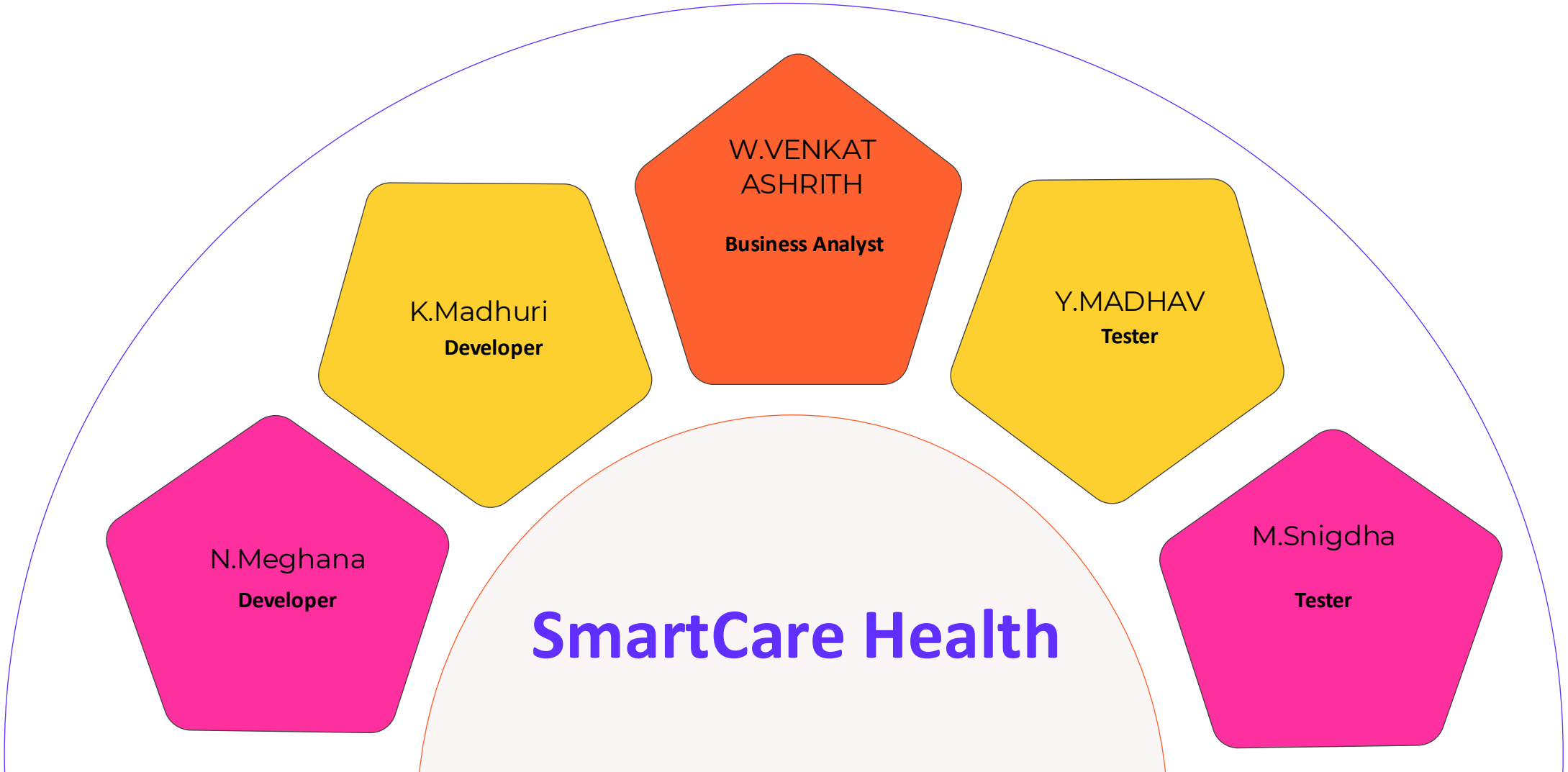
ValueHealth
Accelerate patient health outcomes

