Mechanism to save Medicine from getting wasted

Batch Number:G-41

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Introduction

1. This project focuses on an AI-based solution to optimize medicine inventory management in hospitals. By analyzing past medicine usage and wastage data, it aims to prevent wastage and improve stock distribution.

2. The proposed mechanism incorporates predictive analytics to forecast medicine requirements for individual patients and hospital stock levels. By correlating data on past prescriptions, patient demographics, treatment history, and medicine wastage, the system identifies optimal quantities of medicines to be distributed.

Github Link

The Github link provided should have public access permission.

https://github.com/saikrupa1234/Mechanism-to-save-medicine-without-wasting/blob/eda9692f3b5fbc574d10a87b62b666d211525882/Mechanism_to_save_medicine_without_wasting.py

Proposed Method

An AI-powered system that uses historical data to predict medicine demand and manage inventory effectively, minimizing wastage.

Architecture

The architecture consists of three layers

1.Input Layer

- Collects data from hospital databases, including patient records, historical inventory data, and real-time stock levels.
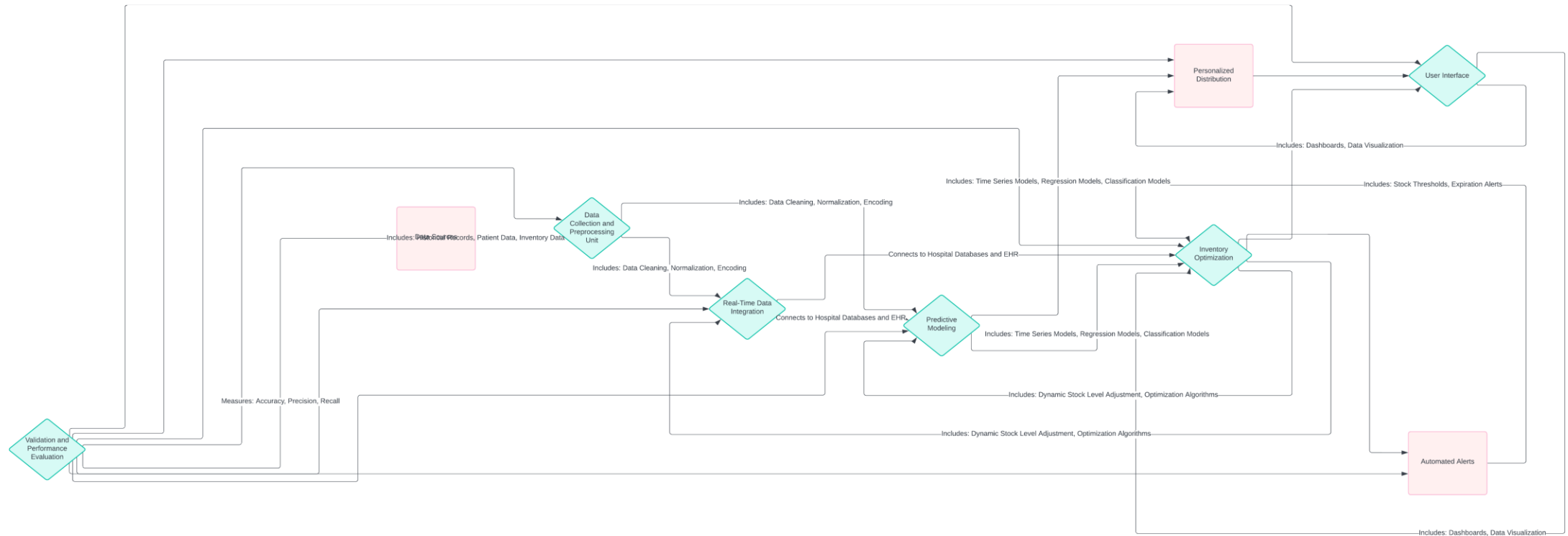
2.Processing Layer

- Applies machine learning models for demand forecasting and wastage analysis.

3.Output Layer

- Provides actionable insights through dashboards and automated alerts.

Architecture(contd...)

Problem Statement

Traditional approaches to medicine inventory management fail to address wastage comprehensively. Hospitals often rely on manual processes or generic inventory tools that do not account for patient-specific needs or consumption patterns. As a result:

- Medicines expire in storage due to overstocking.

- Patients receive unnecessary or excessive medications, contributing to personal-level wastage.

- Hospitals lack real-time insights into inventory levels, leading to stockouts of essential medicines.

Timeline of the Project (Gantt Chart)

TASK ID	TASK NAME	START DATE	END DATE
1	Review-0 Title finalization	4-sep-2024	6-sep-2024
2	Review-1 Literature survey and report	24-sep-2024	27-sep-2024
3	Review-2 50% implementation and source code details	15-oct-2024	21-oct-2024
4	Review-3 Full project live demonstration	17-dec-2024	21-dec-2024

References (IEEE Paper format)

- Predictive Analytics in Healthcare
- URL:https://www.healthcareitnews.com/news/how-predictive-analytics-improving-hospitals
- machine Learning Models for Demand Forecasting
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- URL:https://corporatefinanceinstitute.com/resources/operations/economic-order-quantity-eoq/
- Real-time Data Integration Using Apache Kafka
- URL:https://kafka.apache.org/documentation/
- Implementing Role-Based Access Control (RBAC)
- URL:https://auth0.com/docs/authorization/rbac/