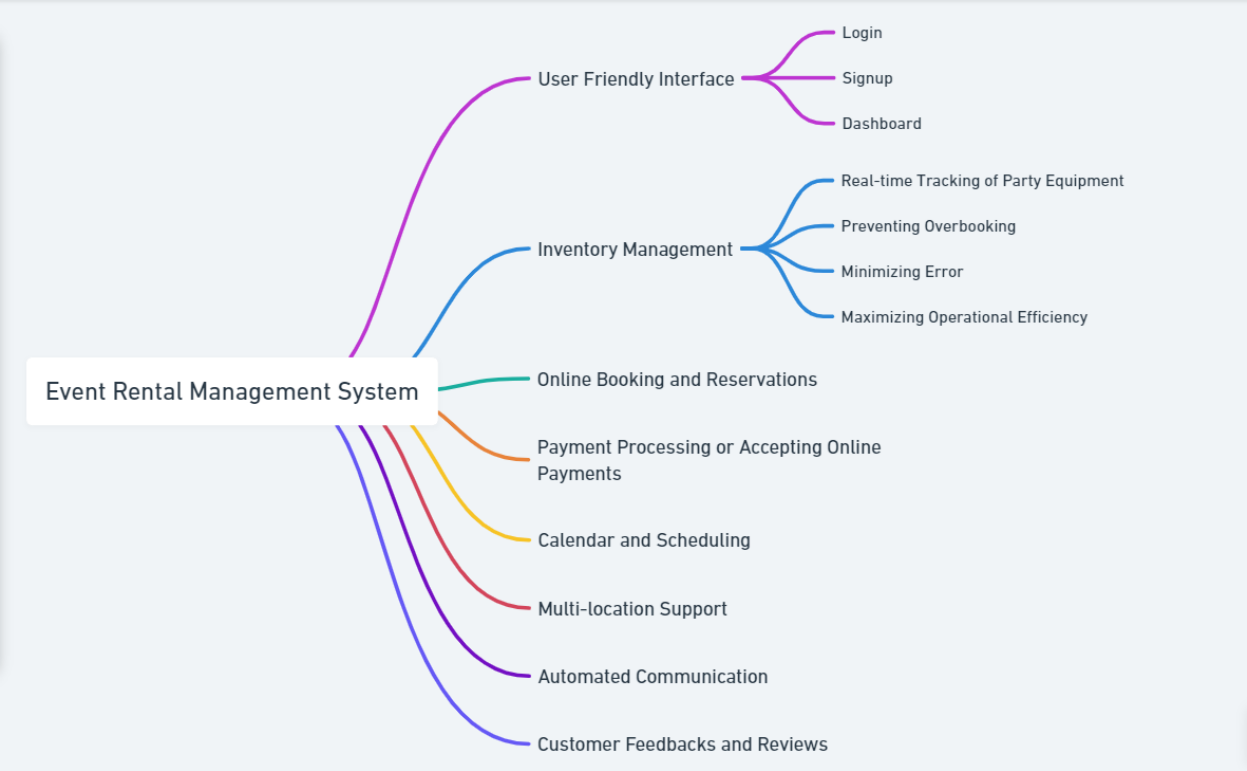
3. Event Rental Management System:

Build a platform for event rental companies to manage their inventory of rental equipment. The system should enable users to track inventory availability, schedule rentals, generate quotes and invoices, and manage customer bookings. Additionally, include features for inventory maintenance, damage tracking, and rental contract management.

Key features of Event Rental Management System are:

- User Friendly interface
  - ✓ Login
  - ✓ Signup
  - ✓ Dashboard
- Inventory management
  - ✓ Real time tracking of party equipment
  - ✓ Preventing overbooking
  - ✓ Minimizing error
  - ✓ maximizing operational efficiency
- Online Booking and reservations
- Payment Processing or accepting online payments
- Calendar and scheduling
- Multi location support
- Automated communication
- Venue layout and configuration planning
-
- Social media integration for promotion
- Customer feedbacks and reviews

RoadMap:



Tech Stack:

- Frontend : HTML, CSS, Javascript (React / Angular)
- Backend: Java (Spring Boot) / Python (Django)
- Database: MYSQL or PostgreSQL
- Other tools: JWT for authentication

Justification:

Node.js and MongoDB offer flexibility and scalability to handle real-time updates and large amounts of event data. React.js provides a responsive and interactive user interface suitable for managing event rentals.

