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BSIT 4D

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Company Name: G3 Company

System Title: *Ange Construction Supply Trading Shop and Inventory Management*

	DATA What	FUNCTION How	NETWORK Where	PEOPLE Who	TIME When	MOTIVATION Why
Objective/Scope (contextual) *Role: Planner*	• Customer Information • Product Details • Availability Information • Inventory Management	Development and implementation of: • Product Cataloging • Order Management • Inventory Management	• **[ADDRESS]** • Customer's Homes	**Project Manager**: The project manager or planner, in consultation with the Construction Supplies Trading owner, is responsible for defining the scope and objectives of the project.	**Project Timeframes**: Establishes the overall time frame for the web system, including deadlines for development, testing, and launch.	**Customer Satisfaction and Loyalty**: To enhance customer satisfaction and loyalty by providing a convenient and efficient way for customers to see products and place orders. **Revenue Growth**: Aims to increase the Construction Supplies Trading revenue by attracting more customers through the web system, aligning with the business goals.
Enterprise Model (conceptual) *Role: Owner*	• The conceptual model encompasses entities like Customer/Client, Order placement, product catalog and Inventory. It establishes the fundamental comprehension of data concepts and the interconnections between each entity, enabling alignment with the owner's goals.	In this conceptual model, it covers the following ways on how the system will be developed: • Customer creates order. • The staff checks availability or stocks through the usage of the system. • The staffs monitored the inventory levels.	• **Internet Connectivity** which enables online booking and reservation transactions. • **Mobile Networks** which will be used by customers and the staffs of the shop. • **Data Security Networks** which will be used for data security, including encryption and secure connections.	**Construction Supplies Trading Owner**: The owner sets the pricing structure, defines available of the product, and establishes business policies related to placing orders.	**Appointment Confirmation Times**: Decides on acceptable response times for confirming appointments and reservations made through the app, appointments must be confirmed.	**Streamlined Operations**: Motivated to streamline the order placement processes and to reduce administrative hassle for the staff. **Competitive Advantage**: Sees the system to gain a competitive edge by offering a modern way for the shops services.
System Model (logical) *Role: Designer*	1. Customer Profile • Customer registration and profile management with editable fields for Name, Contact Information, etc. 2. Product Browsing • See Product list and see details like, price, quantity, color, and other varieties of the product. 3. Order Management • Dashboard displaying order placed their status. 4. Inventory Management • Inventory Dashboard showing available products, items and construction supplies.	• Visual Model for the interface design as a basis • The UI will be fitted for the users' needs and experiences while using the Web system.	This includes: • **Appealing design** ensures that UI remains usable and visually appealing on the users' devices. • **Introducing robust encryption protocols** to safeguard data transmitted between the user interface and backend services.	**UI/UX Designer**: Responsible for designing the user interface of the web system. Designs a user-friendly interface for product cataloging, order placement and inventory management.	**Real-Time Features**: Incorporates time features into the app, allowing customers to select preferred appointment times and dates based on availability.	**User-Friendly Design**: Motivated to create a user-friendly and intuitive web system that aligns with the construction trading branding. **Encouraging Usage**: Aims to make the web system visually appealing and easy to navigate to encourage regular customer usage.
Technology Model (Physical) *Role: Builder*	• Product Information • Quantity • Unit of Measurement • Supplier Information • Cost and Pricing • Location	• Provides an intuitive and user-friendly interface for users to interact with the system. • Manages the business logic and processes within the system. • Stores and manages data related to construction supplies, orders, suppliers, customers, and transactions. • Tracks and manages the movement and status of construction supplies.	**Wide Area Network (WAN):** If your system spans multiple locations, consider WAN technologies for interconnecting them securely.	**System Developers** are responsible for implementing the software components of the system. They work on creating the user interface, application logic, and database functionalities as per the technology model.	• Project Initiation (1 Week) • Requirements Gathering and Analysis (1 Week) • System Design (1) • Development (4 weeks) • Testing (1-3 days) • User Acceptance Testing (UAT) (1-3days) • Deployment (1-3 days)	**Efficient Inventory Management:** Construction projects often require a vast array of materials and supplies. Efficient inventory management ensures that the right items are available when needed, minimizing delays and project interruptions. **Cost Control and Savings:** Effective inventory management helps reduce carrying costs, prevents overstocking or stockouts, and minimizes the risk of wasted materials. This results in significant cost savings.

