

# Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: **Ministry of Textiles**

PS Code: **SIH1309**

Problem Statement Title: **Application Development for monitoring of wool from Farm to fabric**

Team Name: **Zenith**

Team Leader Name: **Aditya Anand**

Institute Code (AISHE): **U-0064**

Institute Name: **Indian Institute of Technology, Patna**

Theme Name: **Transportation and Logistics**

# Idea/Approach Details

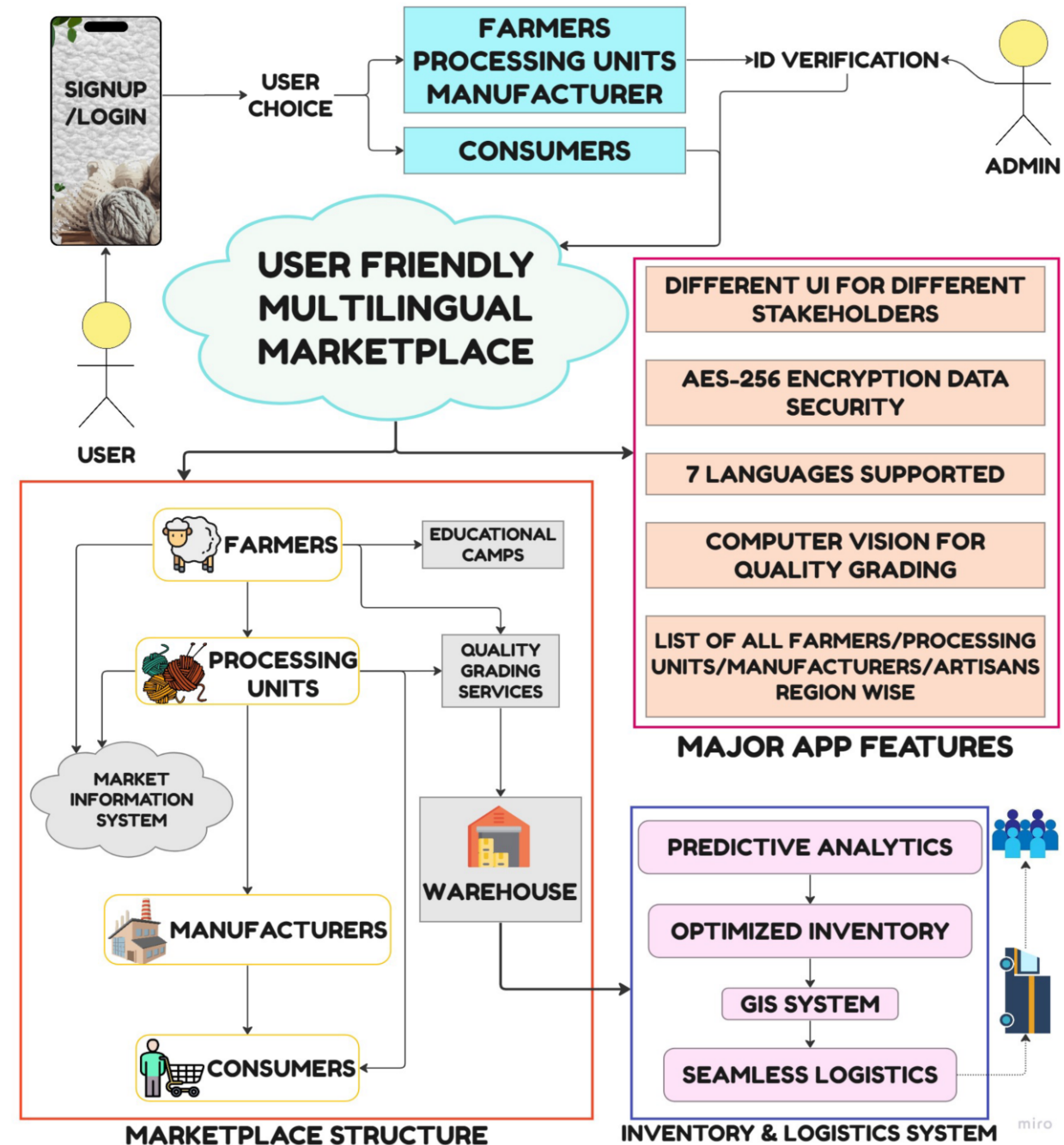
Developing an **Android** app that will serve as a one-stop platform addressing key challenges in wool industry. The prototype will function as follows :-

- Establish a **market information system** that uses **AI & ML** to provide **real-time updates** on wool prices in localized markets.
- App will include **govt.-certified wool grading centers**, with certificates uploaded on the app to ensure quality for producers.
- Implement **ML & Predictive Analytics** for cost-effective operations in **inventory & logistics management**.
- Create a **marketplace** platform with **AI-driven analytics** to connect farmers, producers, and manufacturing units, ensuring **transparency, quality, and efficiency**.
- Collaboration with **NGOs & govt** for comprehensive support, including **hands-on training** for wool farmers/producers.
- Create a **comprehensive database** of wool producers & artisans, organized by geographical location.

Describe your Technology stack here:



Flowchart of our Solution :



# Idea/Approach Details

Describe your Use Cases here

- **Marketplace:** Farmers, manufacturers, producers and consumers are connected in an online marketplace.
- **Quality Grading Services:** Upload a picture of your wool sample to our app to get a precise quality grading assessment.
- **Government Schemes and NGOs:** Helps them avail to government schemes and contact nearby NGOs.
- Use **GIS (Geographic Information System)** Technology to track transport trucks and map nearby water sources, veterinary clinics and wool collection centers.
- **News:** Provides news about relevant factors such as price trends, weather reports etc.
- **Education:** Partner with government and use IIT Patna's NSS for app training and awareness in target regions.

Describe your Dependencies / Show stopper here

- **Data Security:** App employs **AES-256 encryption**, **MFA**, and regular security audits to safeguard sensitive user data and government schemes.
- **Price Trends Accuracy:** We used industry databases and real-time market analysis for accurate price trends, preventing user losses.
- **Multi-Language Support:** Cater to a diverse userbase by offering support for multiple languages.
- **Tracking System:** We use **GIS and Google Maps API** to display nearby resources and track drivers for real time delivery tracking.
- **AI Quality Grading:** We use **OpenCV** and pre-existing models to grade the quality of wool.
- **Scalability:** Our platform is designed to easily scale and accommodate a growing number of users and transactions.
- Our **messaging platform** helps buyers and sellers to communicate and negotiate terms.

# Team Member Details

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**Team Leader Name: ADITYA ANAND**

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): Civil Engineering

Year (I,II,III,IV): II

**Team Member 1 Name: TANVI MISHRA**

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): Metallurgical & Materials

Year (I,II,III,IV): II

**Team Member 2 Name: ABHAY GUPTA**

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): Chemical Engineering

Year (I,II,III,IV): II

**Team Member 3 Name: KUMAR NALIN SINGH**

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): Metallurgical & Materials

Year (I,II,III,IV): II

**Team Member 4 Name: SHREYAS GUHA**

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): Chemical Engineering

Year (I,II,III,IV): II

**Team Member 5 Name: ANKIT AZAD**

Branch (Btech/Mtech/PhD etc): Btech

Stream (ECE, CSE etc): Computer Science Eng

Year (I,II,III,IV): II