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# LOST & FOUND APPLICATION

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# INTRODUCTION

People lose valuable items daily

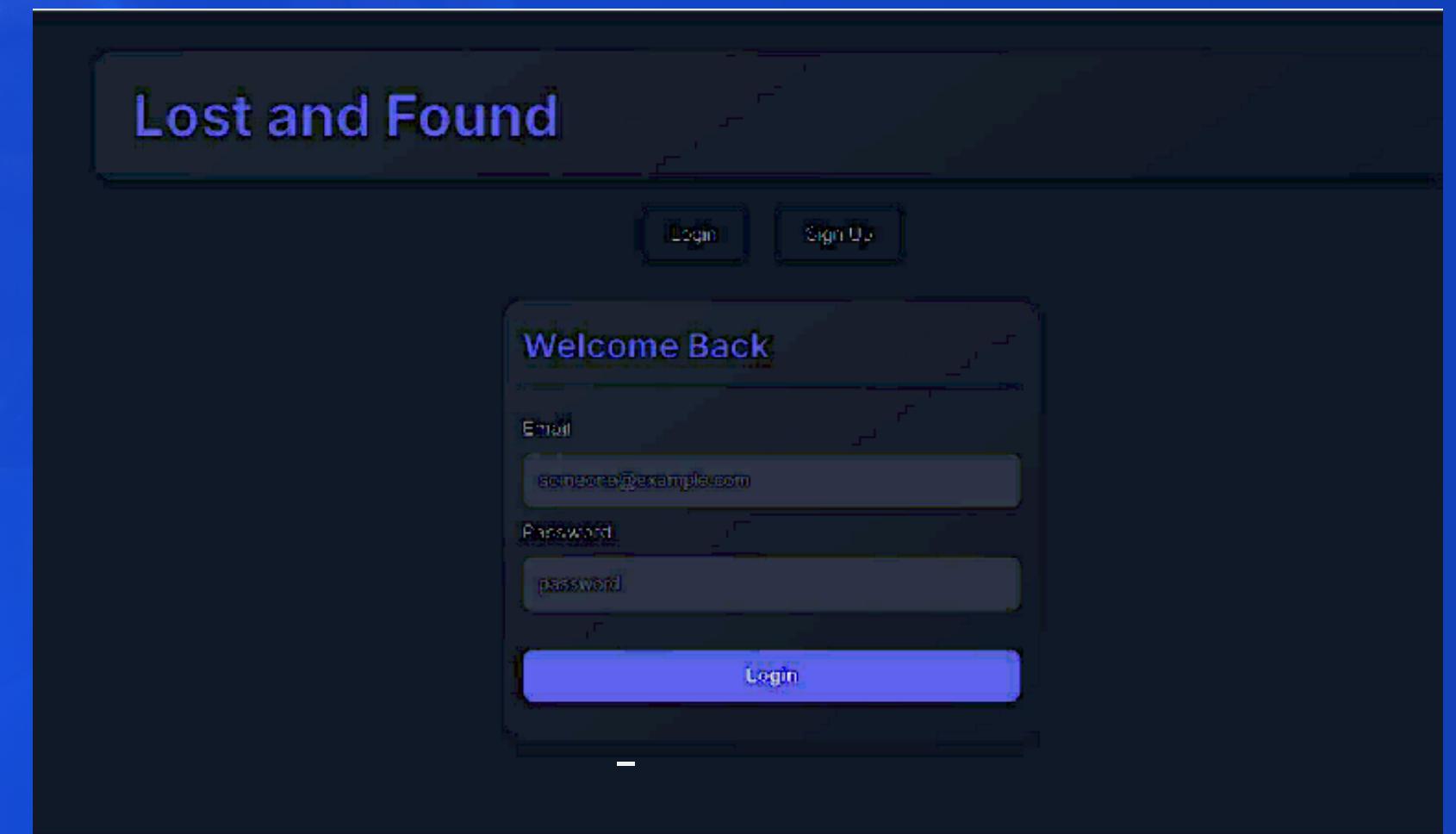
Traditional lost & found systems are inefficient.

