INTERNSHIP PROGRESS REPORT

Project Title: Wood Based Industries Licensing System

Intern Name: KIREEDULA NARESH

Company: C-DAC, GOVT OF INDIA

Internship Duration: JAN - JULY

Review Date: 07th of Apr, 2025

INTRODUCTION

The Wood Based Industries Licensing System is designed to digitalize and streamline the process of issuing and managing licenses for wood-based industries. The system ensures secure authentication, role-based access, and regulatory compliance while improving overall efficiency.

SYSTEM ANALYSIS & DESIGN

REQUIREMENT ANALYSIS

This system is designed based on the following requirements:
- Secure user authentication and access control.
- Integration with an existing MSSQL database.
- Management of user roles and permissions.
- Implementation of CAPTCHA for additional security.

SYSTEM ARCHITECTURE

The application follows a structured architecture:
- **Frontend**: Developed using React.js to provide a dynamic user experience.
- **Backend**: Built with Node.js and Express.js to handle authentication and data processing.
- **Database**: Uses MSSQL to store user details, roles, and licensing information.
- **Security Measures**: JWT is used for authentication, and bcrypt is applied for password hashing.

DATABASE DESIGN

The system utilizes the following key tables:
- **Users Table**: Stores user information and credentials.
- **Roles Table** Defines various user roles and permissions.
- **User Roles Table**: Manages the relationship between users and their assigned roles.

-**Remaining Tables**: Existing tables are used for payments, storing license details etc.

WORK COMPLETED

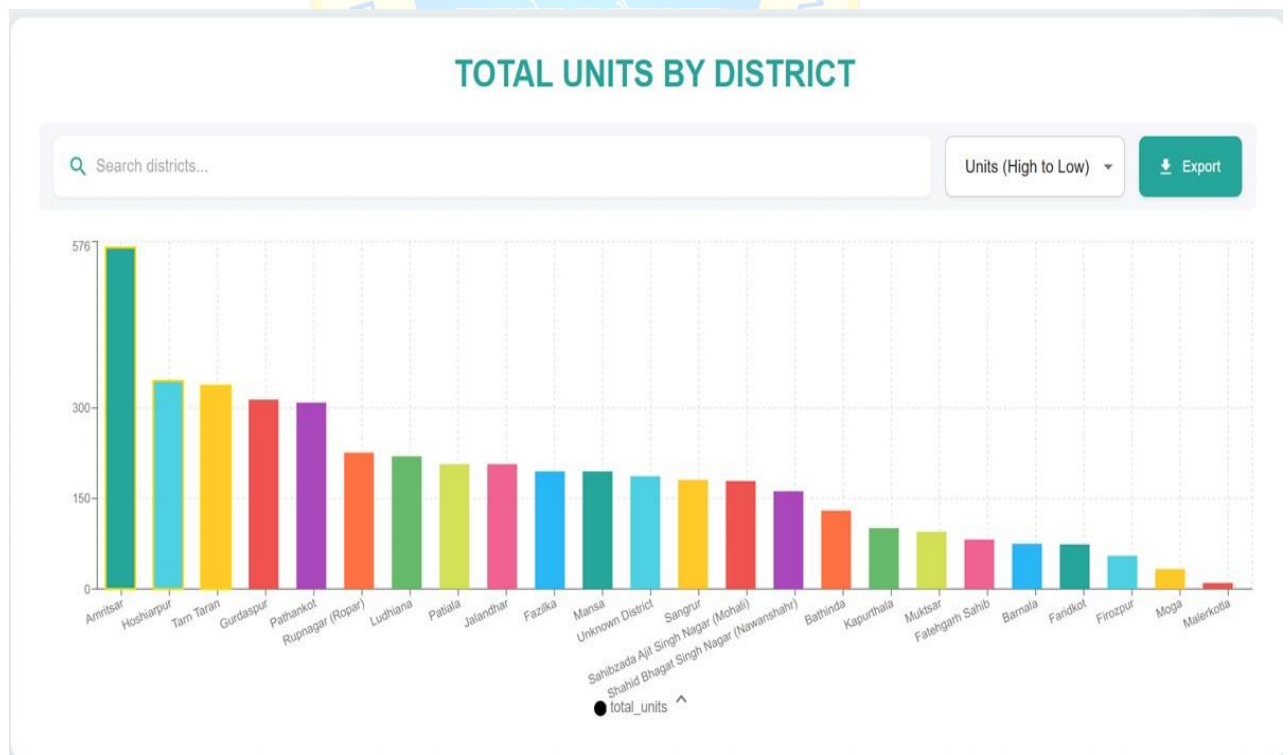During the internship, the following tasks have been completed:

- Implemented user authentication using JWT and bcrypt.