References and Link:

https://medium.com/@dm.princeharry/top-11-features-of-event-rental-management-software-dc7589931076
https://rentopian.com/4-essential-features-you-need-in-an-event-rental-software/
https://www.crises-control.com/blogs/saas-critical-event-management-system/
https://financesonline.com/10-must-features-property-management-system/

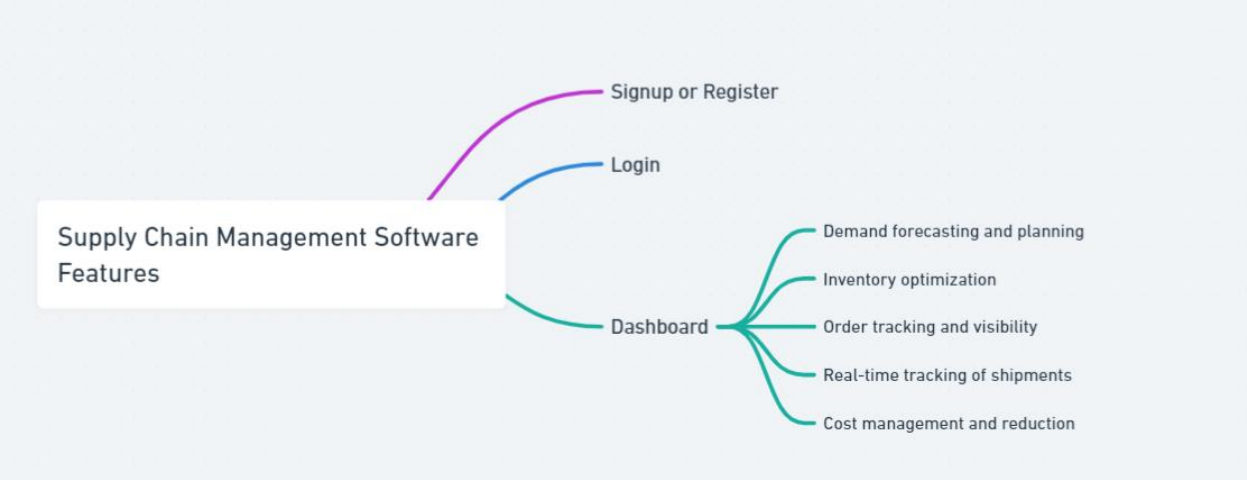
4. Supply Chain Management System:

Design a comprehensive supply chain management system for businesses to track the movement of goods from suppliers to customers. The system should integrate inventory management with procurement, production planning, order fulfillment, and logistics management. Features such as demand forecasting, vendor management, and real-time inventory visibility can also be incorporated.

Features:

- Signup or Register
- Login
- Dashboard
- Demand forecasting and planning
- Inventory optimization
- Order tracking and visibility
- Real-time tracking of shipments
- Cost management and reduction

RoadMap:



Tech Stack:

- Frontend : HTML, CSS, Javascript (React / Angular)
- Backend: Java (Spring Boot) / Python (Django)
- Database: MYSQL or PostgreSQL
- Other tools: RESTful APIs for integration with external systems, JWT for authentication

Justification:
BJava with Spring Boot or Python with Django can provide robust backend services for managing complex supply chain processes. PostgreSQL and MYSQL can handle large volumes of data and complex queries efficiently.

References and Link:
https://intellipaat.com/blog/features-of-supply-chain-management/
https://www.nibusinessinfo.co.uk/content/key-features-supply-chain-management-software
https://www.salesbabu.com/blog/8-essential-features-of-an-effective-supply-chain-management-solution/
https://www.coherentmarketinsights.com/blog/6-key-features-of-supply-chain-management-software-149

5. Manufacturing Resource Planning (MRP) System:

Develop an MRP system for manufacturing companies to optimise production processes and manage inventory levels. The system should automate production scheduling, material requirements planning, and inventory replenishment based on demand forecasts and production capacity. Additionally, include features for tracking work orders, managing bill of materials (BOM), and coordinating with suppliers.

Features:

- SignUp or Register
- Login
- Dashboard
- Bill of Materials Management
- Work order Management
- Capacity Planning and optimisation
- Production Cost Tracking
- Maintenance, repair and Operations
- User-friendly interface for production teams

RoadMap:

Tech Stack:

- Frontend : HTML, CSS, Javascript (React / Angular)
- Backend: Java (Spring Boot) / Python (Django)
- Database: MYSQL or PostgreSQL
- Other tools: JWT for authentication, Django REST framework for building RESTful APIs

Justification:
Django with PostgreSQL can handle the complex data models and business logic involved in manufacturing resource planning. Using React.js or Angular for the frontend can provide a modern and user-friendly interface for managing manufacturing resources.

References and Link:

https://www.theaccessgroup.com/en-gb/manufacturing/software/mrp/what-is-mrp/
https://technologyadvice.com/blog/information-technology/best-mrp-systems/
https://blog.nbs-us.com/what-is-material-requirements-planning-mrp-and-why-smes-need-it
https://flowlens.com/learning/what-is-mrp-and-how-does-it-work/

