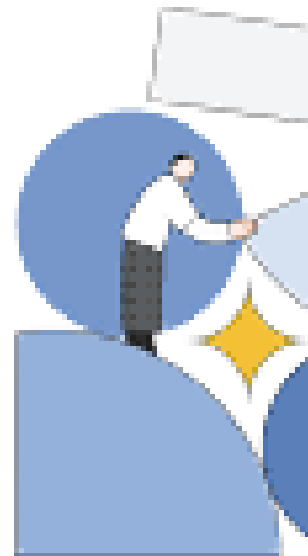


# DETAILS

Build  
for Bharat  
Hackathon



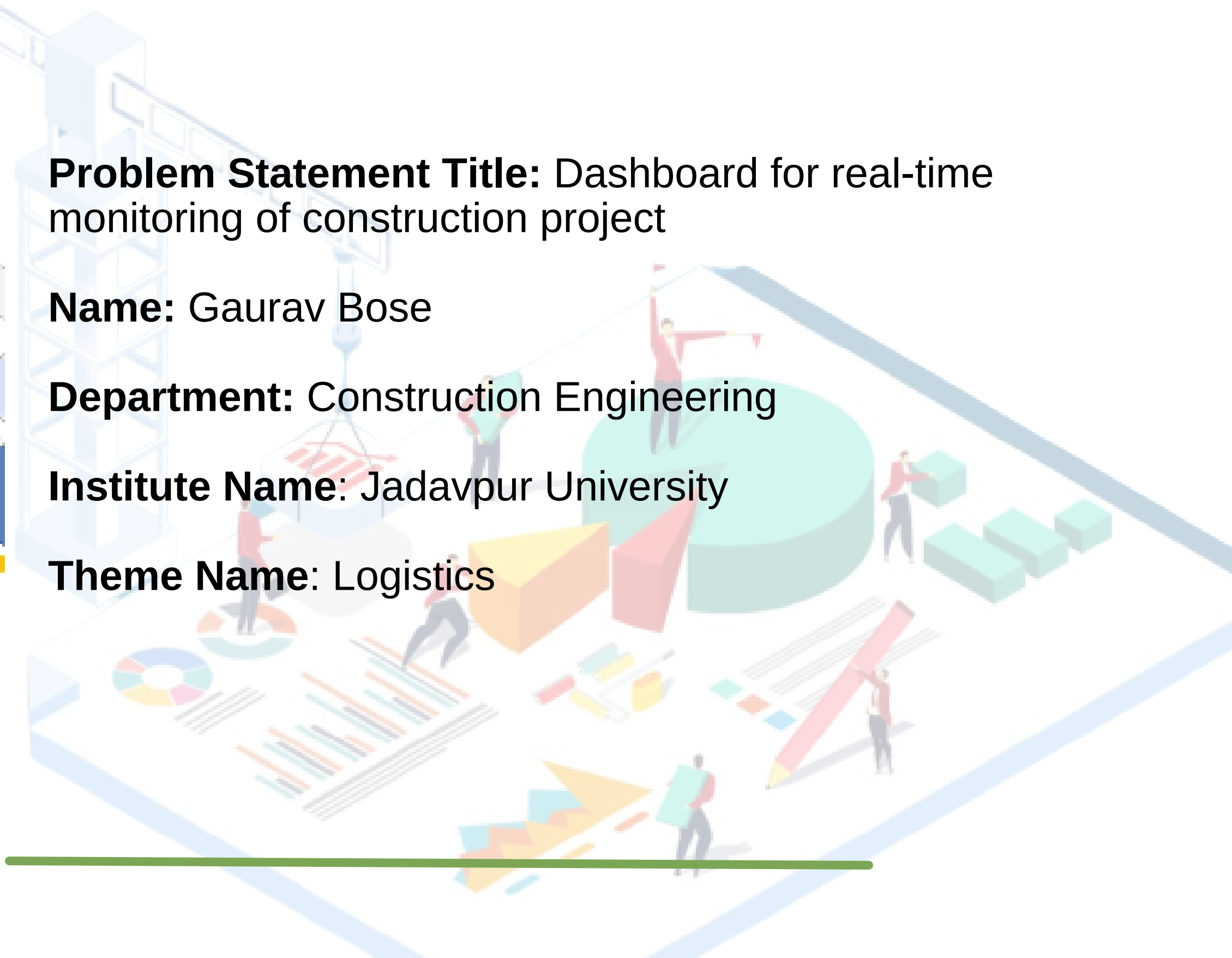
**Problem Statement Title:** Dashboard for real-time monitoring of construction project

