

# **REACT – TIMESHEET MANAGEMENT**

#### **AN INTERNSHIP REPORT**

#### **DURATION**

12.11.2024-22.11.2024

# **Titan Company Limited**

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# <u>AFFIDAVIT</u>

I, **Lokeshwaran V** pledge that the work contained in this project titled, "**React-Timesheet management**", submitted in complete fulfilment of the requirement for the Bachelor of Engineering degree in Computer Science and Engineering, Dr NGP Institute Of Technology, Coimbatore. Embodies the internship work carried out by me at, Titan Company Limited – Corporate office, Bangalore during the period of 12<sup>th</sup> November 2024 to 22<sup>nd</sup> November 2024.

Date: 22.11.2024 Signature

Place: Bangalore (Lokeshwaran V)

### <u>ACKNOWLEDGEMENT</u>

Any endeavor is difficult to even initiate without the help of many souls. My project is the result of combined help from the professionals. With an overwhelming sense of pride, I would like to thank everyone at Titan Company Limited, Bangalore for giving me the opportunity to complete my internship. The culture and professionalism present throughout the duration of my internship was a great experience. The supportive and approachable manner of my colleagues made this internship a memorable experience.

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A special thanks to **Mrs. Ineiya Dharshini D and all the other Titan staff,** for their continuing support, guidance and motivation.

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#### **ABSTRACT**

The **Timesheet Management System** is a web-based application designed to automate and streamline the process of tracking employee work hours, creating timesheets, and managing approvals. This project focuses on enhancing productivity by minimizing manual efforts, reducing errors, and improving transparency in timesheet management workflows.

The system is tailored to meet the requirements of two distinct user roles:

- 1. **Employees**: Employees can securely log in, check in and check out, create timesheets, and track the status of their submissions. The system ensures compliance with a minimum work duration by enforcing an 8-hour gap between check-in and check-out. This guarantees accountability and accurate reporting of work hours.
- 2. **Managers**: Managers can review all submitted timesheets, categorized as pending or processed. They can approve or reject timesheets with remarks, providing feedback to employees. The system also allows managers to refresh the dashboard for real-time updates.

The application is developed using modern web technologies, including:

- **React**: A robust front-end library for creating dynamic and responsive user interfaces.
- **Node.js (Express)**: A server-side framework that handles business logic and API requests efficiently.
- MongoDB Atlas: A scalable cloud-based database for secure data storage and retrieval.

Key features of the system include:

- Session Management: Ensures secure and seamless user experiences.
- User Authentication: Provides role-based access to features.
- **Confetti Effects**: Enhances user engagement by celebrating key actions, such as successful form submissions.
- **Responsive Design**: Optimized for various devices, ensuring accessibility and usability.

The project emphasizes clean coding practices, effective use of REST APIs, and efficient state management to deliver a highly interactive user experience. By integrating these functionalities, the Timesheet Management System ensures an intuitive and automated solution to traditional time-tracking methods.

#### 1. INTRODUCTION

### 1.1 Profile of Company

Titan Company Ltd. (formerly Titan Industries Ltd.) is an Indian designer and manufacturer of watches, jewellery, precision engineering components and other accessories including sunglasses, wallets, bags and belts. The company, which has its market globally, is head quartered in Bengaluru, India.

Titan Company Limited is a joint venture between the Tata Group and the Tamil Nadu Industrial Development Corporation, commenced its operations in 1984 under the name Titan Watches Limited. Titan is the world's fifth largest wristwatch manufacturer and exports watches & accessories, Smart wearables, Jewellery, Spectacles and Perfumes, Saree to nearly 36 countries around the world. Some of the well-known brands of Titan include Fastrack, Sonata, Raga, Edge, Octane, Xylys, Titan Eye+, Tanishq, Nebula, Zoop, Zoya, Mia, Skinn & the recent one is Taneira. Titan was established in the year 1984, becoming the third Indian watch manufacturer after HMT and Allwyn. Titan formed a joint venture with Timex Group, which lasted till 1998, to set up a distributional network across India.

**Vision:** "We create elevating experiences for the people we touch and significantly impact the world we work in."

**Mission:** "We will do this through a pioneering spirit and a caring, value-driven culture that fosters innovation drives performance and ensures the highest global standards in everything we do.