Proactive AI Patient Engagement for Chronic Diseases

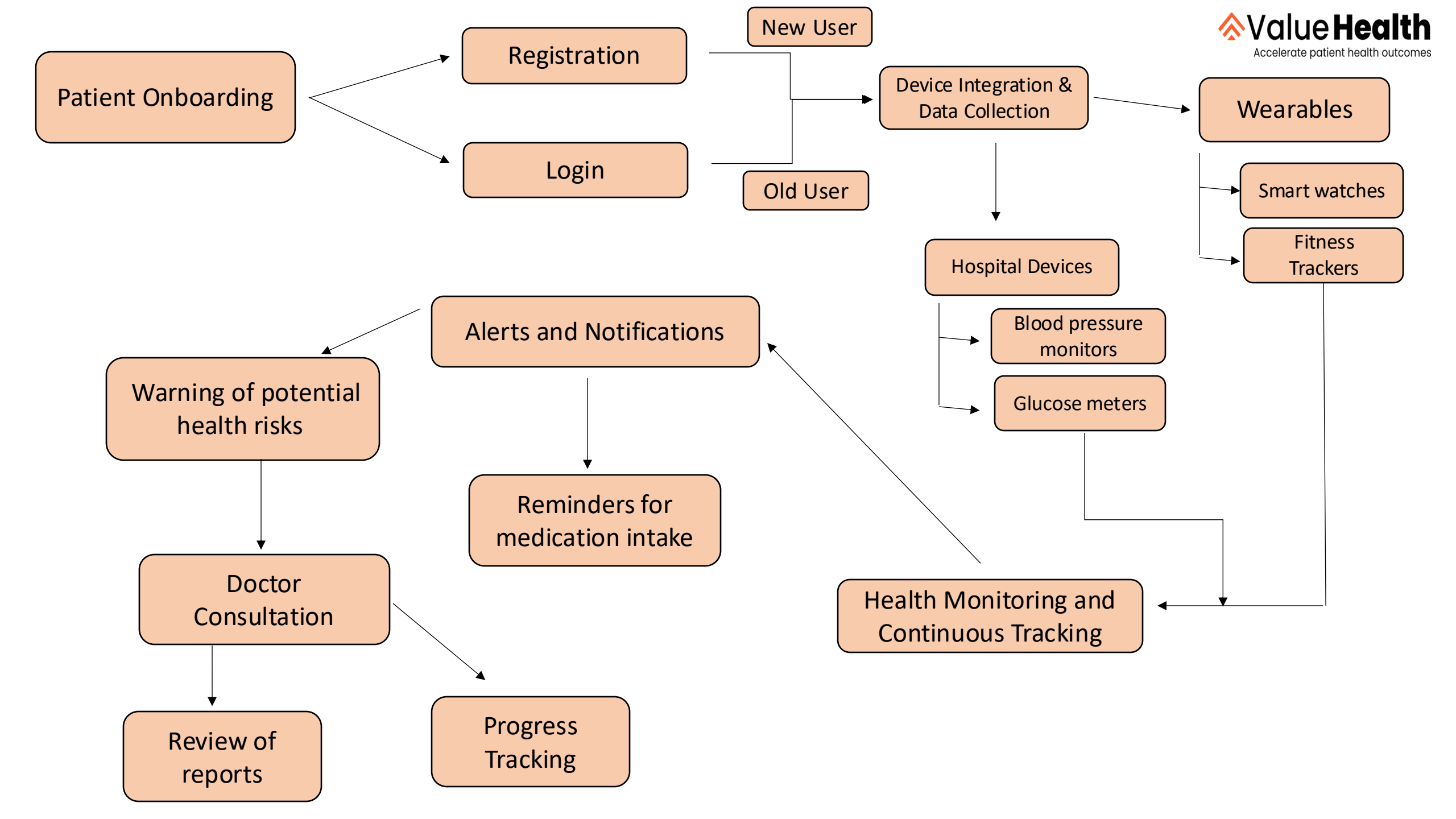
Team Members and Role

ValueHealth
Accelerate patient health outcomes



ValueHealth
Accelerate patient health outcomes

Workflow of user journey in the solution


ValueHealth
Accelerate patient health outcomes
Patient Onboarding
Registration
Login
New User
Old User
Device Integration & Data Collection
Wearables
Smart watches
Fitness Trackers
Hospital Devices
Blood pressure monitors
Glucose meters
Alerts and Notifications
Warning of potential health risks
Reminders for medication intake
Doctor Consultation
Review of reports
Progress Tracking
Health Monitoring and Continuous Tracking