**Name:** Gaurav Bose

**Department:** Construction Engineering

**Institute Name:** Jadavpur University

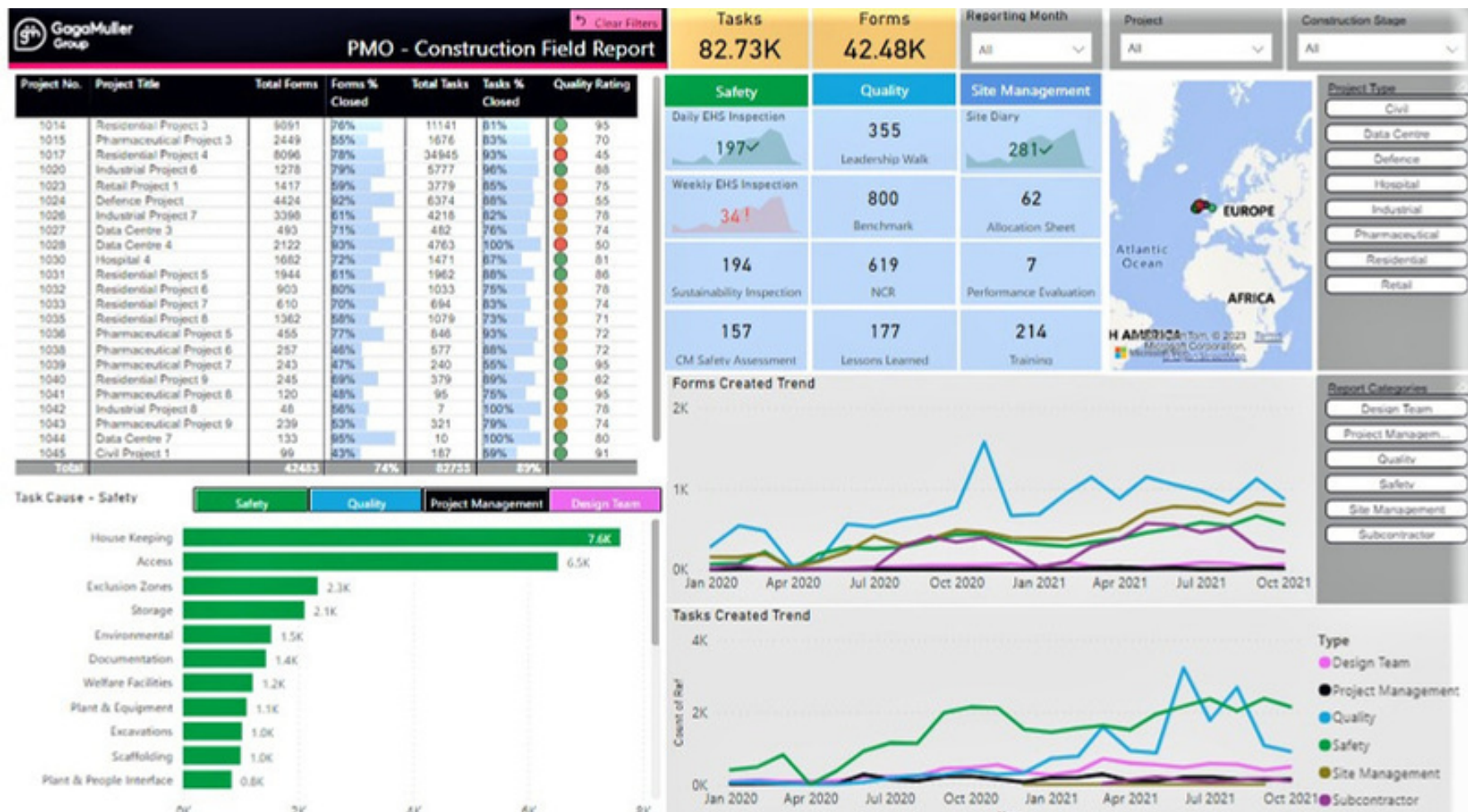
**Theme Name:** Logistics



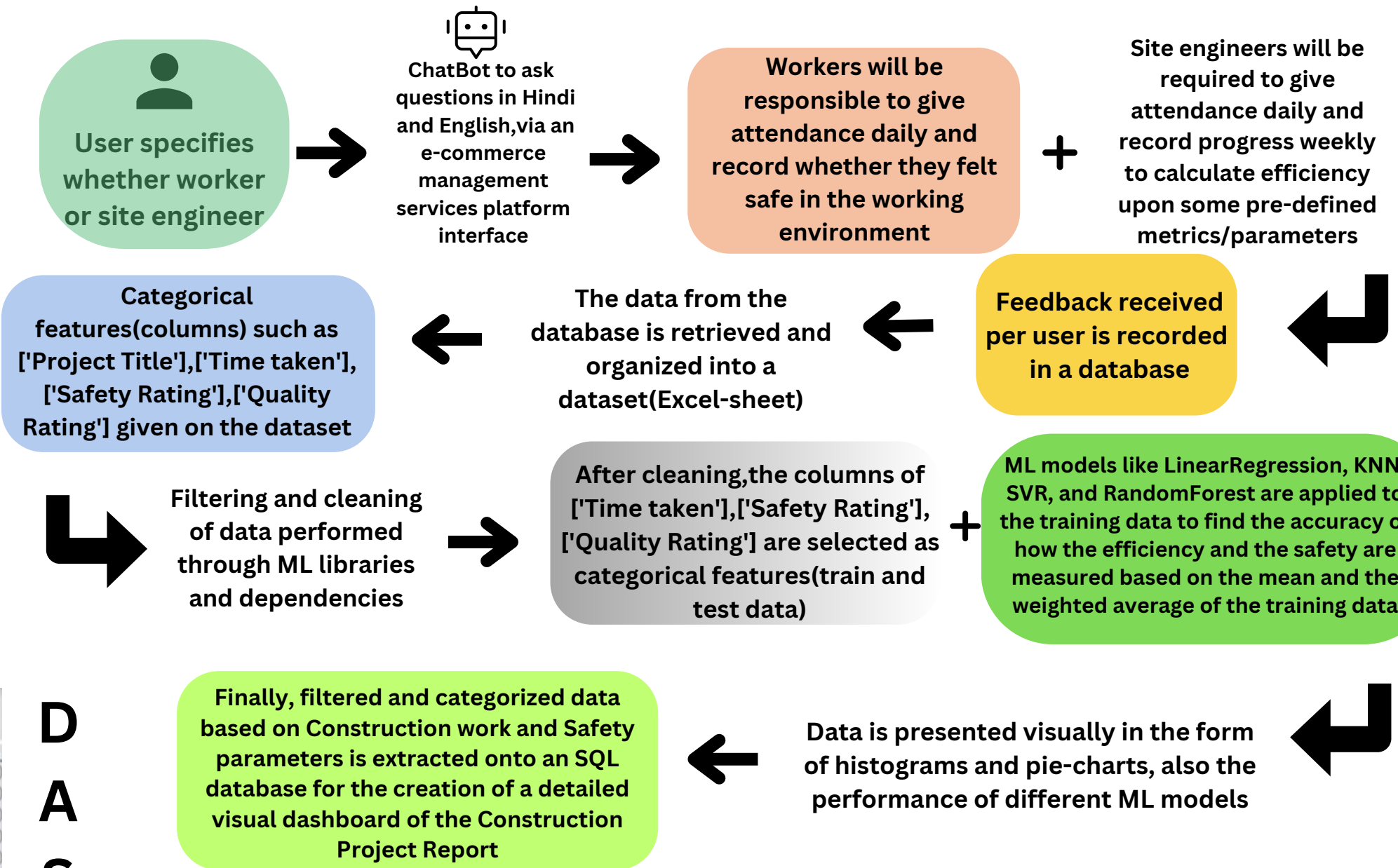
# Idea Description

## Prototype:

- Data Collection:** The IoT ChatBot acts as an interface for e-commerce management services(under the realm of infrastructure management), allowing both workers and site engineers to input critical information about safety and efficiency practices at construction sites. This information encompasses many factors, such as incident reports, equipment status, and workflow observations.
- Data Recording:** Once the data is provided through the ChatBot, it is meticulously recorded in a centralized database, via cloud-based network servers hosted in the e-commerce platform..
- Machine Learning Integration:** The collected data forms the basis for insights and improvements. Machine learning algorithms are employed to process and optimize this data.
- Dashboard Creation:** On a weekly basis, the processed data is harnessed to generate dynamic dashboards. These dashboards offer a comprehensive visual representation of the construction site's safety and efficiency metrics for instantaneous evaluation.



## Flowchart:



## DASHBOARD

## Technology stacks used:





# Deployment in Industrial Context

## Revolutionizing Construction Project Management through E-commerce retail platform and SaaS model

- 

