Requirements Gathering

2. User Stories & Use Cases

User Story 1:

- Title: Analyze Health Patterns
- Description: As a healthcare analyst, I want to analyze patient data to identify patterns in blood pressure and cholesterol levels, so that I can provide insights for preventive healthcare measures.
- Acceptance Criteria:
  - The system should allow data upload.
  - The system should generate reports on health patterns.

Use Case 1:

- Title: Generate Health Report
- Actors: Healthcare Analyst
- Preconditions: The user has access to the system and a dataset is available.
- Main Flow:

1. The user logs into the system.
2. The user uploads the patient dataset.
3. The system processes the data.
4. The system generates a report on health patterns.
5. The user reviews the report.

- Postconditions: The report is saved and available for future reference.

User Story 2

- Title: Monitor Patient Risk Factors
- Description: As a healthcare analyst, I want to monitor patient risk factors such as high blood pressure and elevated cholesterol levels, so that I can identify patients who may require immediate medical attention.
- Acceptance Criteria:
  - The system should allow filtering of patients based on specific risk factors.
  - The system should generate alerts for patients with critical health indicators.
  - The system should provide a summary of patients at risk.

Use Case 2

- Title: Identify At-Risk Patients
- Actors: Healthcare Analyst
- Preconditions: The user has access to the system and a dataset is available.
- Main Flow:

1. The user logs into the system.
2. The user uploads the patient dataset.
3. The user sets criteria for risk factors (e.g., systolic blood pressure > 140, cholesterol level > 2).
4. The system filters the dataset based on the specified criteria.
5. The system generates a list of patients who meet the risk criteria.
6. The system sends alerts for patients with critical health indicators.
7. The user reviews the list of at-risk patients and alerts.

- Postconditions: The list of at-risk patients and alerts are saved and available for future reference.

3. Functional Requirements

- Data Upload: The system should allow users to upload datasets in CSV format.
- Data Processing: The system should process the dataset to calculate averages, medians, and other statistical measures.
- Report Generation: The system should generate reports that include visualizations such as charts and graphs.
- Data Filtering: The system should allow users to filter data based on criteria like age, gender, and smoking status.

6. Non-functional Requirements

- Performance: The system should process datasets of up to 100,000 records within 5 minutes.
- Security: The system should encrypt data during transmission and storage to ensure privacy.
- Usability: The system should have an intuitive user interface with clear navigation and help documentation.
- Reliability: The system should have an uptime of 99.9% and provide error handling for data upload issues.

7. Constraints

- The system must comply with healthcare data regulations such as HIPAA.
- The system should be accessible via standard web browsers.