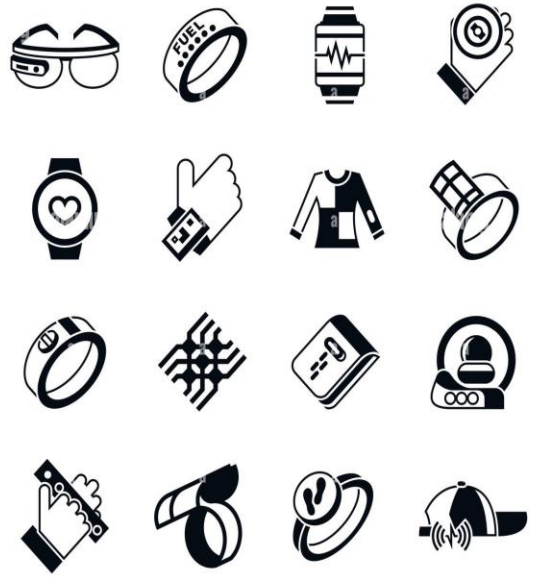
Sources of Data

ValueHealth
Accelerate patient health outcomes

Wearables Data:

Dataset Link: https://www.kaggle.com/datasets/arashnic/fitbit?resource=download

The dataset consists of minute-level data on physical activity, heart rate, and sleep patterns from Fitbit users. It is organized by export session ID and timestamp, allowing for detailed time-based tracking. The variation in data arises from different Fitbit tracker models and users' personal tracking behaviors/preferences. Key features include data on steps, calories burned, heart rate measurements, and sleep stages like light and deep sleep. This dataset offers valuable insights into individual wellness patterns and can be used to build predictive models for activity, heart rate trends, and sleep quality.



Electronic Health Record Data(EHR):

