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MIT SCHOOL OF COMPUTING

Class : LYAIEC
Group Id: LYAIEC02

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

MedGuard AI

Agentic AI based Medicine Quality Check System

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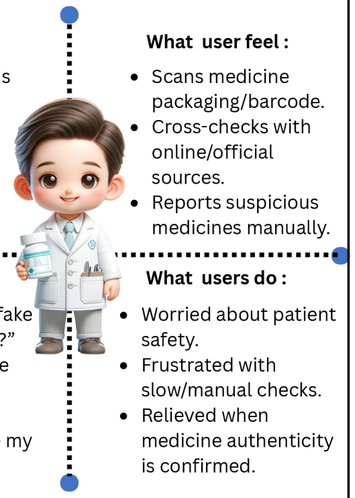
Empathy Map :



What users say :
- "I want to be sure this medicine is genuine.
- "It takes too long to verify medicines."
- "Counterfeit drugs are a big risk for patients."

What user feel :
- Scans medicine packaging/barcode.
- Cross-checks with online/official sources.
- Reports suspicious medicines manually.

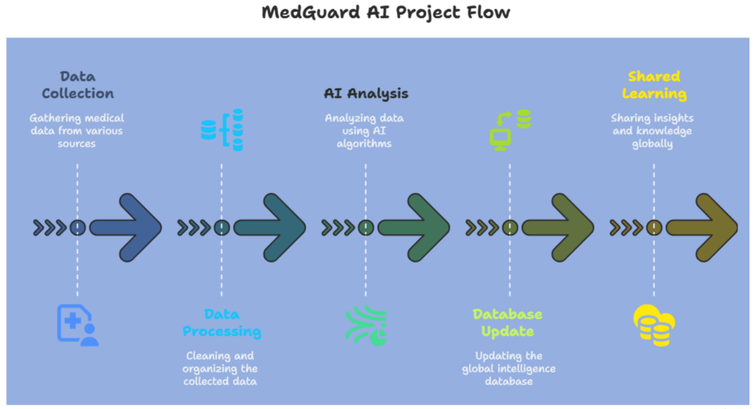
What users think :
- "What if this drug is fake and harms someone?"
- "I don't fully trust the supply chain."
- "A quick, reliable solution would make my work easier."

What users do :
- Worried about patient safety.
- Frustrated with slow/manual checks.
- Relieved when medicine authenticity is confirmed.

Requirement Vs Proposed Solution :

Sr. No.	Requirement	Proposed Solution
1.	Medicine Packaging & Content Verification • Image of medicine strip/box • Barcode/QR scan • Composition check	Use computer vision + OCR to scan packaging and text. Cross-check with drug regulatory databases to detect counterfeit or mismatched medicines.
2.	Authenticity & Quality Check • Cross-check expiry date • Verify manufacturer details • Detect fake batch numbers	Use an LLM-powered agent that automatically queries trusted sources (FDA, CDSCO, WHO databases). Flags low-quality or counterfeit drugs instantly.
3.	Autonomous Reporting Agent • Report suspicious medicines • Notify hospitals/authorities • Alert pharmacists/doctors	An agentic AI system auto-generates a compliance report and notifies stakeholders. It ensures faster reporting without manual intervention.
4.	User-Friendly Dashboard • Simple interface for hospitals & pharmacies • Instant verification results	Build a web/mobile dashboard showing: ✅ Verified ✅ Counterfeit ⚠️ Suspicious. Provides recommendations for safe alternatives.

Daigram :



Problem Statement :

Fake and low-quality medicines put patients' health at risk. Current checking methods are slow, manual, and not always correct. There is a need for a quick and reliable system to confirm if a medicine is real and safe. Such fake drugs can cause wrong treatment, serious side effects, or even death. Stopping them early is very important for public health.

Proposed Solution :

We propose an AI system that scans medicine details using images or QR codes. It checks the information with trusted drug databases and quickly shows if the medicine is genuine, fake, or doubtful. The system also alerts hospitals, pharmacies, and doctors about suspicious medicines. A dashboard will show verified and counterfeit results clearly. This makes it easy for healthcare workers to take safe and fast decisions.

Scope And Feasibility :

This system can be used in hospitals, pharmacies, and by patients. It is affordable, easy to scale, and works with existing technology like AI, QR scanning, and databases. This makes it a practical solution to improve medicine safety everywhere. It can help government agencies track counterfeit drugs. In the future, it can expand to global drug monitoring and support rural healthcare centers. With more data, the system will become smarter and more accurate over time.