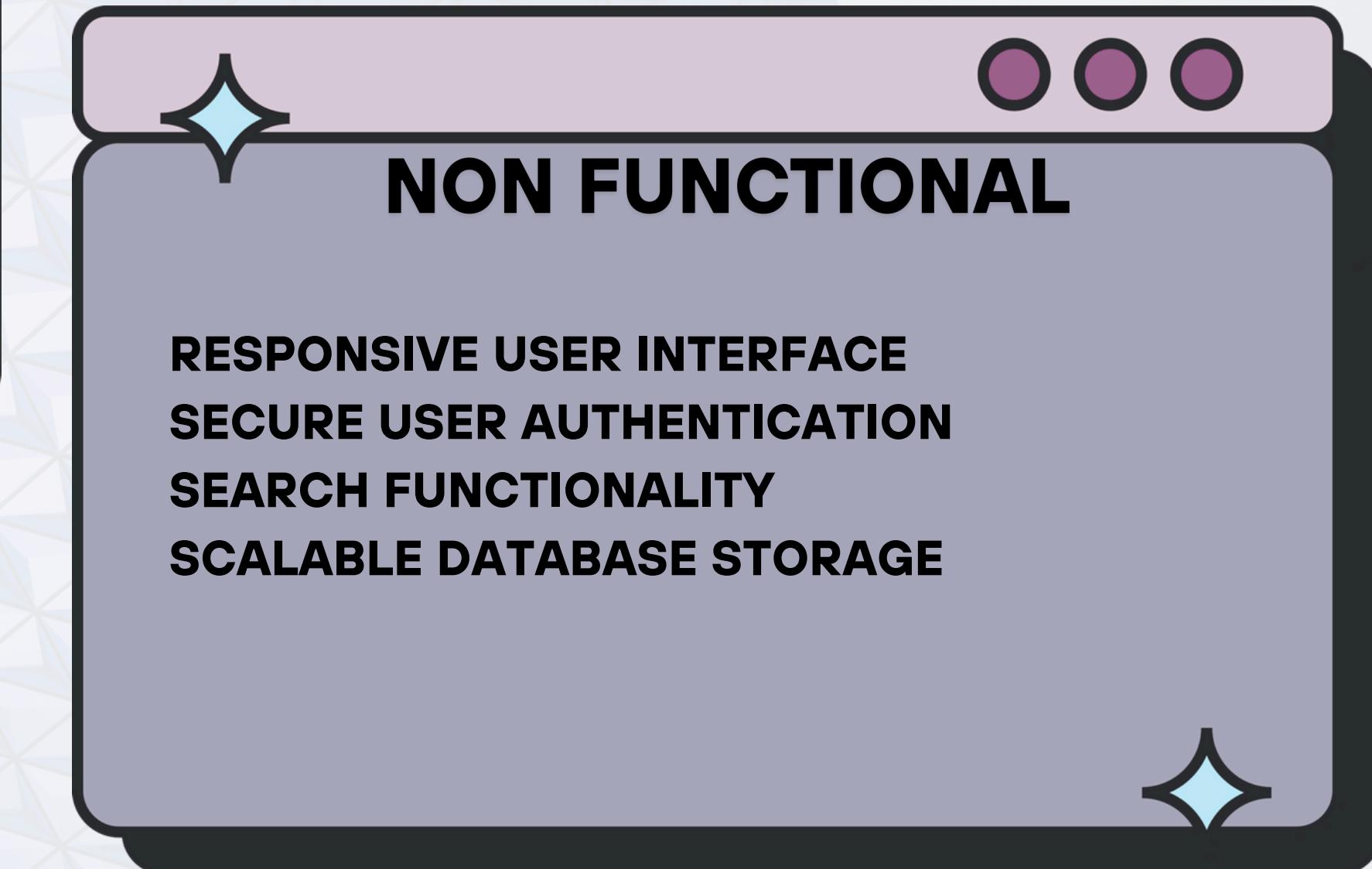
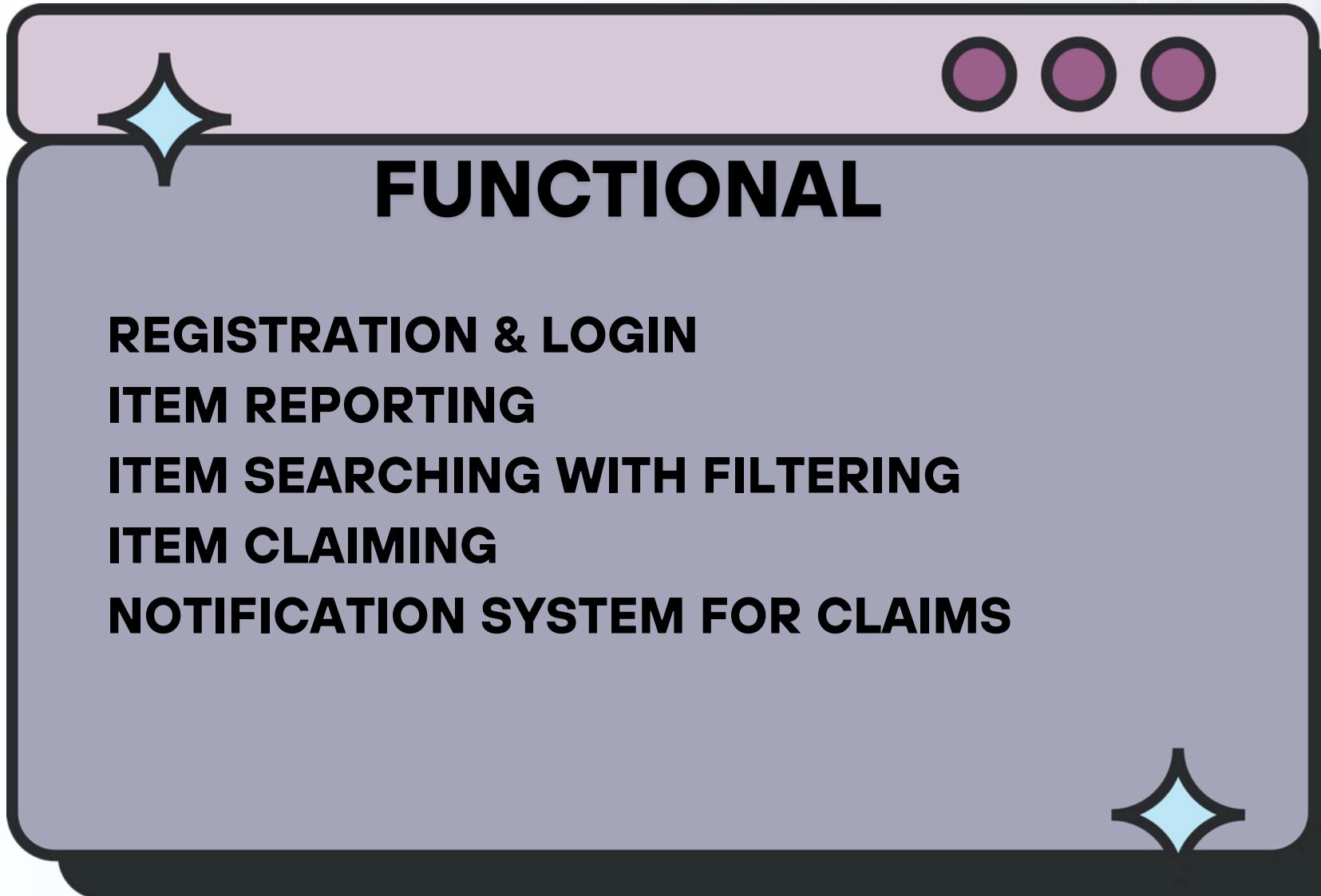
## SOLUTION?