ValueHealth
Accelerate patient health outcomes

Dataset Link: https://data.world/datasets/ehr

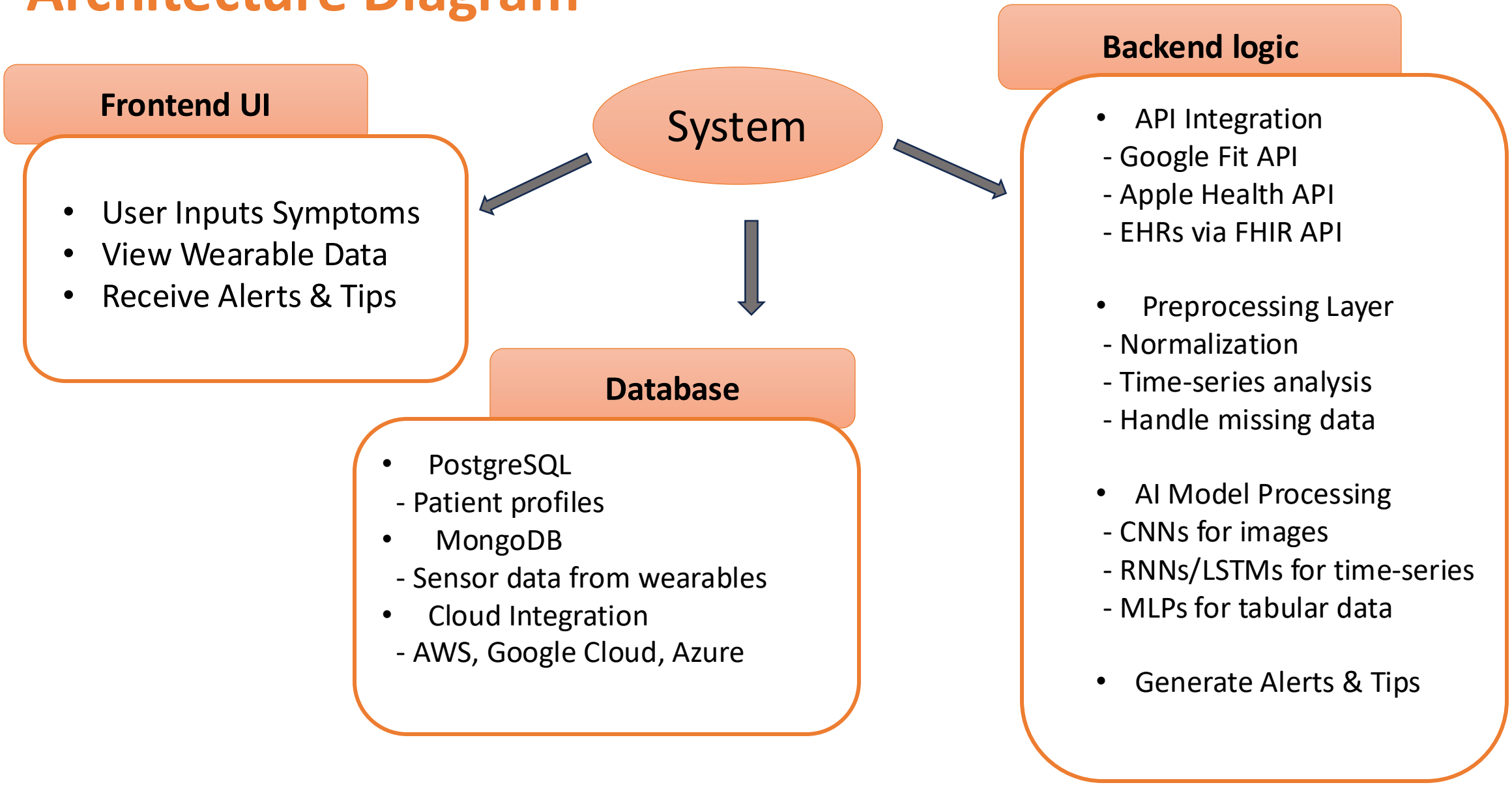
The electronic prescribing (eRx) dataset contains important information about eRx activity and health information exchange. It includes the state and year of data collection, covering the period from 2008 to 2014. Key details consist of the total number of electronic prescriptions routed through the Surescripts network, as well as counts for new and renewal prescriptions. The dataset shows the percentage of eRx adoption, which indicates how many prescriptions were sent electronically compared to all prescriptions. It also classifies pharmacies as chain, franchise, or independent and provides data on health information exchange among providers. This dataset helps analyze trends in electronic prescribing across different states and pharmacy types.

Medical Image Data (if required for EHR analysis):

Dataset Link: https://www.kaggle.com/datasets/fanbyprinciple/luna-lung-cancer-dataset

ValueHealth
Accelerate patient health outcomes

Architecture Diagram



The personas involved in the AI-based chronic disease management system, along with their roles and benefits:

ValueHealth
Accelerate patient health outcomes

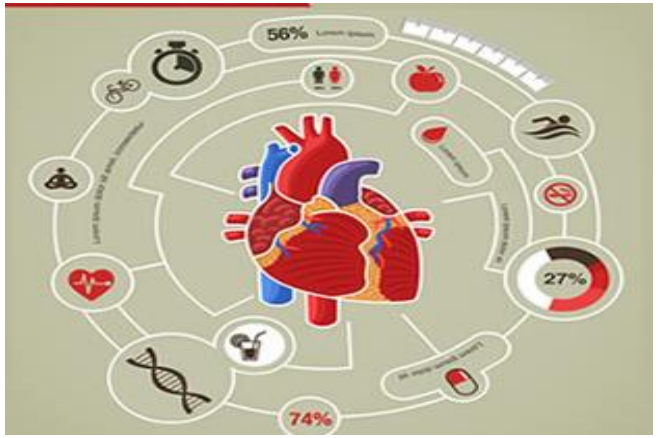
Patients (Chronic Disease Sufferers):

Role:

Primary beneficiaries who receive continuous health monitoring and personalized care advice.

