



B V RAJU INSTITUTE OF TECHNOLOGY

(UGC Autonomous)

Vishnupur, Narsapur, Medak District

Department of Computer Science and Engineering

Mini Project – First Review (2022 Batch)

Title : "INTELLIGENT EYE HEALTH MONITORING SYSTEM USING AI DRIVEN COMPUTER VISION"

By: 22211A05F1- KOLLI MANISH

Guided By: Mrs.Geetha Reddy



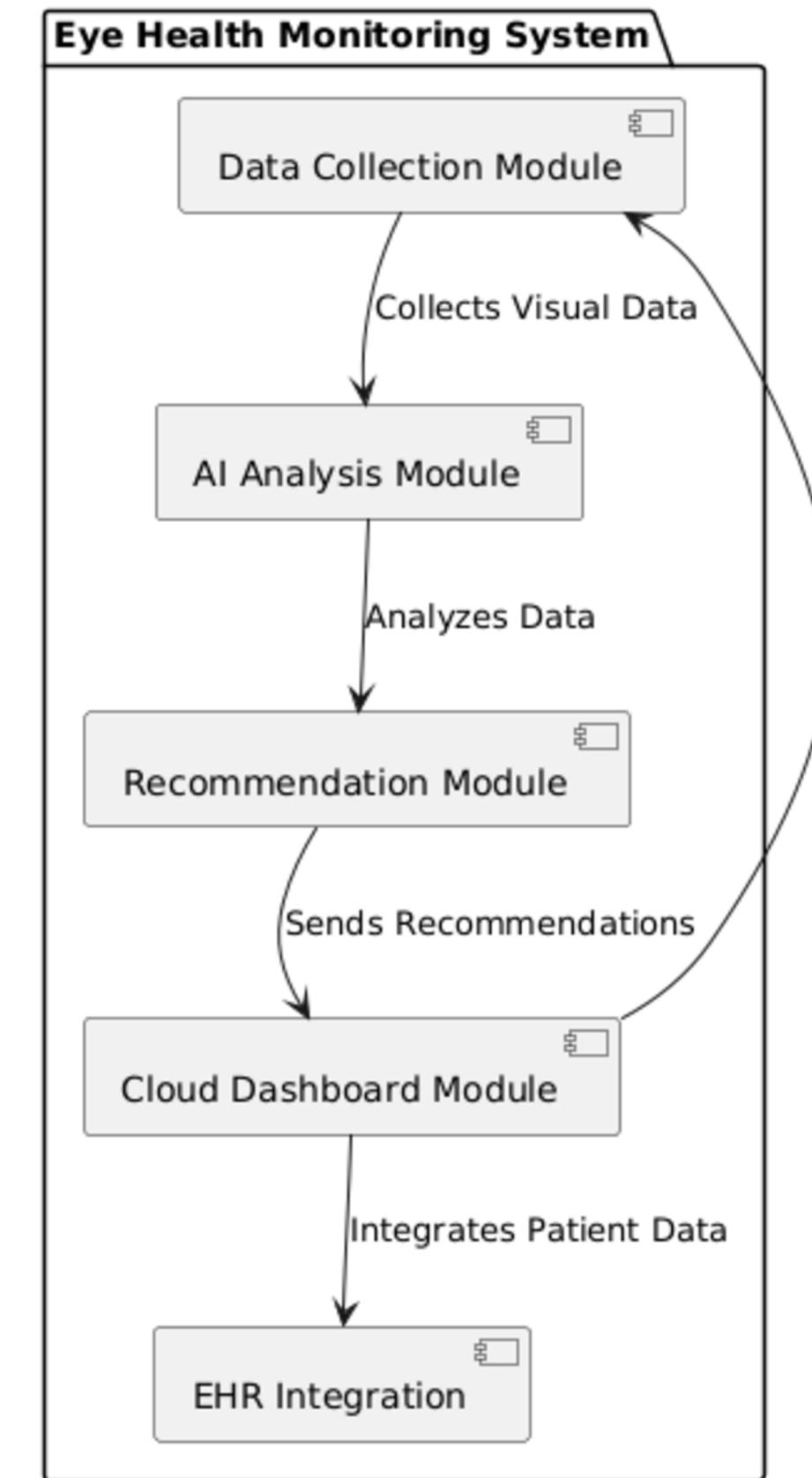
- Overview of 0th Review
- Recommendations & Suggestions by panel member in 0th Review.
- Proposed System Architecture diagram
- Proposed Flow diagram (Flow Chart, which you kept in the proposal document)
- Proposed Data Flow diagram
- Proposed List of Modules
- Proposed Algorithm Working Steps.
- UML Diagrams (Use Case, Class Diagram, Sequence Diagram, Activity Diagram)
- Expected Results in the Proposed Model.