**1.Supervising Large-Scale Industrial Projects:** Overseeing and coordinating the execution of extensive industrial projects, ensuring seamless operations and successful completion.
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**2. Monitoring Progress of Highway and Railway Projects:** Vigilantly tracking the development and milestones of highway and railway construction initiatives, ensuring they adhere to established timelines and quality standards.
- 

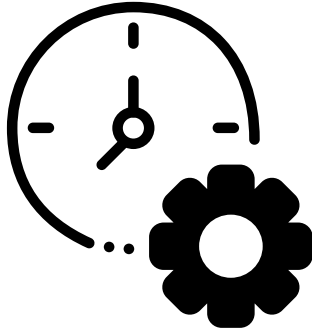
**3. Maintenance Monitoring:** Consistently observing and documenting maintenance activities to guarantee equipment and infrastructure remain in optimal working condition, minimizing disruptions and operational downtime.
- 


**4.Adherence to ESH Guidelines:** Strictly adhering to Environmental, Safety and Health (ESH) guidelines to guarantee the safety of workers, protection of the environment, and compliance with regulatory requirements.
- 

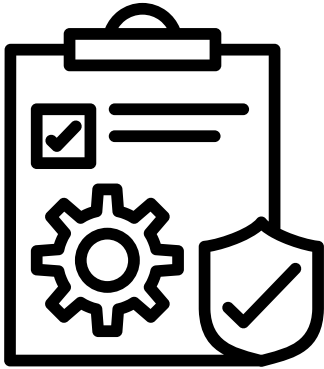
**5.Resource Optimization:** Effectively managing and allocating resources, including manpower, materials, and equipment, to maximize efficiency and minimize waste in project execution.
- 

**6.Maintaining a High Standard of Work Environment:** Creating and sustaining a safe, organized, and productive work environment for all team members, fostering a positive and conducive atmosphere for project success.

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**1.Real-time Construction safety oversight:** Implementing a system that allows for constant vigilance and immediate action regarding safety measures on the construction site. This involves monitoring the adherence to safety protocols, identifying potential hazards, and ensuring the well-being of all workers in real-time.
- 

**2.Operational Efficiency Evaluation:** Continuously assessing the effectiveness and efficiency of various construction processes and workflows as the project unfolds. This involves identifying areas where improvements can be made to optimize resource utilization and reduce unnecessary delays.
- 

**3.Resource Tracking and Management:** Keeping a close eye on the allocation and utilization of resources such as materials, equipment, and labor throughout the construction project. This ensures that resources are used judiciously, minimizing waste and preventing shortages.
- 

**4.Ongoing Quality Assessment:** Regularly evaluating the quality of workmanship and the adherence to established quality standards during all stages of construction. This includes identifying any deviations from quality requirements and taking corrective measures to maintain the desired level of excellence.