#### Values:

- 1. **Customer first:** Customers take precedence over all else, always.
- 2. **People make the brand:** Titanians are at the heart of our success and that is why their dreams and aspirations are at the forefront of our brand policy.
- 3. **Culture and teamwork:** High performance is a way of life.
- 4. **Creativity and innovation:** Driven by innovation and creativity, we focus on smarter approaches and newer technologies.
- 5. **Passion for excellence:** In all our pursuits, strive for excellence.

6. **Corporate citizenship:** We ensure that parts of our resources are invested for environment and community betterment.



## 1.2. Products of Company

Titan Company, best known as India's pioneering manufacturer of quartz watches, has also etched a niche for itself in some of the most competitive spaces in the fashion industry such as jewellery and eyewear. Precision engineering is another area of specialization that Titan Company is proud of that division.

#### **1.2.1.** Watches

Being the world's fifth largest integrated own brand watch manufacturer, Titan Company has created and sold more than a 150 million pieces the world over.

#### 1.2.2. Jewellery

Tanishq has been India's largest, fastest growing and most popular jewellery brand. Tanishq offers a premium range of gold jewellery studded with diamonds and precious, semi-precious stones in various hues in 18kt and a wide range of plain gold jewellery in 22 kt pure gold. Platinum jewellery also forms part of the product range. The enchanting jewellery patterns originate in the well-equipped exclusive jewellery design studio of Titan Company.

### 1.2.3. Eye wear

Titan Eye+ offers a variety of differentiated products to the end consumer consisting of frames, lenses, contact lenses and accessories. Frames are available in both international brands (Levis, Esprit, Hugo Boss etc.) and in-house brands – Titan Eye+ and Dash.

#### 1.2.4. Skinn

SKINN Titan range of fine French perfumes. With the combination of the best international fragrance expertise and one of India's most trusted brands; SKINN Titan redefines the Indian fragrance industry with its product offering.

#### 1.2.5. Taneira

New brand from Titan is aims to revive one of the oldest occupations in our country – handloom weaving and the oldest garment, the saree.

### 1.2.6. Precision Engineering

The division's products span precision engineering components & sub- assemblies, machine building & automation solutions, tooling solutions and electronic sub-assemblies. The unit has recently been selected for the National Aerospace and Defense Contractors' Accreditation Programme for its non- destructive testing capabilities.



Titan was established in the year 1984, becoming the third Indian watch manufacturer after HMT and Allwyn. Over the last three decades, Titan has expanded and explored into under penetrated markets and created leading brands across different categories.

"Titan Company Limited continues to grow and set new standards for innovation and quality with each new offering."

# 1.3. Objective of the Project

The objective of the **Timesheet Management System** is to streamline the process of timesheet creation, submission, and approval. The system provides a platform for:

- **Employees** to log their daily work hours, submit timesheets, and track the status of approvals.
- **Managers** to review and manage submitted timesheets, ensuring efficient decision-making and communication with employees.

The project also aims to reduce the manual workload, eliminate common errors in time tracking, and enhance organizational productivity.

#### **1.4.** Scope

The scope of this project includes the design, development, and deployment of a full-stack application using the MERN (MongoDB, Express, React, Node.js) stack. The application focuses on:

- **Responsive Design**: Ensures accessibility across devices, including desktops, tablets, and smartphones.
- **User Authentication**: Secure login and role-based access for employees and managers.

### • Key Features:

- Employees can check in/out, create timesheets, and view their approval status.
- Managers can review pending timesheets, approve or reject them with remarks, and refresh their dashboard for real-time updates.
- **Backend Functionality**: REST APIs handle all server-side operations, ensuring smooth communication between the client and database.

• **Enhanced User Experience**: Features such as confetti effects make interactions engaging and enjoyable.

This project serves as a stepping stone towards the digital transformation of time-tracking systems, providing organizations with a scalable, efficient, and user-friendly solution.

## 2. SYSTEM ANALYSIS

Efficient time management is crucial for organizations, and timesheet systems play a vital role in tracking employee productivity. However, traditional systems often have limitations that hinder efficiency and accuracy. This section analyzes the existing systems, outlines their challenges, and explains how the proposed Timesheet Management System addresses these issues.

## 2.1 Overview of Existing System

Traditional timesheet management often involves manual processes or basic tools like paper-based forms or spreadsheet software (e.g., Excel). While these methods may suffice for small teams, they pose several challenges for larger organizations:

- **Error-Prone Processes:** Manual entry is prone to human errors, such as incorrect time entries or misplaced records.
- Lack of Real-Time Updates: Employees and managers must wait for updates, leading to delays in approvals.
- **Inefficiency in Workflows:** Managers face difficulty in tracking multiple timesheets and providing timely feedback.
- **Limited Security:** Manual systems lack robust authentication, leaving sensitive data vulnerable.