Benefits:

- Real-time monitoring of vital signs (e.g., glucose, blood pressure).
- Personalized health tips, proactive alerts for emergencies.
- Self-management education, reduced emergency visits, and progress tracking.
- Convenient access to health data via mobile apps.



Healthcare Providers (Doctors, Nurses, Caregivers):

Role:

Manage and monitor patient care using AI-driven insights for timely interventions.

Benefits:

- Remote patient monitoring and early intervention.
- Personalized treatment plans based on continuous health data.
- Streamlined workflow, reduced hospital readmissions, and improved outcomes.
- Data-driven decision-making with real-time insights.

ValueHealth
Accelerate patient health outcomes

Hospital Administrators:

Role:

Manage hospital resources, costs, and operations, ensuring efficient care delivery.

Benefits:

- Optimized resource allocation and reduced emergency admissions.
- Cost savings and improved patient outcomes.
- Better compliance tracking and regulatory reporting.
- Enhanced patient satisfaction through proactive care.

Caregivers and Family Members:

Role:

Support patients by staying informed about their health status and providing care when needed.

Benefits:

- Real-time notifications on patient health.
- Peace of mind with continuous updates and alerts.
- Improved coordination with healthcare providers.
- Education and tips for assisting in care at home.

ValueHealth
Accelerate patient health outcomes

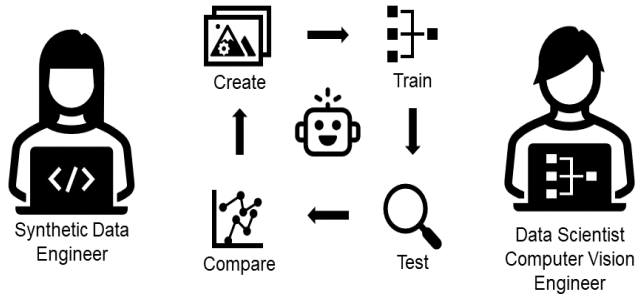
Data Scientists and AI Engineers:

Role:

Develop, train, and maintain AI models that enable personalized and predictive healthcare.

Benefits:

- Access to rich health data for AI development.
- Work on advanced AI techniques in healthcare.
- Contribution to healthcare innovations.
- Professional growth through high-impact healthcare projects.



Regulatory Authorities (Health Departments, Compliance Officers):

Role:

Ensure compliance with healthcare regulations, such as patient privacy and care standards.

Benefits:

- Monitor hospital adherence to healthcare regulations.
- Access to data-driven insights for policymaking.
- Efficient reporting and tracking of chronic disease management protocols.

ValueHealth
Accelerate patient health outcomes

Insurance Companies:

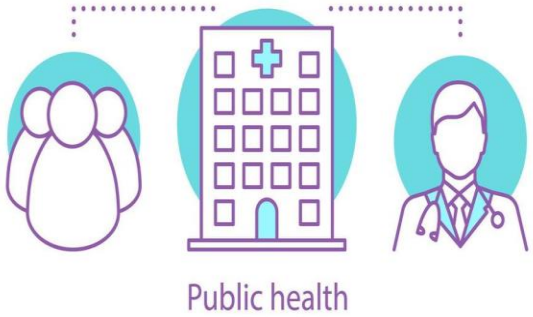
Role:

Provide coverage for healthcare expenses and reduce costs associated with chronic disease management.

Benefits:

- Reduced claims for emergency care and hospitalizations.
- Use AI models to assess patient risk and tailor insurance plans.
- Incentives for patients to engage in preventive care.
- Data for improving actuarial models and policy pricing.

INSURANCE COMPANY



Public Health Organizations and Researchers:

Role:

Analyze health data trends and formulate public health policies for managing chronic diseases.

Benefits:

- Access to anonymized population health data.
- Real-time insights for tracking and managing chronic diseases.
- Data for long-term research and policy formulation.
- Improved understanding of public health trends for effective intervention.