Inventory management

Title:- Inventory Management

Category- Web application

Purpose

      The purpose of developing this "Inventory management system" is to maintain required material and storing material in an organized manner in the warehouse. Also supply required material for the assembly lines. And keep employees connected to each other virtually.

Scope

      This system is being produced for manufacturing companies to maintain their warehouses and it's only accessible for its authorized employees (not for everyone). This system will be built by considering the admin's perspective, store manager's perspective, supervisor's perspective and store workers perspective.

      This system will only allow Admin to add new employees and give him/her the authorization as per their role. This system will allow store managers to see stocks available in the warehouse, add new material in the warehouse and to update quantities of materials in the warehouse.. Similarly the supervisor can see all available material and order it as per their requirements. Furthermore, the supervisor can see the name and contact number of the worker that is delivering the order. This system will provide store workers to see the ordered material information, location is in the warehouse and from where its been ordered.

      This system will have numerous constraints on what it can do. This system will not allow any employees to see or update information of employees except Admin. Only store managers will be allowed to add, update and delete material status. Store manager cannot add more material in the warehouse if it's full. The only supervisor can order materials which are available in the warehouse. Supervisor can order only 10 items in one order. Store workers have to deliver orders in a given time.

Existing system

The present system is a manual system.Manual system involves paper work in the form of maintaining various files and manuals. Maintaining critical information in the files and manuals is full of risk and a tedious process.
A manual system has the following disadvantages.

- ❖ In the existing system store managers have to manually search to check whether the material is available or not.
- ❖ In the existing system store managers have to inform every supervisor about the available stock.
- ❖ In the existing system store managers have to manually maintain checked-in and checked-out material data.
- ❖ In the existing system supervisors have to call store managers to order required material.
- ❖ Supervisors have to manually maintain order history in files.
- ❖ Sometimes store workers deliberately delay the orders.
- ❖ It's difficult for store workers to remember material's location in the warehouse, it's become a time consuming task for workers to find required material.
- ❖ Store workers have to write down the list of ordered materials.
- ❖ Breakdowns in communication between store manager, supervisor and worker leads to delay in execution.

Proposed System

Inventory management will resolve all the disadvantages of the existing system. The goal is to achieve a user-friendly UI,portable, maintainable, durable and secure system that helps to reduce additional workload and time of employees.

Advantages for Admin
Advantages for admin are explained below

Authority and security: Only admin can add, remove and give permissions to the employees. Which keeps the organization safe and secure.

Overview of the whole system: admin can easily see details about every material, employee information,orders history, warehouse status which gives full control of the system to the admin.

Advantages for Store Managers

Advantages for Store Managers are explained below

Time saving: store managers can see all the stocks which are currently available in the warehouse,Similarly store managers can search material by its id which will save a lot of time.

Breakout from tedious paperwork: all the incoming and outgoing material records will be automatically stored in a database which will make this process effortless.

Easy for monitoring: store managers can easily update quantities, as well as add, remove material in the warehouse. Similar store manager will be notified in case of shortage in material, excessive material, overload on warehouse which will provide store managers complete control over warehouse

Advantages for Supervisor's

Advantages for supervisor's are explained below

Easy to order: supervisor's can see all the stocks which are currently available in the warehouse,Similarly supervisor's can search material by its id and order various materials at the same time.

Maintainable: every order details will be stored in order history which will save a lot of paperwork and time.

Easy to monitor: after every order supervisor's will get the name and contact number of the store worker so in case of delay the supervisor can call the worker.

Advantages for Store Workers

Advantages for store workers are explained below

Time saving: store workers can see all order details and its location in the warehouse which save lots of time.

maintainable : orders history will be saved in the database which helps to maintain their work record.

Store workers will get a supervisor's contact number in case of any problem or query.

Functional requirements

- ❖ Employees must have email Id and password to login in the system.
- ❖ Depending upon role employees will see different home pages.
- ❖ Admin can add, delete and authorize any employee. Also admin can see orders history of supervisors and warehouse status.
- ❖ Only store managers can add, update, remove items from the warehouse.
- ❖ Store manager will have all the control on the warehouse.
- ❖ Store manager can see information and performance of all the store workers.
- ❖ Supervisor can see available material and order it as per the requirements.
- ❖ Supervisor can order only 10 items at a time.

- ❖ Supervisor can see information of the store worker who's delivering the order.
- ❖ Store workers can see all the information about ordered material as well as the location of that material in the warehouse.

Non Functional requirements:

Security
- Employees with a valid user and password will use this application(Not for everyone).
- No employee can access other employees' details except HR.
- Only HR will be able to give authorization to employees. Similarly add new employees and remove existing employees.

Availability
- Uptime: 24* 7 available

Maintainability
- A Commercial database software will be used to maintain System data Persistence.
- A Web Server will be installed to host online Inventory Management(Web Application) to management server capabilities.
- The IT operations team will easily monitor and configure System using administrative tools provided by Servers.
- Separate environment will be maintained for system for isolation in production, testing, and development

Portability
- The system will provide a portable User Interface (HTML, CSS, Angular) through which users will be able to access the web application.
- The system can be deployed to a single server, multi-server, to any OS, Cloud (Azure or AWS or GCP).

Accessibility
- Only registered employees will be able to log in after authentication.

Durability
- The system will maintain employee details.
- The system will implement backup and recovery for retaining users data, and their business data over time.
- The system will use cache for faster data retrieval and improve performance.

Modularity
- The system will be designed and developed using reusable, independent or dependent business scenarios in the form of modules.
- These modules will be loosely coupled and highly cohesive.

Scalability
- The system will be able to provide a consistent user experience to users irrespective of load.

Safety
- The employees login page will be secure from malicious attacks, and phishing.
- Separate environments will be maintained for systems for isolation in production, testing, and development.
- The IT operations team will easily monitor and configure System using administrative tools provided by Servers.

SOFTWARE TOOLS
Database Server: Microsoft SQL Server-2012
Client: Microsoft Internet Explorer or any web browser
Development Tools: Microsoft Visual Studio 2019
Programming Language: C#.Net