## 2.2 Advantages and Disadvantages of Existing and Proposed Systems

Aspect	Traditional System	Proposed System
Accuracy	Prone to human errors	Automated checks minimize errors
Efficiency	Time-consuming manual workflows	Automated workflows streamline processes
Real-Time Access	Updates delayed; requires manual sharing	Real-time updates accessible on dashboards
Security	Vulnerable to unauthorized access	Secure authentication and session management
Scalability	Not suited for large teams	Scalable to handle growing user bases
Cost	Low initial cost but high operational costs	Higher development cost but lower maintenance

# 2.3 Proposed System

The **Timesheet Management System** overcomes the challenges of traditional systems by offering a web-based solution built with modern web technologies. Key features of the proposed system include:

## Role-Based Functionality:

- Employees can log work hours, create timesheets, and track approvals.
- Managers can view, approve, or reject timesheets with remarks.
- **Automation and Efficiency**: Tasks such as categorizing timesheets into pending and processed sections are automated, reducing manual effort.
- Real-Time Updates: Managers can refresh their dashboard for the latest information.
- **Security**: User authentication ensures data integrity and prevents unauthorized access.

The system enhances productivity and transparency, providing a scalable and efficient platform for timesheet management.

## 3. System Design

The **Timesheet Management System** was designed using a modular and scalable approach, leveraging modern web technologies to ensure a seamless user experience. This section discusses the architecture, functionalities, and workflows implemented for employees and managers.

## 3.1 High-Level Architecture

The system follows a modern **MERN** (MongoDB, Express, React, Node.js) architecture, which ensures scalability, responsiveness, and maintainability. The key components of the architecture are:

# Front-End (React):

- o Provides a dynamic and interactive user interface for employees and managers.
- Ensures responsiveness across devices with a mobile-first design.
- Implements state management to handle user data efficiently.

# • Back-End (Node.js and Express):

- Serves as the middleware between the client and the database.
- Handles RESTful API requests, ensuring secure and efficient data transactions.
- o Implements business logic, such as approval workflows and time validation.

# • Database (MongoDB Atlas):

- A NoSQL database designed to store user details, timesheets, and approval statuses.
- Offers high scalability and secure cloud-based storage.

#### • Communication Flow:

- Users interact with the application via the React front-end.
- Requests are processed by the Node.js back-end, which communicates with the MongoDB database.
- The results are returned to the front-end for display.

# 3.2 Employee Functionalities

The system provides employees with the following features:

# 1. Login and Authentication:

Secure login with credentials stored in the database.

Prevents unauthorized access using token-based authentication.

#### 2. Check-In and Check-Out:

- Employees can log their start and end times.
- o The system ensures a minimum gap of 8 hours between check-in and check-out.

#### 3. Create Timesheets:

- Employees can log their daily activities and submit them for approval.
- o Timesheets include details such as date, task description, and total hours worked.

#### 4. View Timesheet Status:

- o Employees can track the status of their submitted timesheets.
- Statuses include pending, approved, or rejected with remarks.

## 5. Logout:

Securely ends the session, ensuring data privacy.

These features aim to simplify the timesheet creation process and provide employees with real-time updates on their submissions.

## 3.3 Manager Functionalities

Managers have a distinct set of functionalities to oversee and approve timesheets:

# 1. Login and Dashboard Access:

- Managers log in securely and access a personalized dashboard.
- o The dashboard displays all timesheets, categorized as pending or processed.

#### 2. Review Timesheets:

- Managers can view details of each timesheet, including task descriptions and hours worked.
- This feature allows them to ensure accuracy before taking action.

# 3. Approve or Reject Timesheets:

- Managers can approve or reject timesheets directly from the dashboard.
- Rejection requires a remark, providing feedback to the employee.

#### 4. Refresh Dashboard:

- The dashboard can be refreshed to display real-time updates.
- $_{\circ}\,$  This feature is useful in organizations with frequent timesheet submissions.

### 5. Logout:

Ends the session securely, maintaining data confidentiality.

These functionalities ensure managers can efficiently oversee timesheet workflows while maintaining transparency and accountability.