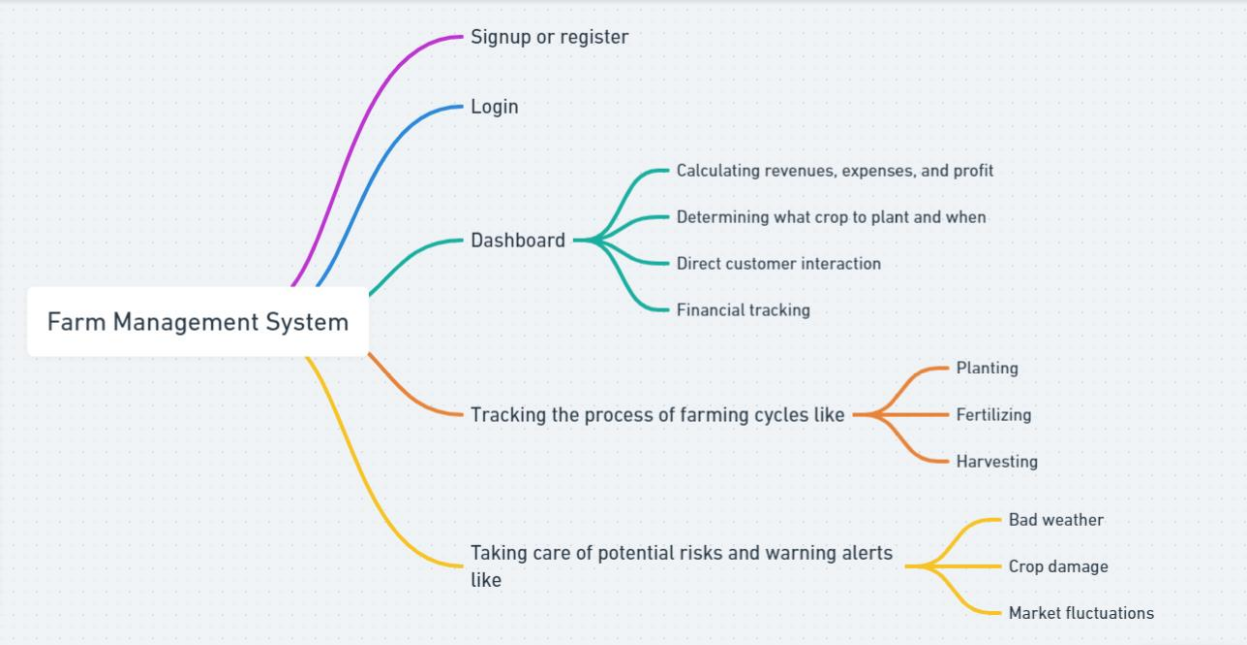
6. Farm Management System:

Create a software solution for farmers to manage their agricultural operations and inventory of crops, seeds, and equipment. The system should include features for crop planning, inventory tracking, harvest management, and sales and distribution. Additionally, incorporate tools for monitoring crop health, weather forecasting, and financial analysis.

Key features of Farm Management System are as follows:

- Signup or register
- Logina\
- Dashboard
- Calculating revenues , expenses and profit
- Determining what crop to plant and when
- Direct customer interact
- Integration with agricultural IoT devices
- Tracking the process of farming cycles like
  - ✓ Planting
  - ✓ Fertilizing
  - ✓ Harvesting
- Taking care of potential risk and warning alert like
  - ✓ Bad weather
  - ✓ Crop damage
  - ✓ Market fluctuations
- Financial tracking

RoadMap:



Tech Stack:

- Frontend : HTML, CSS, Javascript (React / Angular)
- Backend: Node.js, Express.js
- Database: MYSQL or PostgreSQL
- Other tools: JWT for authentication

Justification:

Node.js and MongoDB provide flexibility and scalability to handle diverse data types and real-time updates in a farm management system. React.js offers a responsive and interactive user interface suitable for managing farm operations.

References and Link:

https://www.benchmarklabs.com/blog/6-farm-information-management-systems-changing-future-of-farming/
https://www.cropin.com/farm-management-software
https://www.quora.com/What-are-the-key-features-that-a-good-farm-management-software-must-have

7. Hospital Inventory Management System:

Build a system for hospitals and healthcare facilities to manage their medical supplies and equipment. The system should enable users to track inventory levels, automate procurement processes, manage expiration dates, and ensure regulatory compliance. Features such as barcode scanning, RFID tracking, and integration with electronic health records (EHR) can also be included.

Key features of Hospital Inventory Management System are:

- Signup or register
- Login
- Dashboard
- Real time tracking of drugs, medical supplies and equipment
- Barcode generating for item
- Enabling alert message on expire date
- Cost saving or provide discount
- Integration with healthcare analytics platforms
- Feedbacks and reviews
- Contact us
- History and reports

RoadMap:

Tech Stack:

- Frontend : HTML, CSS, Javascript (React / Angular)
- Backend: Java (Spring Boot) / Python (Django)
- Database: MYSQL or PostgreSQL
- Other tools: Hibernate (Java) or Django ORM (Python) for database interaction, JWT for authentication

Justification:

Spring Boot or Django can provide robust backend services for managing hospital inventory with features like tracking stock levels, expiration dates, and supplier information. MySQL or PostgreSQL offer ACID compliance for data integrity, crucial in a healthcare setting.

References and Link:

https://www.bigscal.com/blogs/healthcare-industry/hospital-inventory-management-software/
https://www.tatvasoft.com/outsourcing/2021/05/hospital-inventory-management-software.html

https://gloriumtech.com/hospital-management-software-development-key-features-and-benefits/
https://www.cleverdevsoftware.com/solutions/hospital-inventory-software