Overview of 0th Review (Max 5 Points)

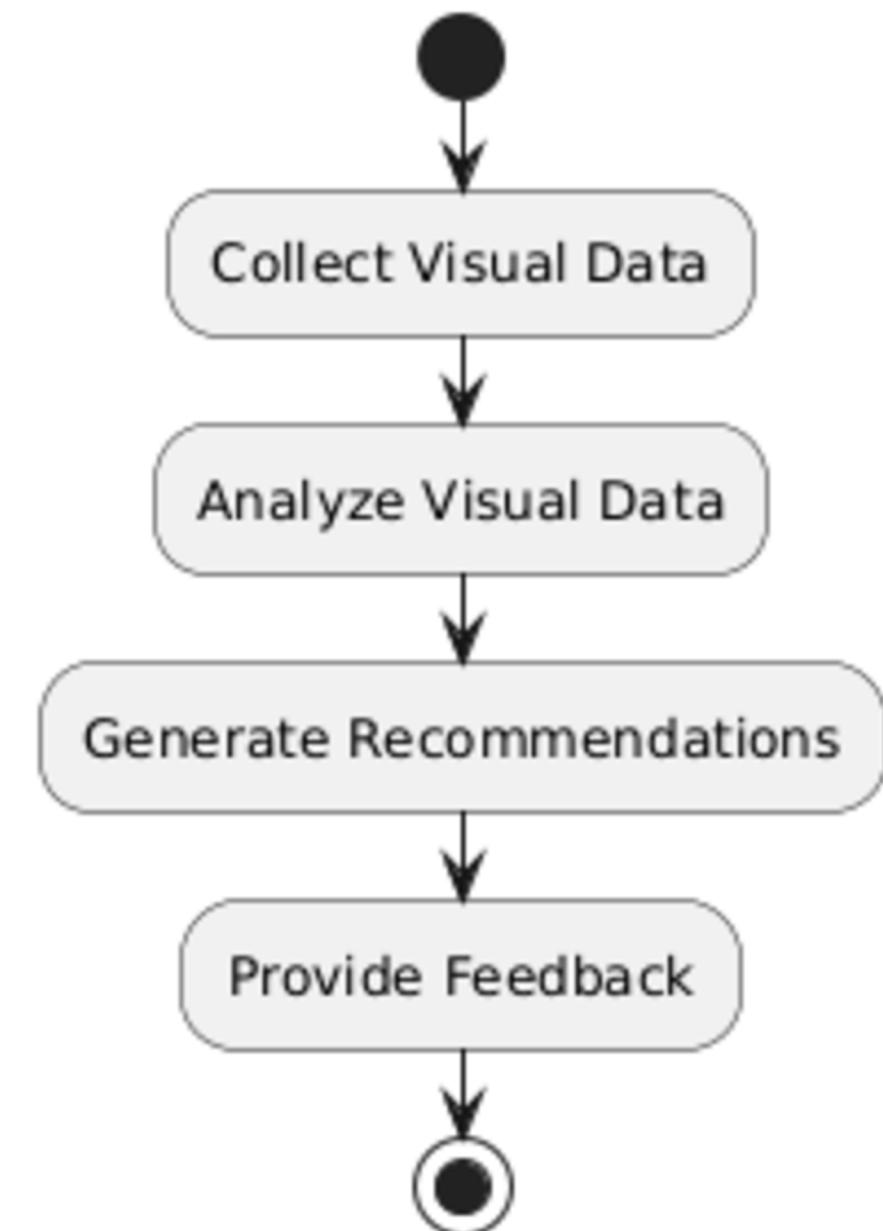
- The AI-based eye health monitoring system utilizes mobile apps, wearable devices, and computer vision software to capture visual data for precise eye health evaluation.
- Using advanced image processing techniques, it uses machine learning algorithms to analyze the data collected to detect potential health issues in the eye.
- The system uses this analysis to provide personalized mobile recommendations with real-time feedback and alerts to improve patient engagement.
- The system securely stores patient data on a cloud-based platform, where it can easily integrate and interoperate with electronic health records (EHRs) to provide more holistic health care.
- By leveraging these new technologies, teleophthalmology allows eye care providers to reach more patients than ever – and provides the means for patients to access even better and more holistic eye health.