## 4. WORK RESPONSIBILITIES

## 4.1 Internship position

I worked as a **React Developer Trainee** at Titan Company Limited, contributing to the development of the Timesheet Management System. My role involved designing user interfaces, integrating APIs, and ensuring a responsive, secure application.

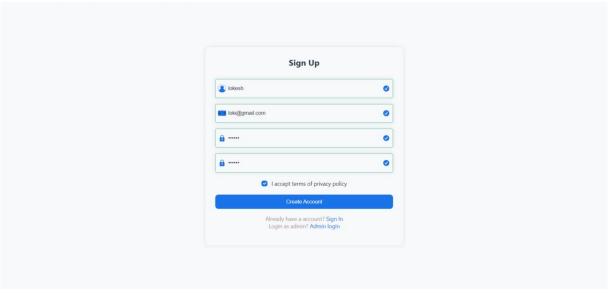
### 4.2 Description of Internship

The internship spanned over 10 days, during which I:

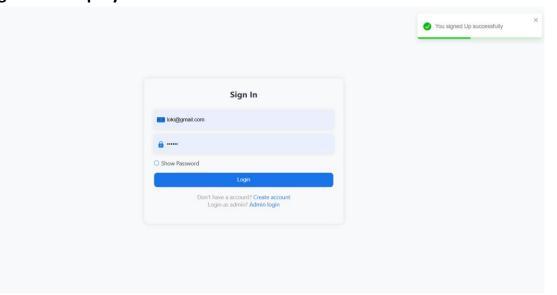
- Developed and implemented employee and manager-specific functionalities.
- Collaborated with mentors to refine workflows and features.
- Gained exposure to full-stack development and professional coding practices.

### **4.3 Project Screen shots**

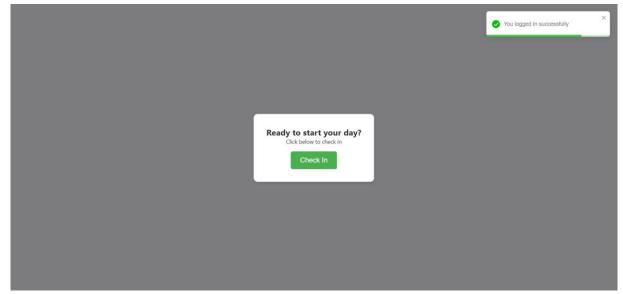
## 4.3.1 Sign Up for Employee:

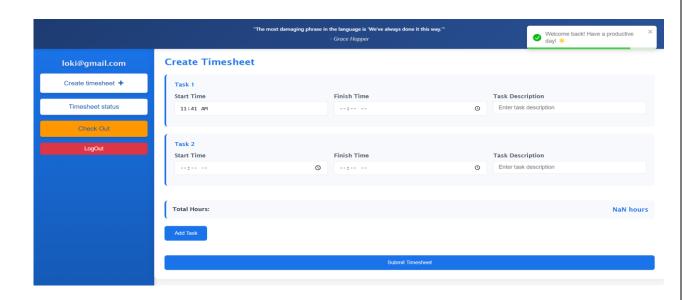


# 4.3.2 SignIn for Employee:

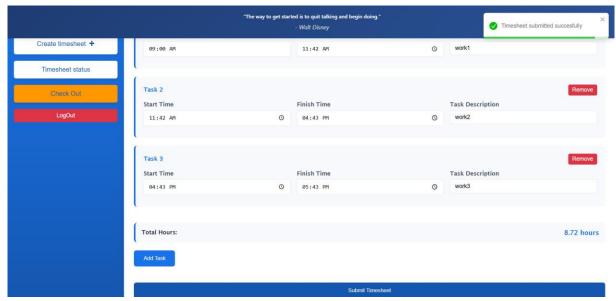


# 4.3.3 Ckeck In page:

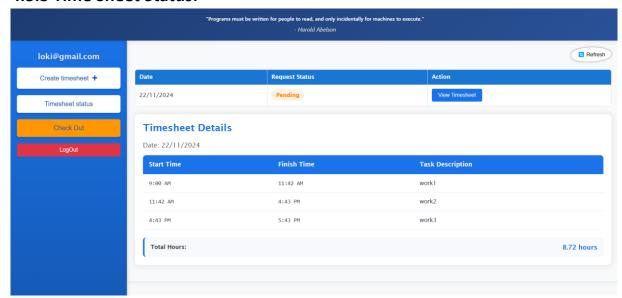




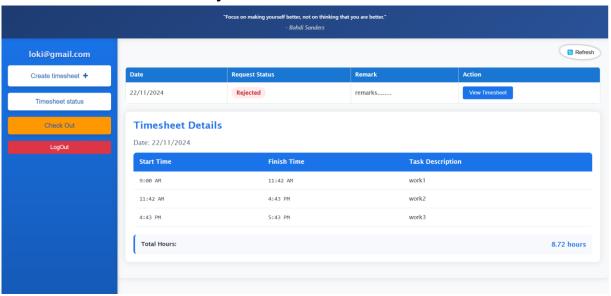
## 4.3.4 Create Time Sheet:



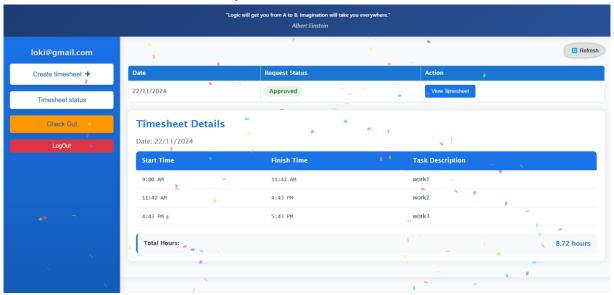
# 4.3.5 Time Sheet Status:



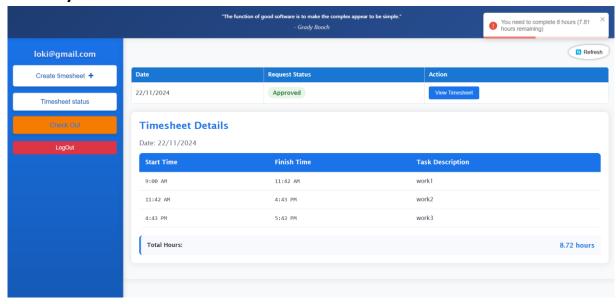
# 4.3.6 Time Sheet Status - Rejected:



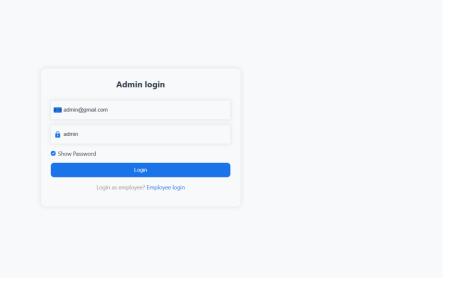
# 4.3.7 Time Sheet Status - accepted:



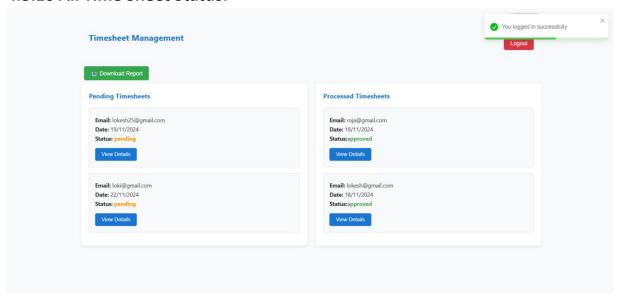
# 4.3.8 Try to checkout before 8 hrs:



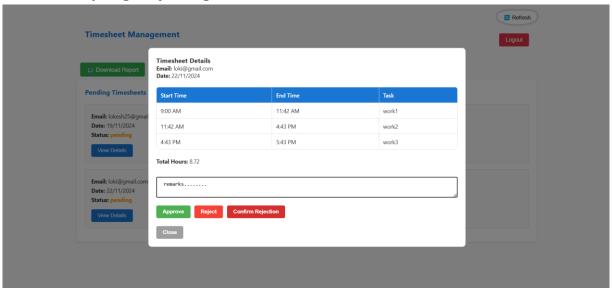
# 4.3.9 SignIn for Manager/Admin:



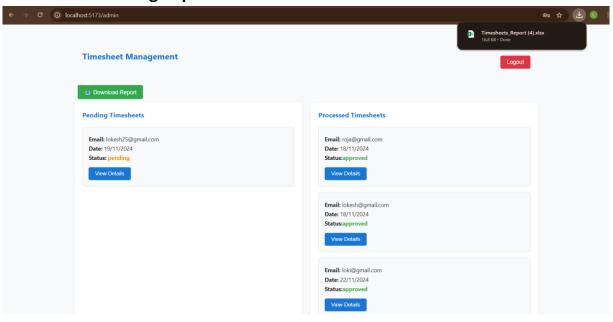
# 4.3.10 All Time Sheet Status:



