***What is a Use Case:***

- A Use case specify the expected behavior (what) of a software, and not the exact method of making it happen (how).

- A key concept of use case modeling is that it helps us design a system from the end user's perspective. It is an effective technique for communicating system behavior in the user's terms by specifying all externally visible system behavior.

**Use Case 1:**

**Name:** Register Account

**Brief Description:** Allow the user to create an account in the system to begin the First-Aid and Emergency Response Test.

**Triggers:** When a user select “Register” option from the home screen.

**Pre-condition(s):** The User does not already have an account

**Use Case Description:**

1-User selects “Register”

2-System asks for “Name”, “Email” and “Password”

3-User Submits the required information

4-System validates the inputs

5-System creates an account and confirm registration

**Post-condition(s):** The new User is created and saved in the database.

**Inputs:** Name, Email, Password

**Outputs:** Confirmation Message and redirection to the login page.

**AI Implementation:**

• AI-based anomaly detection could be used to detect suspicious login attempts (e.g., logins from unusual locations or bots).

**Use Case 2:**

**Name:** Log In

**Brief Description:** Allow the user to log in with an existing account.

**Triggers:** When a user select “Login” option from the home screen.

**Pre-condition(s):** The User has an existing account

**Use Case Description:**

1-User selects “Login”

2-System asks for “Email” and “Password”

3-User Submits the required information

4-System checks credentials

5-If valid, user is redirected to dashboard

6-If invalid, error message is shown

**Post-condition(s):** User is authenticated and redirected to their dashboard.

**Inputs:** Email, Password

**Outputs:** Access to user dashboard or error message

**AI Implementation:**

• AI-based anomaly detection could be used to detect suspicious login attempts (e.g., logins from unusual locations or bots).

**Use Case 3:**

**Name:** Take Emergency Simulation Quiz

**Brief Description:** User takes an AI-powered emergency response quiz with real-time feedback.

**Triggers:** User selects a quiz topic and starts the simulation

**Pre-condition(s):** The User must be logged in

**Use Case Description:**

1-User selects a quiz topic

2-AI presents scenario-based questions dynamically

3-User submits answers

4-AI evaluates answers and gives real-time feedback

5-Score is stored and progress is updated

**Post-condition(s):** Quiz is completed, and score is saved in the user’s history.

**Inputs:** Selected topic, user answers

**Outputs:** Feedback, score, progress saved

**AI Implementation:**

• AI generates quiz scenarios dynamically based on topic and user skill level.

• AI analyzes user responses and provides real-time adaptive feedback

**Use Case 4:**

**Name:** Earn Achievement Badge

**Brief Description:** Users are rewarded with badges for completing quizzes and achieving learning goals.

**Trigger:** User completes a quiz and meets badge criteria

**Pre-Condition(s):** Completion of module or challenge

**Use Case Description:**

1. System checks user’s activity and scores
2. If criteria are met, badge is awarded
3. Notification and badge appear in user profile

**Post-Condition(s):** Badge is added to the user’s profile

**Inputs:** Quiz scores, completion status

**Outputs:** Badge earned, motivational message

**AI Implementation:**

* AI tracks user engagement and performance to suggest personalized achievements.
* AI could also trigger surprise rewards based on effort trends

**Use Case 5:**

**Name:** View Earned Badges

**Brief Description:** Displays user’s performance data and badges.

**Trigger:** User selects “My Badges”

**Pre-Condition(s):** User must have activity data

**Use Case Description:**

1. User accesses profile
2. System fetches learning records
3. AI highlights trends (strengths, weaknesses)
4. System suggests next steps

**Post-Condition(s):** Badges dashboard is displayed

**Inputs:** User ID

**Outputs:** Visual progress chart, next recommended action

**AI Implementation:**

* AI analyzes performance trends to generate visual analytics
* AI recommends content to revisit and areas needing improvement
* AI may compare user progress with peers anonymously to motivate improvement

**Use Case 6:**

**Name:** Get Personalized Training Path

**Brief Description:** AI recommends a custom sequence of training modules based on user performance.

**Trigger:** User requests a personalized path

**Pre-Condition(s):** User has completed some modules

**Use Case Description:**

1. User clicks on “Get Recommendations”
2. AI analyzes user scores and behavior
3. AI generates a training roadmap (with optional milestones)
4. User accepts or modifies the plan

**Post-Condition(s):** Custom training roadmap is shown in the user dashboard

**Inputs:** User scores, quiz history, time on modules

**Outputs:** Visual learning path, progress bar

**AI Implementation:**

* Machine learning models analyze user behavior and difficulty history
* Recommender system suggests the next best modules
* The path can adapt over time as the user improves