

### **Requirement 15**

- **Description:** The system shall provide a POST /event/entry endpoint that records a new ENTRY event in Firebase.
- **Acceptance Criteria:**
  - Sending a valid POST request creates a new ENTRY document
  - Document includes eventType, lotId, timestamp, and eventId
  - Invalid requests are rejected

### **Requirement 16**

- **Description:** The system shall provide a POST /event/exit endpoint that records a new EXIT event in Firebase.
- **Acceptance Criteria:**
  - Sending a valid POST request creates a new EXIT document
  - Document includes eventType, lotId, timestamp, and eventId
  - Invalid requests are rejected

### **Requirement 17**

- **Description:** All entry and exit detections shall be stored as append-only event documents. Previously written events must never be updated or deleted.
- **Acceptance Criteria:**
  - Each request creates a new document
  - Existing documents are never modified

### **Requirement 18**

- **Description:** Each event record shall contain a unique ID, timestamp, and eventType.
- **Acceptance Criteria:**
  - All event documents include eventId
  - All event documents include timestamp
  - eventType is ENTRY or EXIT

### **Requirement 19**

- **Description:** The system shall update garage occupancy based on entry and exit events received through HTTP endpoints.
- **Acceptance Criteria:**
  - ENTRY increments occupancy
  - EXIT decrements occupancy
  - Occupancy value is stored in Firebase

### **Requirement 20.1**

- **Description:** The chatbot shall interpret natural-language parking questions and return real-time parking availability.
- **Acceptance Criteria:**
  - User can type a parking question
  - Chatbot returns lot availability
  - Data matches Firebase values

## **Requirement 28**

- **Description:** The system shall show a loading indicator while parking data is being fetched.
- **Acceptance Criteria:**
  - Loading indicator appears during fetch
  - Loading indicator disappears after data loads

## **Requirement 31**

- **Description:** The system shall provide an improved dark mode for better readability.
- **Acceptance Criteria:**
  - User can toggle dark mode
  - Text remains readable
  - Colors have sufficient contrast

## **Requirement 32**

- **Description:** The website shall adapt to different screen sizes.
- **Acceptance Criteria:**
  - Works on mobile and desktop
  - No broken layout
  - Content remains usable