S.NO	Recommendations & Suggestions given by panel	Changes made by member as per suggestions
	Implement robust data privacy measures to protect patient information.	Changes were made
	Regularly update machine learning models for improved accuracy	Changes were made
	Incorporate patient feedback mechanisms to enhance system features.	Changes were made
	Ensure user-friendly interfaces for mobile app	Changes were made

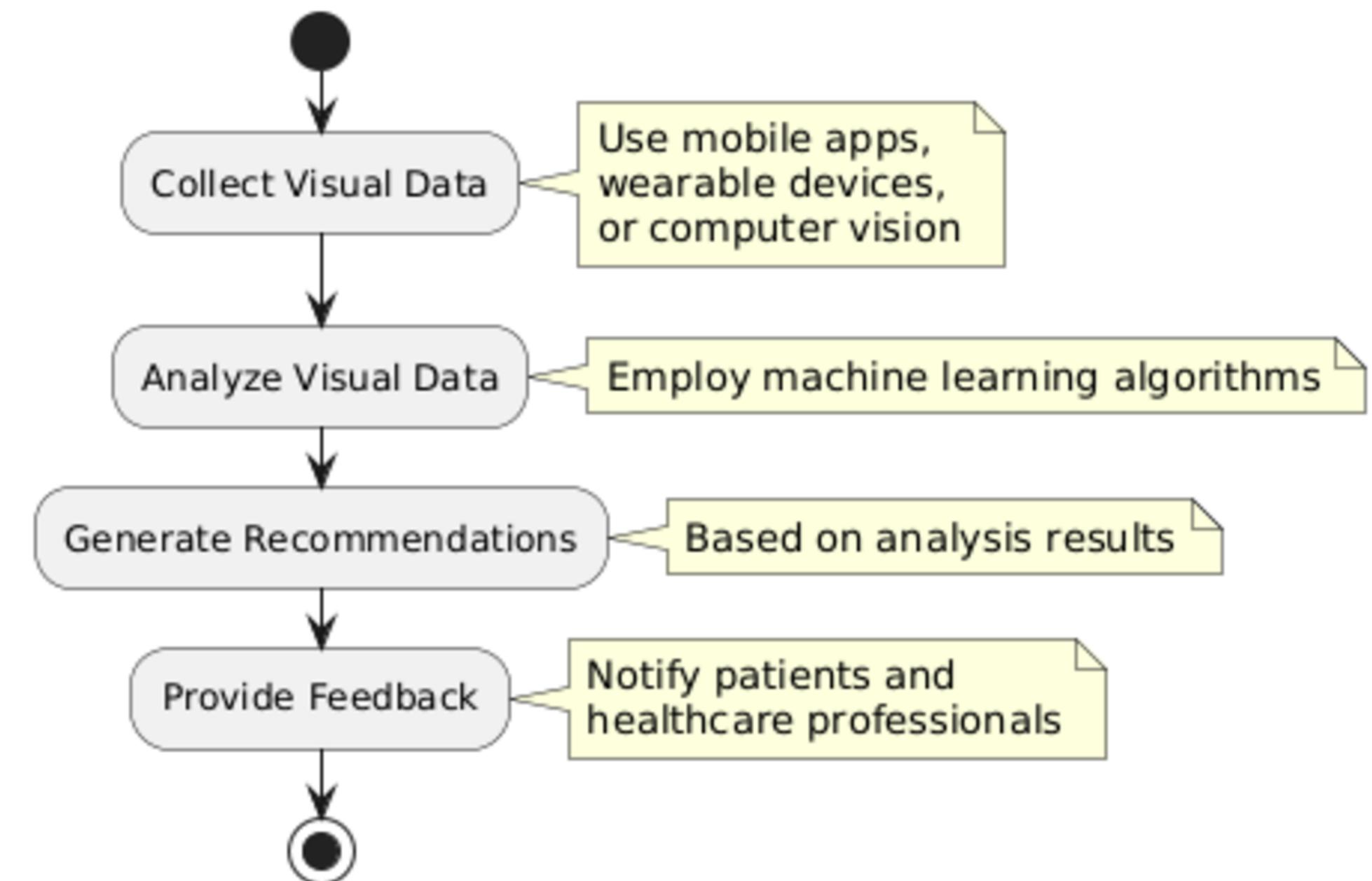
Proposed Architecture diagram



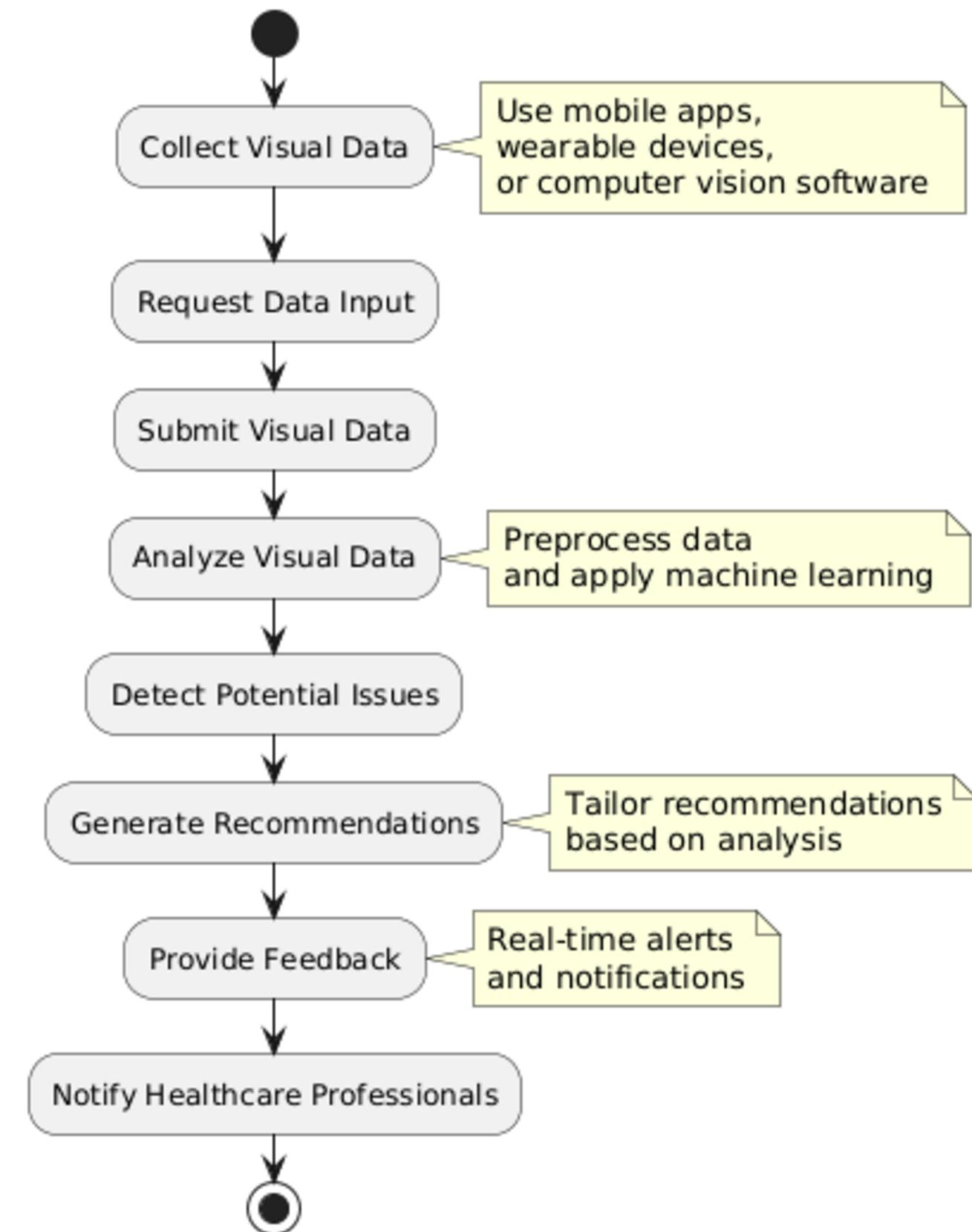
Proposed Flow diagram (Level 0)