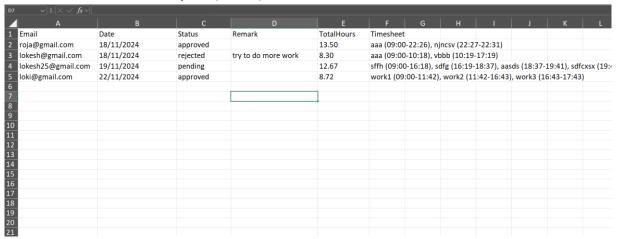
# 4.3.11 Accepting/Rejecting Timesheets:



# 4.3.12 Downloading Report:



## 4.3.13 Downloaded Report(Excel):



# 4.4 Outcomes of Internship

The internship at **Titan Company Limited** provided several valuable outcomes, both in terms of technical expertise and professional growth:

#### 1. Technical Skills:

- Gained hands-on experience with **React** for developing dynamic and responsive user interfaces.
- Improved understanding of Node.js and Express for backend development and API integration.
- Learned to work with MongoDB Atlas, including schema design and CRUD operations.
- Implemented RESTful APIs to enable seamless communication between the frontend and back-end.
- Enhanced knowledge of session management and secure user authentication workflows.

# 2. Professional Development:

- Developed problem-solving skills by debugging and resolving issues during application development.
- Gained exposure to working in an agile development environment, emphasizing iterative progress and teamwork.
- Improved ability to collaborate effectively with mentors and peers, ensuring timely project delivery.

#### 3. Deliverables:

 Successfully delivered a fully functional Timesheet Management System with the following features:

- Employee login, check-in/check-out, timesheet creation, and status tracking.
- Manager dashboard with functionality for reviewing, approving, and rejecting timesheets.
- o Ensured responsiveness, usability, and secure data handling in the system.

#### 4. Personal Growth:

- Boosted confidence in building scalable, user-friendly web applications.
- Developed a better understanding of industry standards and best practices for software development.
- Learned to adapt quickly to new tools and technologies within a short timeframe.

## 5. Project Impact:

- Provided a scalable solution for efficient timesheet management, reducing manual efforts and enhancing workflow automation.
- o Contributed to improving productivity and transparency within the organization.

#### 6. Skills Learned

During my internship at **Titan Company Limited**, I gained valuable technical and professional skills that enhanced my capabilities as a developer.

#### **Technical Skills**

#### 1. React Development:

- Developed dynamic and interactive user interfaces using React.js.
- Gained experience in state management, component lifecycle, and using React Router for navigation.

#### 2. Node.js & Express:

 Built back-end servers using Node.js and Express, enabling efficient handling of API requests and data processing.

#### 3. Database Management:

 Worked with MongoDB Atlas, creating schemas for user data and timesheets, and managing CRUD operations.

#### 4. Authentication:

 Implemented JWT for secure user authentication, ensuring safe login processes and session management.

#### 5. Responsive Design:

 Developed a mobile-first, responsive design that ensures the application functions well across devices.

#### **Professional Skills**

## 1. Time Management:

 Effectively managed development tasks and deadlines, ensuring timely delivery of features.

#### 2. Collaboration:

 Worked closely with mentors and peers, enhancing my communication and teamwork skills.

### 3. Problem-Solving:

 Applied logical thinking to debug and troubleshoot issues, ensuring a smooth user experience.

#### **Personal Growth**

- Gained confidence in **full-stack development** by working on both front-end and backend components of the application.
- Learned to adapt to new tools and technologies, increasing my ability to take on diverse challenges.

#### 6. Conclusion

My internship at **Titan Company Limited** has been an enriching and transformative experience. Working on the **Timesheet Management System** provided me with the opportunity to apply theoretical knowledge in a real-world setting and develop a functional, scalable application using modern web technologies.

Throughout the project, I gained valuable technical skills, including **React development**, **Node.js** integration, **MongoDB Atlas** for data management, and **JWT authentication**. I also developed a deeper understanding of full-stack development, problem-solving, and the importance of responsive design.

In addition to enhancing my technical skills, the internship helped me grow professionally by improving my time management, collaboration, and communication abilities. I also learned to work effectively in an agile environment, managing tasks and deadlines while collaborating with team members.

Overall, this internship has significantly improved my development skills, prepared me for future challenges in the software development field, and reinforced my passion for building impactful and user-friendly applications.