- Integrated role-based access control to restrict functionalities based on user roles.

- Developed API routes for secure data transmission between frontend and backend.

- Designed an SVG-based CAPTCHA for enhanced login security.

- Ensured compatibility with the existing MSSQL database.

-Designed and Developed Homepage, Login Page, Registration page, Contact us, About Us page, User dashboard for Application form, Dashboards for different roles

-Used inbuilt react library for showing stunning dashboard for admin panel for implementing Data Visualization

- Finished Developing the admin dashboard for seamless license tracking and approval and data visualization

COMPONENTS WORKED ON (FEB 28 – APRIL 07, 2025)

ADMIN DASHBOARD:

Created dashboard for Admin role with tailored features like license approval and status tracking.

➢ Worked on 6 Data Visualization Components for Admin, they are
- Total Units by District Bar Graph
- Unit Categories Distribution Pie Chart
- Active vs Expired Licenses Pie Chart
- Applications Type Comparison per month (Line Chart)
- District Wise Approved and Pending Applications (Bar Graph)
- Ownership Changes per Year by Category Wise (Line Graph)

Unit Categories Distribution

EXPORT

Saw Mill: 73%

Others: 3%
Katha Unit: 2%
Veneer Unit: 4%

Plywood Unit: 18%

● Saw Mill   ● Plywood Unit   ● Veneer Unit   ● Katha Unit
● Others
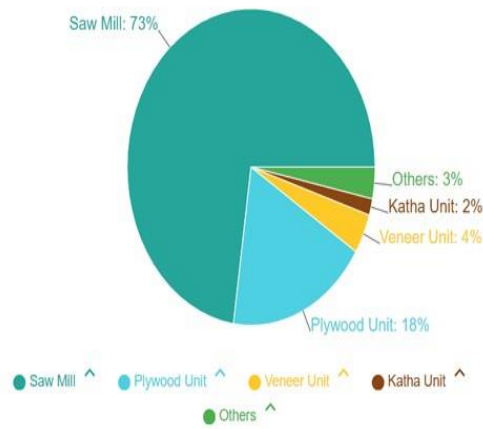
Total: **836** | Categories: **5**

Active vs. Expired Licenses

EXPORT
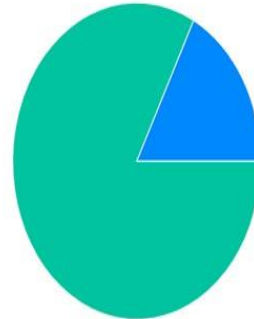
Total Licenses: **1608**

Application Type Comparison Per Month

EXPORT

All Types ▾   All Districts ▾   All Categories ▾   ↻ RESET FILTERS

◆ New License ◆ Renewal ◆ Ownership Change ◆ Relocation

Number of Applications

360

270

180

90

0

2022-01 2022-03 2022-05 2022-07 2022-09 2022-11 2023-01 2023-03 2023-05 2023-07 2023-09 2023-11 2024-01 2024-03 2024-05 2024-07 2024-09 2024-11 2025-02

Month

District-wise Applications

Approved Pending

🔍 Search districts... | All Services ▾ | Approved (High to... ▾ | ⬇ EXPORT | ↻ RESET

rupnagar (ropar): 26 approved
4.9%

Districts (left to right): jalandhar, amritsar, patiala, tarn taran, kapurthala, hoshiarpur, gurdaspur, rupnagar (ropar), fatehgarh sahib, bathinda, mansa, shahid bhagat singh nagar (nawanshahr), sahibzada ajit singh nagar (mohali), ludhiana, pathankot, muktsar, fazilka, faridkot, panchkula, firozpur, chandigarh

District-wise Applications

Approved **Pending**

🔍 Search districts... | All Services ▾ | All Pending Stages ▾ | Pending (High to L... ▾ | ⬇ EXPORT | ↻ RESET

sangrur: 170 pending
4.4%

Districts (left to right): amritsar, hoshiarpur, pathankot, gurdaspur, tarn taran, ludhiana, mansa, fazilka, sahibzada ajit singh nagar (mohali), shahid bhagat singh nagar (nawanshahr), sangrur, rupnagar (ropar), patiala, jalandhar, bathinda, muktsar, faridkot, fatehgarh sahib, barnala, firozpur, kapurthala, moga, chandigarh, malerkotla, ganganagar, una, sirsa, hanumangarh, firozabad, kangra, ambala, jind, bilaspur (himachal pradesh)

