- **Problem StatementTitle-** DRUG INVENTORY AND SUPPLY CHAIN TRACKING SYSTEM
- **Theme-** MEDTECH/BIOTECH/HEALTHTECH
- **PS Category-** SOFTWARE
- **Team Name –** VTHT Tech Tribe

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Drug Inventory and Supply Chain Tracking System

❖Proposed Solution

- The proposed solution is a Drug Inventory and Supply Chain Tracking System designed to **streamline the distribution**.
- Availability of drugs in hospitals and medical institutions.
- The system will use modern technologies and **Artificial Intelligence** to provide **real-time tracking, monitoring**, and **management** of drug inventory across the supply chain.
- The system aims to ensure that the **right drugs** are available in the **right quantity**, at the **right time**, **place,** and **cost**, in the **right condition**, and for the **right people**.

How the Solution Addresses the Problem:

- Ensures Drug Availability
- Improves Procurement Efficiency
- Monitors Drug Consumption Patterns
- Reduces Costs and Waste
- Improves Data Security

Innovation and Uniqueness of the Solution:

- Integrated Multi-Database Approach
- Real-Time Dashboard Monitoring
- Focus on Data-Driven Decisions
- Enhanced Security with Modern Protocols
- AI based Forecasting

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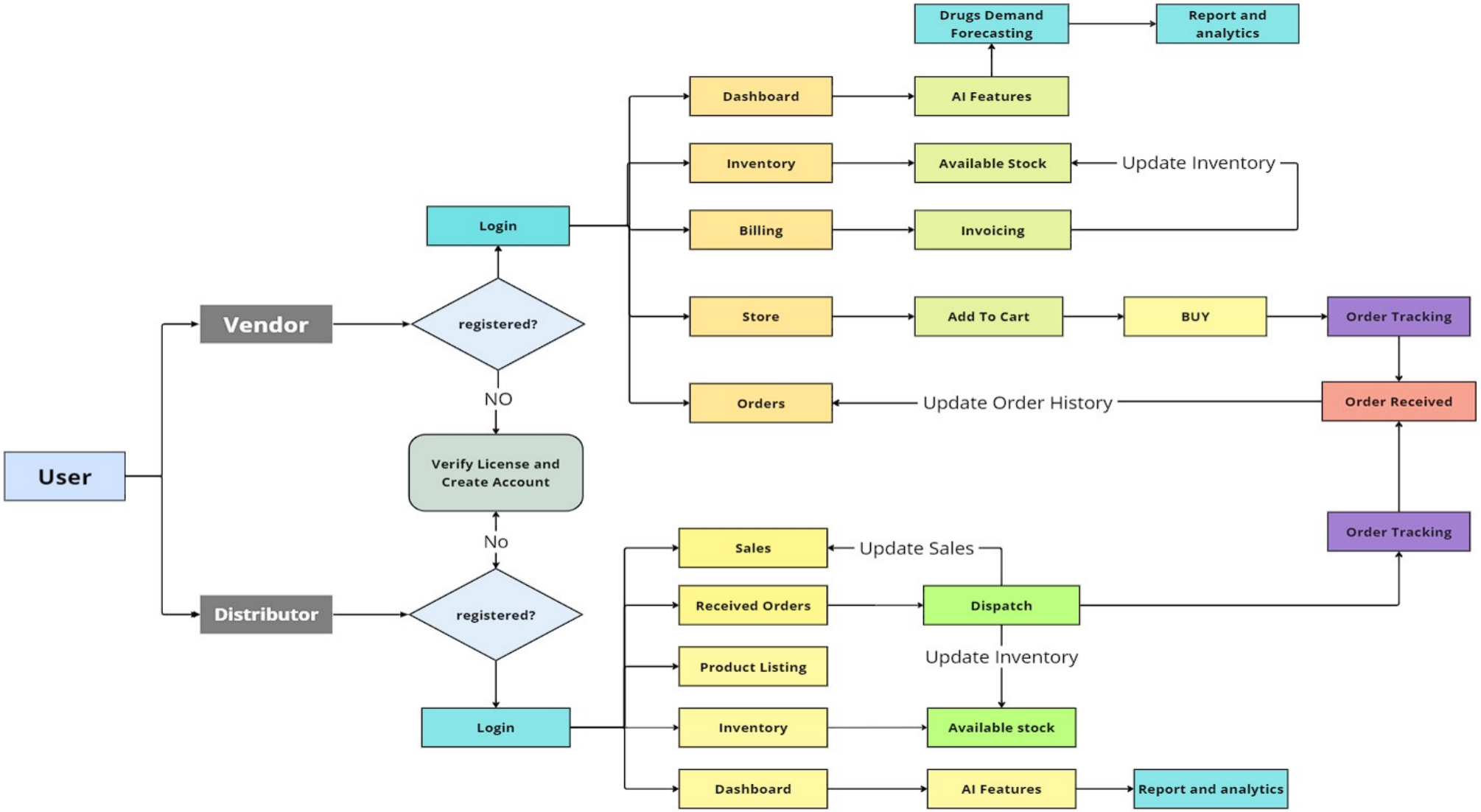
TECHNICAL APPROACH



TensorFlow
NumPy
scikit learn
matplotlib

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FEASIBILITY AND VIABILITY

Feasibility:	Challenges and Risks:	Strategies for Overcoming These Challenges:
1. **Technical Feasibility** • Technology Stack • Cloud Integration • Security 2. **Operational Feasibility** • Ease of Use • User Adoption 3. **Financial Feasibility** • Cost Considerations • Scalability	1. **Data Accuracy and Integrity** • Challenge: Ensuring data is up to date. • Risk: Errors can cause inventory issues. 2.**System Integration** • Challenge: Connecting with existing systems. • Risk: May loss data . 3.**Cybersecurity** • Challenge: Protecting sensitive data. • Risk: Breaches can cause theft and losses.	• Ensuring Data Accuracy and Integrity • Smooth Integration with Existing Systems • Enhancing Cybersecurity Measures • Managing Vendor Reliability • Ensuring Regulatory Compliance

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IMPACT AND BENEFITS

Benefits:

1.Improved Drug Availability:
Ensures essential medicines are always available, reducing shortages.

2.Cost Reduction:
Optimizes procurement and reduces wastage, leading to cost savings for hospitals and institutions.

3.Real-Time Monitoring:
Enables real-time tracking of inventory, shipments, and consumption patterns through a dashboard.

4.Vendor Accountability:
Improves vendor performance by tracking their activities and ensuring timely deliveries.

5.Enhanced Decision-Making:
Provides data-driven insights into drug usage, improving procurement planning.

Impacts:

1.Social Impact:
Better access to medicines, improving public health.

2.Environmental Impact:
Reduces pharmaceutical waste and lowers carbon emissions due to optimized transportation and procurement.

3.Economic Impact:
Lowers healthcare costs for patients and increases competition among vendors, leading to more affordable drug prices.

4.Governance and Policy Impact:
Provides governments with data to make informed decisions on healthcare policy and resource allocation.

5.Job Creation and Innovation:
Creates jobs in IT, supply chain management, and logistics, and fosters innovation in pharmaceutical distribution.

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RESEARCH AND REFERENCES

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5. **"Data analytics in pharmaceutical supply chains: state of the art, opportunities, and challenges"**, Angie Nguyen, Samir Lamouri, Robert Pellerin, Simon Tamayo, Béranger Lekens, Received 30 Oct 2020, Accepted 16 Jun 2021, Published online: 19 Jul 2021