		• Ensures data security and authenticates users. • Analyzes data to derive insights and generates reports.				**Improved Productivity:** Streamlining inventory processes eliminates manual data entry and reduces the time spent on managing supplies. This leads to increased worker productivity. **Accurate Project Planning:** Accurate inventory data allows for precise project planning and scheduling. Construction projects can be completed on time and within budget.
Detailed Representation (Out of context) *Role: Programmer*	**Product Data:** Typically stored in a database table, with each product represented as a row and fields as columns. **Inventory Data:** Inventory records are stored in a table, with each record linked to a specific product and location. **Supplier Information:** Supplier details are typically stored in a separate database table for easy reference and management. **Purchase Orders:** Purchase orders are stored in a table, linking them to specific suppliers and inventory items. **Sales Orders:** Sales orders are stored in a table, linking them to customer records and product data. **Transaction History:** Transaction records are stored in a log or database table to track all inventory-related activities. **User Data and Permissions:** User data is stored securely, often in a dedicated user table, to control access to the system. **Notifications and Alerts:** Notification records are stored to track and manage communication with system users.	Programmer might use PHP within the Laravel framework for a Construction Supply Trading Inventory Management System is a complex task that would involve multiple aspects of the system's architecture.	**Development Environment:** • **Workstations:** Programmers typically work on their own development workstations or laptops. These machines should have the necessary development tools and software installed, including Laravel (for PHP development), a database server (e.g., MySQL), and version control systems (e.g., Git). **Development Server:** • **Database Server**: A local or remote database server stores the development database used for testing and development purposes. Programmers interact with this server to create and modify database schemas. **Production Environment:** • **Web Servers:** Production web servers host the live Laravel application. These servers are typically load-balanced to ensure high availability and scalability.	**System Developers** are responsible for implementing the software components of the system. They work on creating the user interface, application logic, and database functionalities.	• Planning and Requirements Gathering (1 week) • Design and Architecture (1 week) • Development (4 weeks) • Testing and Quality Assurance (1-3 days) • Integration and Deployment (1-3 days) • User Acceptance Testing (1-3days) • Post-Deployment and Optimization (1-3 days)	**Efficient Inventory Management:** Programmers develop systems that automate inventory tracking, reorder processes, and optimize stock levels, leading to streamlined operations. **Cost Control and Savings:** Programmers design software solutions that enable cost analysis, demand forecasting, and cost-efficient procurement practices. **Enhanced Productivity:** Programmers develop user-friendly interfaces and automation features that boost workforce efficiency and reduce human errors. **Accurate Project Planning:** Programmers create systems that provide real-time visibility into inventory levels, enabling project managers to make data-driven decisions.
Functioning Enterprise *Role: User*	• Product Data • Inventory Data • Supplier Information • Purchase Order • Sales Order • User date and Permision • Notification and alerts • System Configuration Settings	**User Roles and Permissions:** • Users are assigned specific roles and permissions within the system, defining their access and privileges. Common roles include administrators, procurement managers, warehouse personnel, sales representatives, and finance personnel. • User roles determine what actions they can perform and which parts of the system they can access. For example, administrators may have full control, while sales representatives may only have access to customer orders. **Authentication and Access:** • Users must authenticate themselves to access the system.	**User Workstations:** Users log in to the system from their workstations to perform tasks such as managing inventory, creating purchase orders, processing sales orders, and generating reports.	**Administrators** have full access and control over the inventory management system. They manage user accounts, set permissions, configure system settings, and ensure data security. **Procurement managers** are responsible for sourcing construction materials and supplies. They use the system to create purchase orders, track supplier performance, and manage supplier relationships. **Warehouse supervisors** oversee the physical management of inventory in warehouses or storage facilities. They use the system to receive, store, and distribute materials efficiently.	**Administrator** • Daily: Monitor system health and backups. • As Needed: User management, role assignments, system configuration, and troubleshooting. **Procurement Manager** • Daily: Review purchase requisitions, place orders as needed. • Weekly: Review supplier performance metrics and negotiate contracts. • Monthly: Analyze procurement data for cost optimization. **Warehouse Supervisor** • Daily: Oversee incoming and outgoing shipments, ensure proper storage. • Weekly: Conduct physical inventory counts. • Monthly: Review stock levels, identify slow-moving items.	• Ensure that all users receive comprehensive training on how to use the system. This training should cover basic navigation, data entry, and advanced features relevant to their roles. • Define and assign user roles and permissions based on job responsibilities. Ensure that each user has access only to the functions and data relevant to their role. • Emphasize the importance of accurate and consistent data entry. Inaccurate data can lead to inventory discrepancies and operational inefficiencies. • Encourage users to follow these routines to ensure that tasks are completed consistently and on time.

		This typically involves entering a username and password or using other authentication methods. • Authentication ensures that only authorized individuals can use the system. **Product and Inventory Management:** • Users are responsible for managing product information, including adding new products, updating product details, and categorizing items. • They also record inventory transactions, such as receiving new supplies, updating stock levels, and handling product returns. **Order Processing:** • Users involved in sales and procurement use the system to create and process purchase orders from suppliers and sales orders for customers. • They may also track order status, manage backorders, and coordinate deliveries. **Supplier and Customer Management:** • Customer management may include creating and maintaining customer profiles, managing credit limits, and tracking sales history. **Alerts and Notifications:** • Users receive alerts and notifications from the system. These alerts can include low stock notifications, order status updates, or alerts about critical issues.		**Sales representatives** manage customer orders and inquiries. They use the system to create sales orders, check product availability, and provide quotes to customers. **Finance personnel** use the system to track financial transactions related to inventory. They manage accounts payable and receivable, handle invoices, and reconcile financial data. **Inventory analysts** focus on optimizing inventory levels and demand forecasting. They use the system's data to analyze trends, identify surplus or shortage issues, and make recommendations. **IT support personnel and system administrators** maintain the technical infrastructure, ensure system availability, and provide technical assistance to users.	**Sales Representative** • Daily: Process customer orders, check product availability, and provide quotes. • Weekly: Review sales reports and customer feedback. • Monthly: Analyze sales trends and communicate with customers. **Accounting and Finance Personnel** • Daily: Manage accounts payable and receivable related to inventory. • Weekly: Reconcile financial data with inventory transactions. • Monthly: Generate financial reports and budget updates. **Inventory Analyst** • Daily: Monitor inventory levels, identify shortages or surpluses. • Weekly: Review demand forecasts and update inventory plans. • Monthly: Analyze inventory performance and suggest improvements. • **IT Support and System** Administrators • Daily: Monitor system performance and respond to technical issues. • Weekly: Implement software updates and security patches. • Monthly: Conduct data backups and system maintenance.	• Develop procedures for handling exceptions and anomalies in the system. Users should know how to address issues like stockouts, overstock situations, and quality control problems. • Encourage collaboration among users, especially those in different roles, such as procurement and warehouse management. • Train users, especially analysts and managers, on generating reports and performing data analysis within the system.