



# Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation: Ministry of Textiles

PS Code: 1309

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

Team Name: STARRS

Team Leader Name: Rohan Doshi

Institute Code (AISHE): C42072

Institute Name: Pune Institute of Computer Technology

Theme Name: Transportation & Logistics

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# Idea/Approach Details

Leveraging blockchain, AI, and real-time tracking, this methodology enhances wool industry transparency, quality assessment, and accessibility across market information, tracking, quality assurance, storage, processing, trading, marketplace, and education. Here are the 8 key features :

## 1. Wool Market Information

- a. API integration with TradingEconomics for real-time data.

## 2. Wool Tracking

- a. Blockchain-based tracking with serialization.
- b. Ethereum smart contracts for data aggregation.
- c. QR codes for real-time tracking.

## 3. Quality Assurance

- a. Mobile app for wool sample capture.
- b. Phase1: Deep learning for quality assessment.
- c. Phase2: Partner with third-party quality assessors
- d. Blockchain certificates for origin and quality.

## 4. Wool Storage & Warehousing

- a. ML for inventory and demand forecasting.
- <sup>2</sup>b. Supply chain logistics for efficient inventory management.

## 5. Wool Processing

- a. MongoDB database and Node.js backend.
- b. Location-based service requests.
- c. User authentication, reviews, ratings & notifications

## 6. Wool Trading Platform

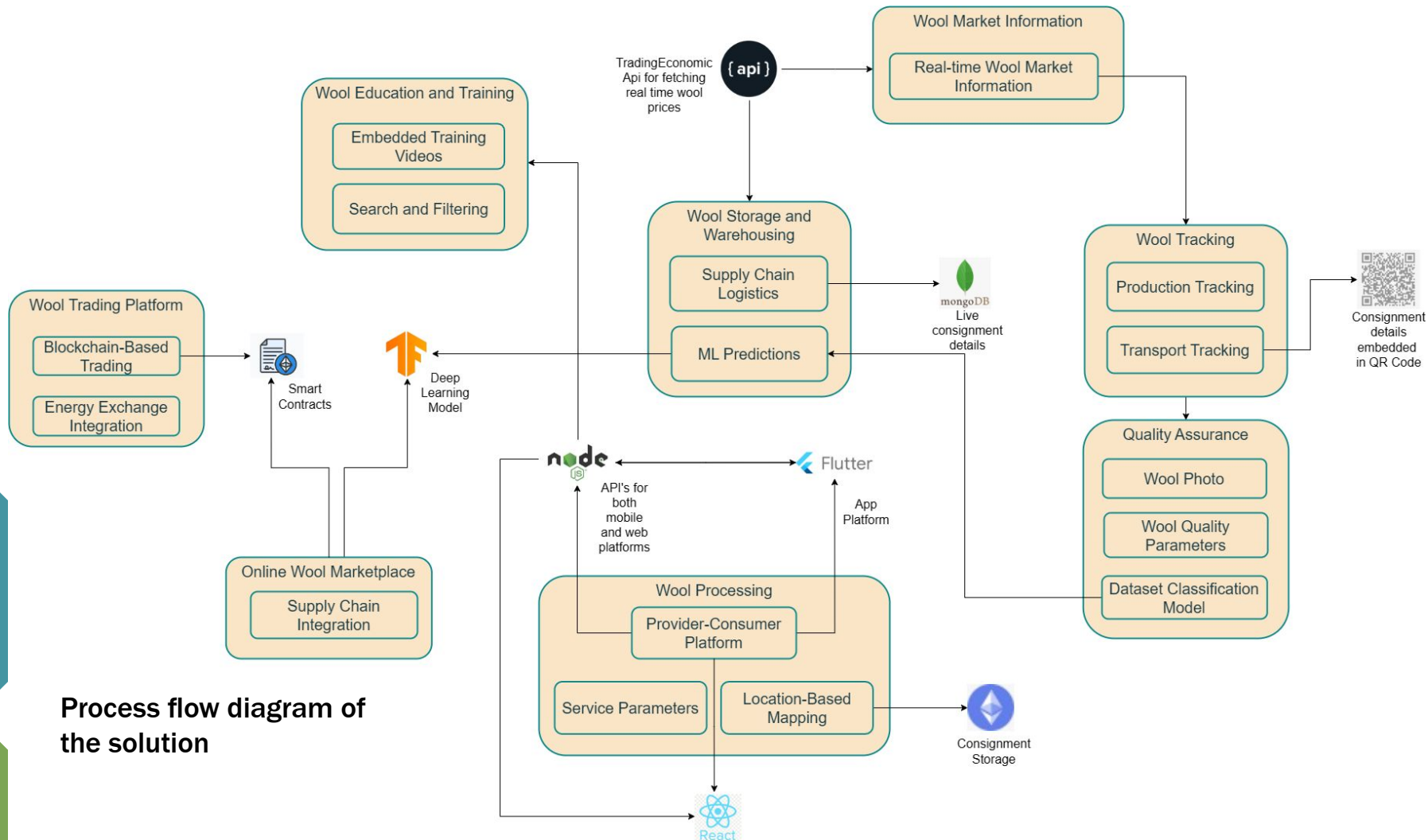
- a. Secure blockchain transactions.
- b. Smart contracts for transparency.
- c. Transaction history on Ethereum.

## 7. Online Wool Marketplace

- a. Marketplace with detailed wool product information and pricing.

## 8. Wool Education & Training

- a. Mobile-focused training with videos.
- b. SMS and IVR for basic phones.
- c. Content search and filters by keywords, skills, location, etc.



**Process flow diagram of the solution**

# Idea/Approach Details

Describe your Use Cases here

- **Market Intelligence and Cost Efficiency:** Producers optimize sales timing and reduce transaction costs with real-time market insights, improving cost-efficiency.
- **Supply Chain Excellence and Quality Assurance:** Streamlined supply chains minimize waste, while quality assurance maintains consistent high quality, enhancing reputations.
- **Direct Trading and Market Expansion:** Direct trading boosts profit margins and expands market reach for producers, reducing intermediary costs.
- **Sustainability and Compliance:** Blockchain-certified sustainability attracts eco-conscious buyers, enhancing brand image and compliance.
- **Education, Skills, and Collaboration:** The platform enhances skills, fosters collaboration, and provides market insights, boosting competitiveness and revenue.

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Describe your Dependencies / Show stopper here

- The real-time data from the API for market wise analysis
- The quality of Quality assurance dataset
- Third Party physical quality check and serialization of wool quality.
- Available resources for educational training and content.

Technology Stack:



# Team Member Details

## Rohan Mukund Doshi

Branch: BTech      Stream: CSE      Year: IV

## Ruturaj Sanjay Ghatage

Branch: BTech      Stream: CSE      Year: IV

## Aditya Ashutosh Kulkarni

Branch: BTech      Stream: CSE      Year: IV

## Sharvi Yogesh Endait

Branch: BTech      Stream: CSE      Year: IV

## Sanika Abhay Inamdar

Branch: BTech      Stream: CSE      Year: IV

## Tanmay Shrikant Karmarkar

Branch: BTech      Stream: CSE      Year: IV

## Team Mentor 1 Name: Dr. Geetanjali Kale

Category: Academic      Expertise: AI/ML      Domain Experience (in years): 10

## Team Mentor 2 Name: Mr. Pratik Patil

Category: Industry      Expertise: Blockchain      Domain Experience (in years): 4