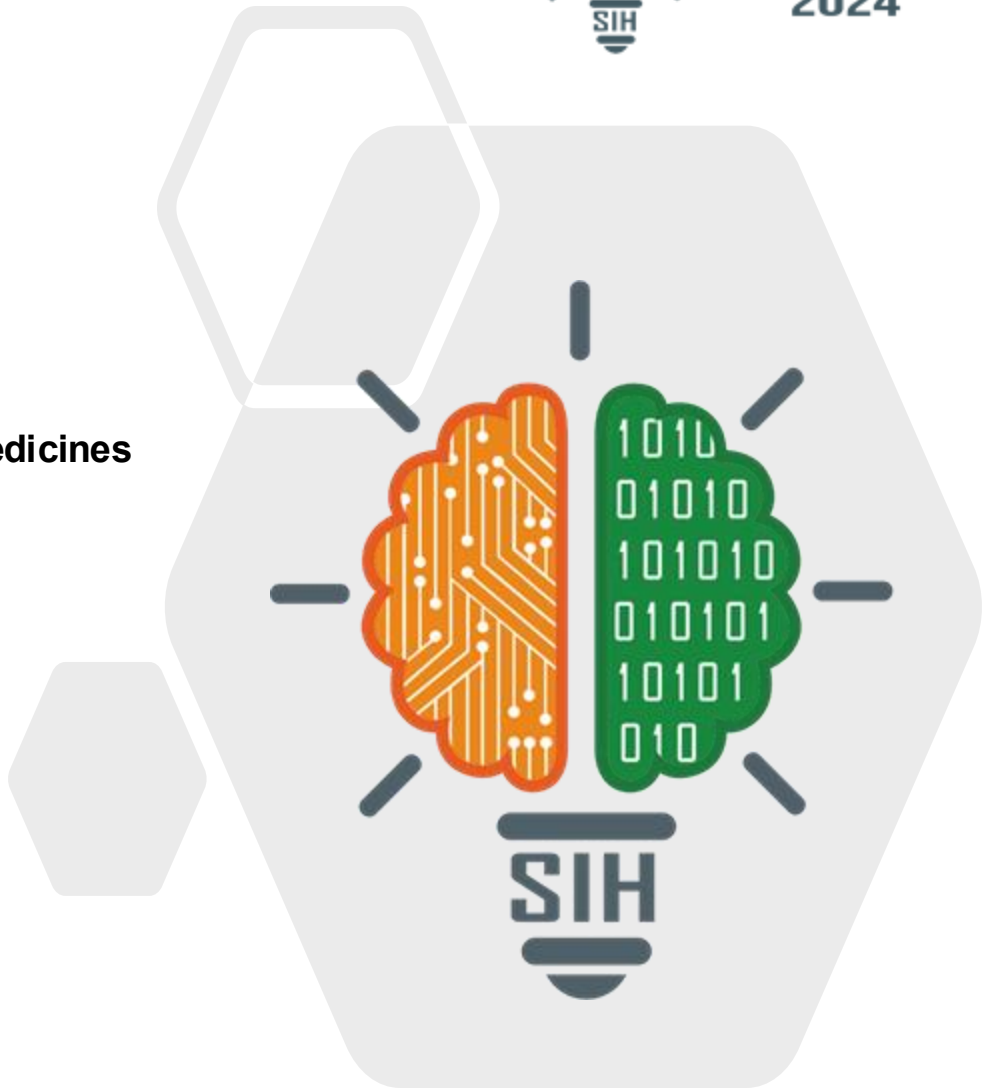
SMART INDIA HACKATHON 2024

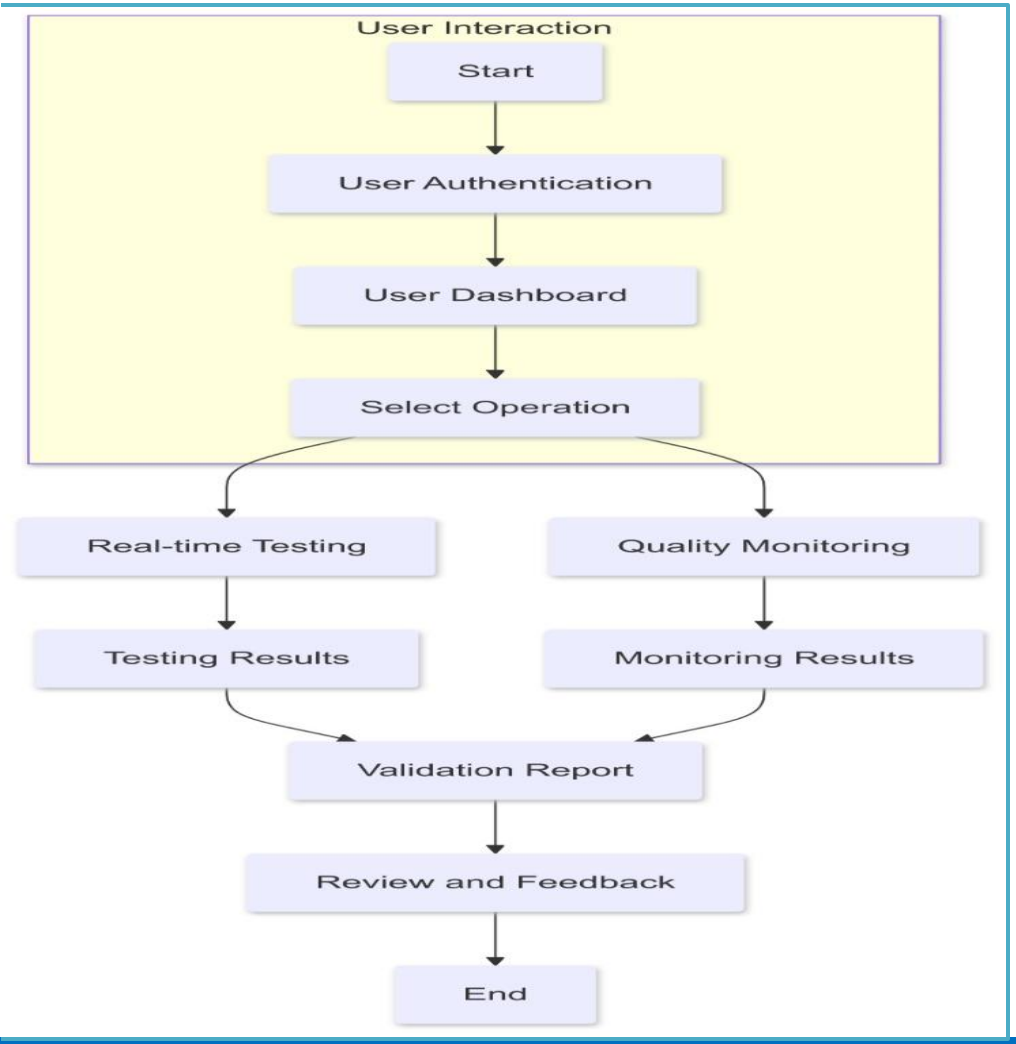
TITLE PAGE

- **Problem Statement ID –1621**
- **Problem Statement Title-Online testing and monitoring of quality of medicines and consumables.**
- **Theme- MedTech / Bio Tech / Health Tech.**
- **PS Category- Software**
- **Team ID-**
- **Team Name (Registered on portal)-Medi-Sure**



MEDI-SURE-A Quality Monitoring Software

❖ Flowchart



❖ Optical Character Recognition

Product ID	Name	Manufacturer	Dosage	Expiry Date
1	Paracetamol	Cipla	500mg	2024-05-10
2	Aspirin	Cipla	75mg	2023-12-25