Proposed Flow diagram (Level 1)



Proposed Flow diagram (Level 2)



- User Authentication Module
- Visual Data Collection Module
- AI Analysis Module
- Complaint Statistics Module
- Cloud Data Management Module:

1. User Authentication Module:

Algorithm: OAuth 2.0 or JWT

Explanation: Securely manages user access through protocols that allow login via existing accounts and transmit user information securely.

2. Visual Data Collection Module:

Algorithm: Image Acquisition and Preprocessing

Explanation: Utilizes techniques for capturing and enhancing image quality, such as normalization and noise reduction, to prepare retinal scans for analysis.

3. AI Analysis Module:

Algorithm: Convolutional Neural Networks (CNNs)

Explanation: Analyzes visual data by extracting features through multiple layers, using transfer learning for improved accuracy in detecting eye health issues.

4. Recommendation and Monitoring Module:

Algorithm: Rule-Based Systems and Machine Learning

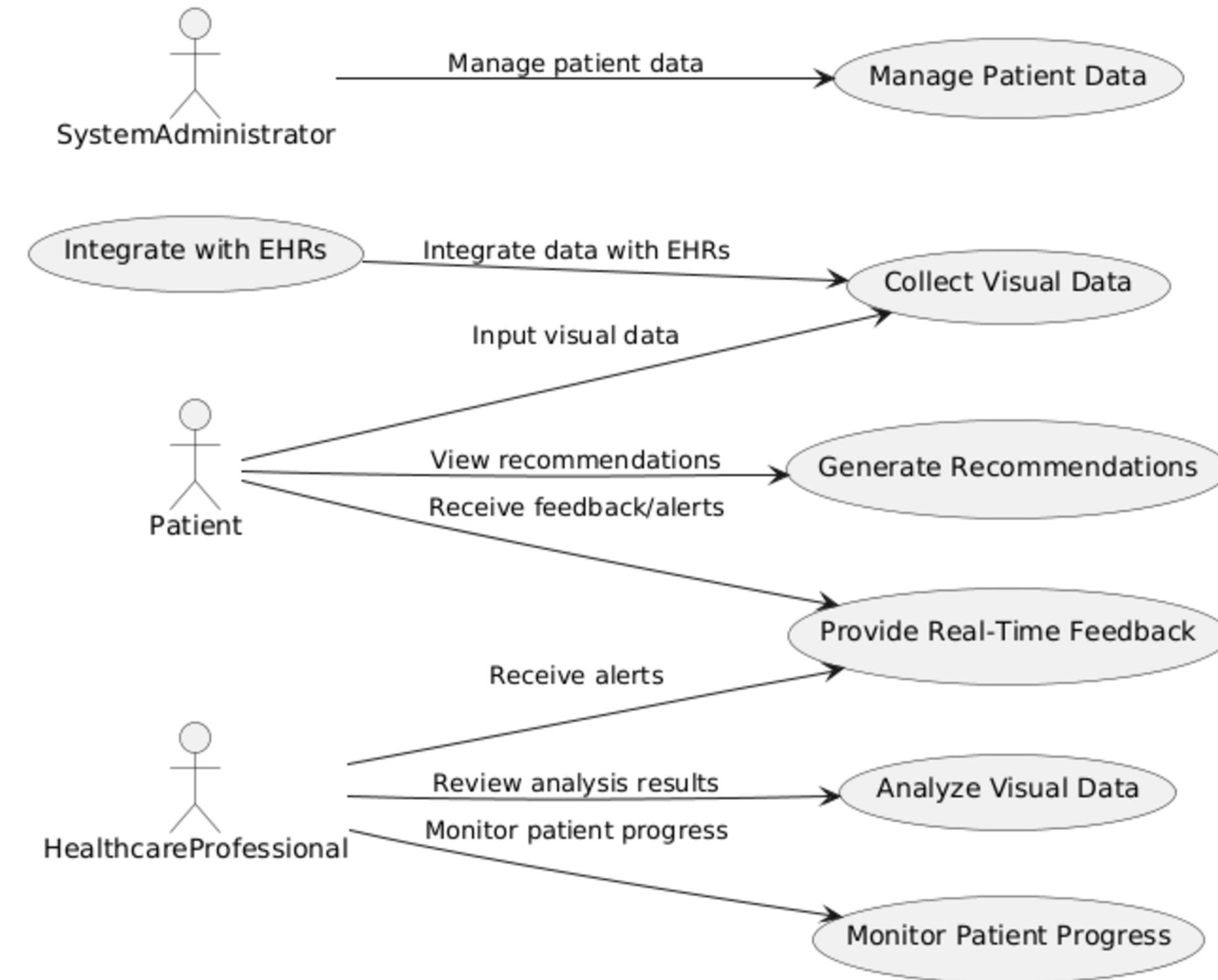
Explanation: Generates personalized recommendations based on analysis results and adapts over time using user feedback and behavior.

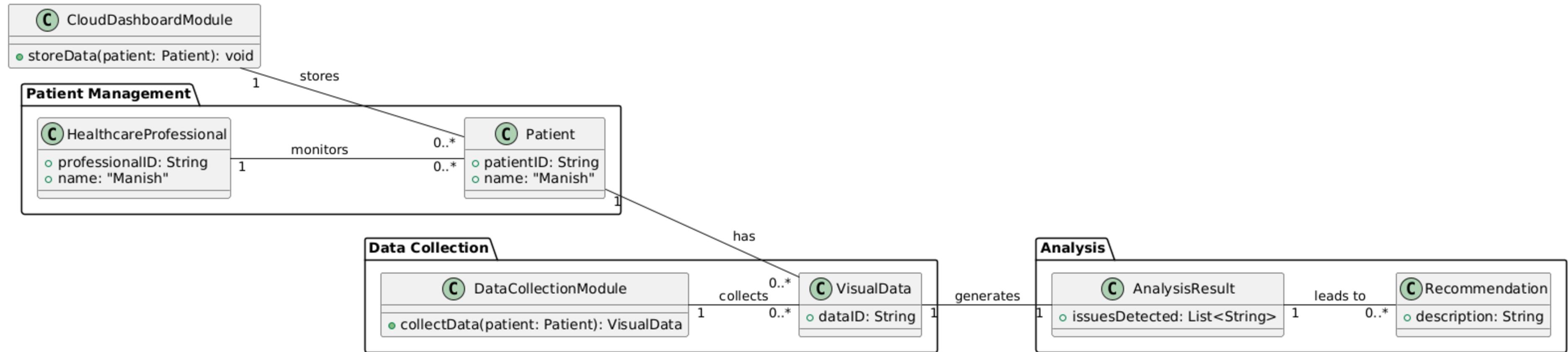
5. Cloud Data Management Module:

