

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