TECHNICAL APPROACH

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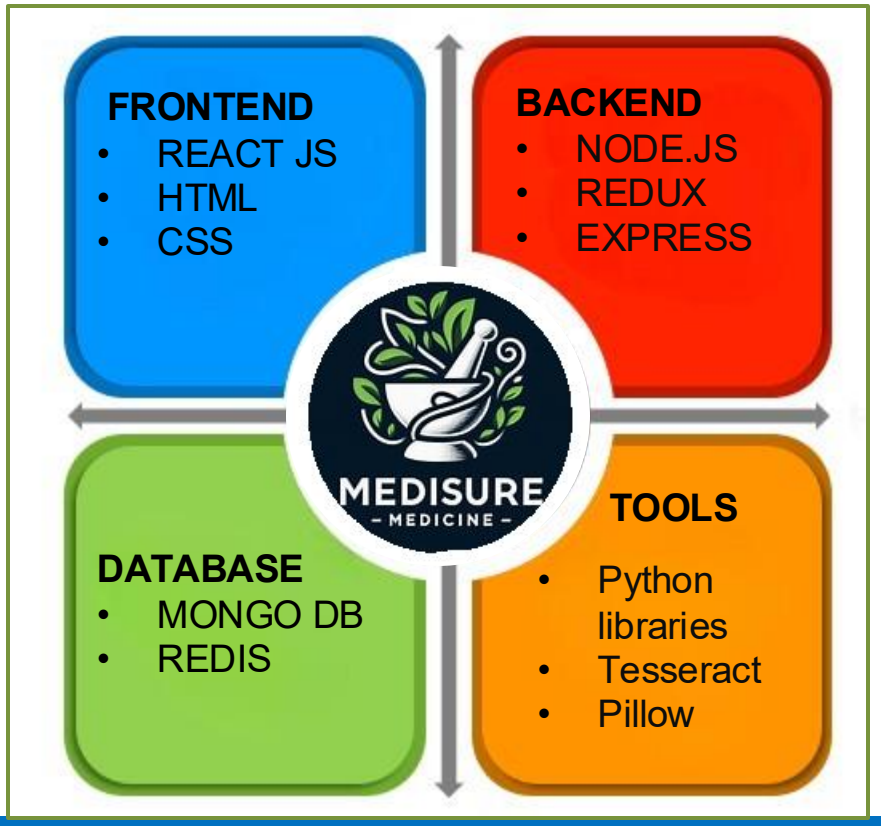
❖ Tech-Stack



❖ Work-flow of the Software

1. **User Interaction**
   The user visits the website and uploads an image of medicine packaging.
2. **Backend Processing**
   The uploaded image is sent to the backend for processing.
3. **OCR**
   OCR extracts textual information from the uploaded image using CV2, Pillow, and Tesseract.
4. **Database Interaction**
   Extracted data is compared with existing records in the MongoDB database.
5. **Verification**
   If product details match, the system validates the product and notifies the user.

FEASIBILITY AND VIABILITY

Feasibility of the idea

Technical Feasibility

- Backend
- Frontend
- Real-time Monitoring
- Data Integration
- Scalability

Potential challenges and risks

- Data Accuracy
- Security
- Integration with existing systems
- Compliance

Strategies for overcoming these challenges

Data accuracy

- *Automated Data Validation*
- *Cross-Verification*
- *Training*

Integration with existing systems

- *API Integration*
- *Modular Approach*
- *Partnerships*

IMPACT AND BENEFITS

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Manufacturers

- Improved Quality Control:
- Regulatory Compliance:
- Efficiency & Cost Reduction:
- Brand Trust and Reputation:

Consumers

- Increased Confidence in Product Safety
- Access to Information:
- Health Protection:
- Long-Term Impact:

Healthcare Providers (Pharmacies, Hospitals, Clinics)

- Enhanced Trust in Product Quality:
- Reduced Liability:
- Streamlined Procurement:

RESEARCH AND REFERENCES

- **Refrence:-**https://www.kaggle.com/datasets/prathamtripathi/drug-classification
- Research:-**Drug Classification Model:-**A model capable of predicting which drug is suitable for a patient based on their health parameters.

  Drug Recommendations System:-A prototype of a drug recommendation system that could be used by healthcare providers for personalized treatments.

- **Refrence:-**https://www.guidetopharmacology.org/download.jsp
- Research:- **Adverse Drug Reaction (ADR) Analysis**:- A tool that provides early warnings about the possibility of adverse drug reactions, ensuring safer medication use.

  Drug Information Integration:-An enriched database that gives users, including healthcare providers and consumers, more detailed and reliable information about the medicines being monitored on your platform.

- **Refrence:-**https://idrblab.net/ttd/full-data-download
- Research:- **Side Effect Prediction Based on Target Interactions:-** A predictive tool that warns users of possible side effects before they start a drug, helping to prevent adverse reactions.

- **Refrence:-**https://github.com/tesseract-ocr/tesseract?tab=readme-ov-file#installing-tesseract
- Research:-Information about the python library “tesseract”.