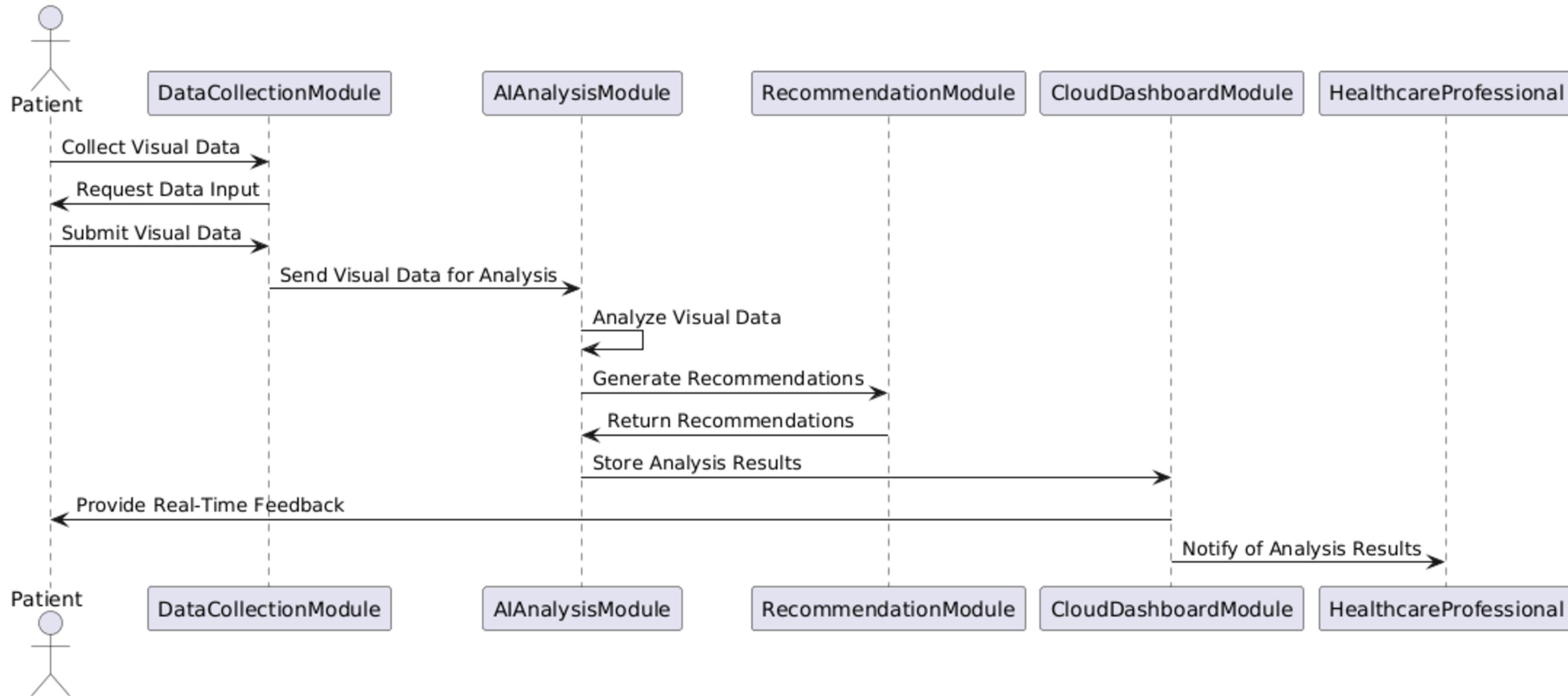
Algorithm: Secure Storage and Retrieval Protocols

Explanation: Employs encryption for secure data storage and APIs for seamless integration with electronic health records (EHRs).