Ownership Changes Over Time

EXPORT

All Districts ▾

Year: 2023
Changes: 125
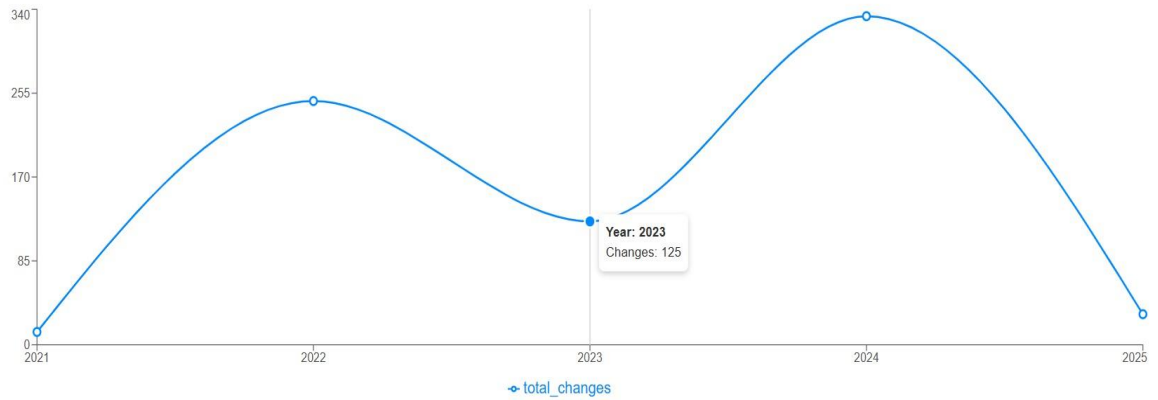
◦ total_changes

Total Changes: **749**

Saw Mill in Amritsar ✕

🔍 Search by firm/owner/location...   ⬇ EXPORT

Application ID ⇊	Firm Name ⇊	Owner Name ⇊	Location ⇊
175	Kabal singh and sons	Kabal singh	Amritsar
175	Lakhwinder Petti Store	Lakhwinder singh	Amritsar
176	Rajiv Textiles Industries	Rajiv Bhandari	Amritsar
193	SAVINDER SINGH	SAVINDER SINGH	Amritsar
206	Sohal Saw Mill	Paramjit Singh	Amritsar
216	Billa Petti Store	Balwinder Singh	Amritsar
218	Daljit Singh & Sons	Daljit Singh	Amritsar
222	Sharma Saw Mill	Rakesh Sharma	Amritsar
225	ARJUN TIMBER	ADITI MAHAJAN	Amritsar
231	AVTAR WORKSHOP	AVTAR SINGH	Amritsar
234	KEWAL MASIH	KEWAL MASIH	Amritsar
237	NARINDER SINGH	NARINDER SINGH	Amritsar
238	MANJITSINGH	MANJIT SINGH	Amritsar
240	HARDEEP SINGH	HARDEEP SINGH	Amritsar
242	SUKHBIR SINGH	SUKHBIR SINGH	Amritsar
243	Harpreet Singh	N/A	Amritsar
244	Harpreet Singh	N/A	Amritsar

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CHALLENGES FACED

While working on the project, the following challenges were encountered:
- Converting ASP.NET Identity password hash to work with Node.js authentication.
- Implementing efficient role-based access control while maintaining security.
- Managing session expiration using JWT tokens.
- Designing and integrating a custom CAPTCHA system for login security.

-Cracking the algorithm used for password hash used for existing users

-Finding the same framework like ASP .Net Identity Framework in Node, Express.js

-Implementing the existing database Structure with new tech stack

PENDING TASKS

- Designing and Developing Admin Dashboard and Dashboards for different Officers like District Forest Officer (DFO), Operator etc.
- Improving UI/UX for better usability.
-Connecting Existing databases of payments, licenses with the new website.
- Design and developing the new Application form from user.

-Online File Movement from one role to another role (Officer to Officer)

CONCLUSION

Significant progress has been made in developing the Wood Based Industries Licensing System. With authentication, role management, and security measures in place, the system is well on its way to being fully operational. The final steps involve refining the interface, testing the system thoroughly, and deploying it for production use.

Submitted By: **KIREEDULA NARESH**

Date: **07th of April, 2025.**