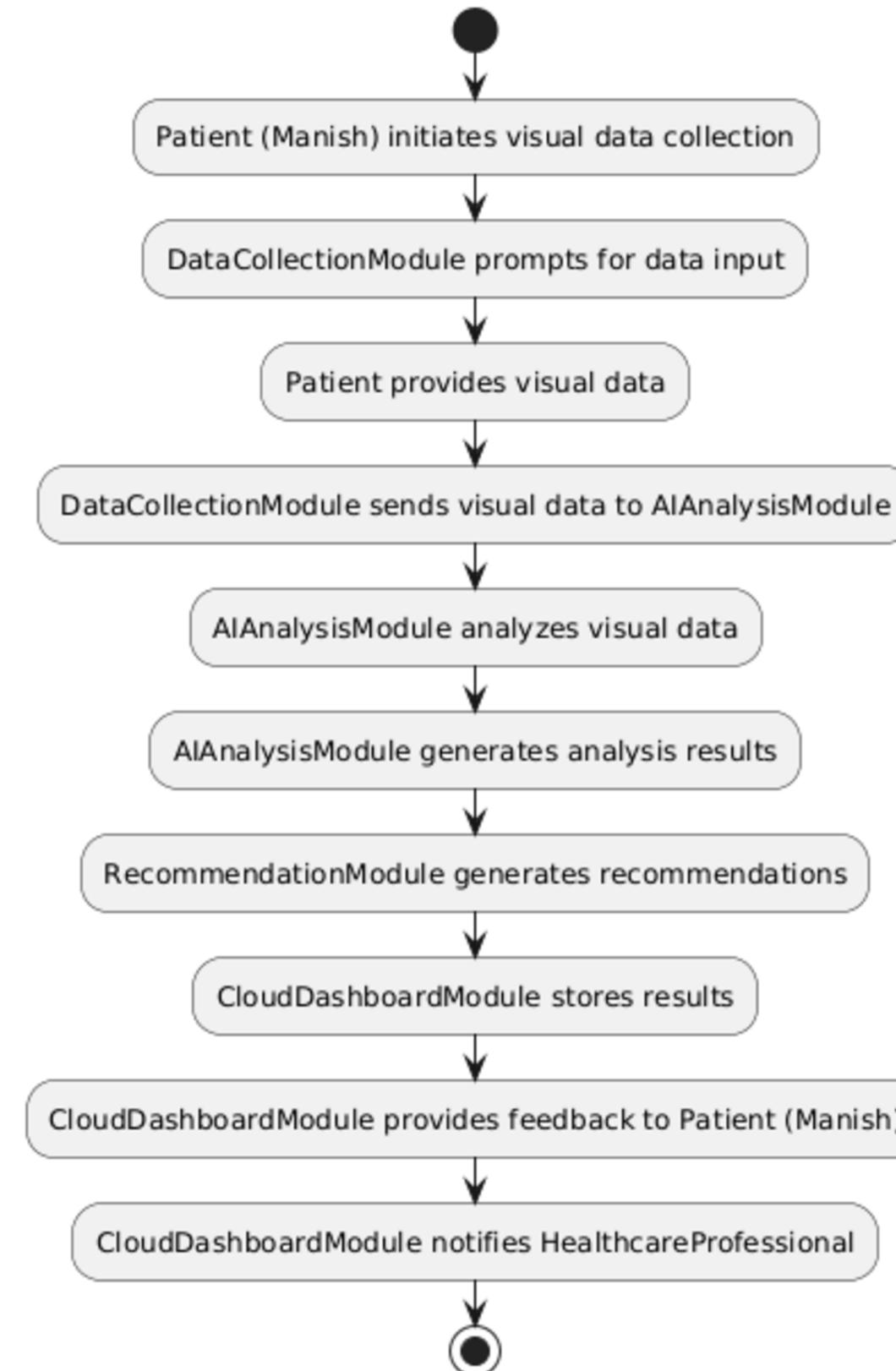
UML Diagram- Use Case







UML Diagram- Activity Diagram



- Better results regarding patients' eyes due to efforts taken at an initial stage problem arises and taking the necessary action within a required deadline.
- Higher involvement from the patients through individualized suggestions and feedbacks.
- Access to collected info provides possibility of making good decisions that lead to the advancement of health service
- Greater availability of eye care activities for patients in remote regions.
- Seamless integration of available electronic health records promotes continuum in care.

Thank You