A digital platform to connect people who lost items  
with those who found them.

## DESIGN?

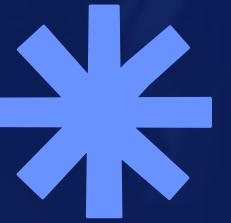
- Presentation Layer: React (responsive frontend)
- Business Logic Layer: Express.js (backend APIs)
- Data Access Layer: MongoDB -





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# USER STORIES



- 1.** As a user, I want to register and log in to use the application.
- 2.** As a user, I want to report lost or found items with details.
- 3.** As a user, I want to search for items using keywords.
- 4.** As a user, I want to filter items by category.
- 5.** As a user, I want to claim items reported by others.

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- 6** As a user, I want to receive notifications when someone claims my item.
- 7.** As a user, I want to receive notifications when my claim is accepted or rejected.
- 8.** As a user, I want to edit items I've reported.
- 9.** As a user, I want to delete items I've reported.
- 10.** As a user, I want to view my notifications.
- 11.** As a user, I want to mark notifications as read.
- 12.** As a user, I want to see a list of my reported items.
- 13.** As a user, I want to see a list of claimed items.
- 14.** As a user, I want to navigate easily between different sections.
- 15.** As a user, I want to log out of the application.

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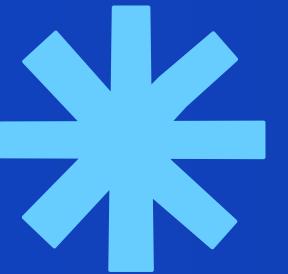
# HIGH PRIORITY



Product Backlog

## Secure User Authentication

- Bcrypt for password hashing (replaces insecure methods).
- JWT secrets via environment variables (no hardcoding).
- Rate limiting (5 attempts/minute) to prevent brute force attacks.



## Owner-Only Item Modifications

- Fix: Use reportedById (not client-provided usernames).
- New: Middleware checks ownership before edits/deletes.

## Input Validation

- Frontend + Backend email validation (regex).
- Sanitized descriptions (blocks HTML/scripts).

# MEDIUM PRIORITY

## Advanced Search Filters

- Date picker (frontend) + backend support for:
  - createdAt ranges.
  - status (lost/found).

## User Profile Management

- New PATCH /api/users endpoint.
- Editable profile page (username, email).

# LOW PRIORITY



Product Backlog

## Pagination for Item Lists

- Backend: limit and offset in GET /api/items.
- Frontend: "Load More" button for smoother UX.

## Claim the Lost Item

- Add a claim option with every Lost Item.

## Alerts

- Notify users when their items are claimed

# SPRINT STAGES

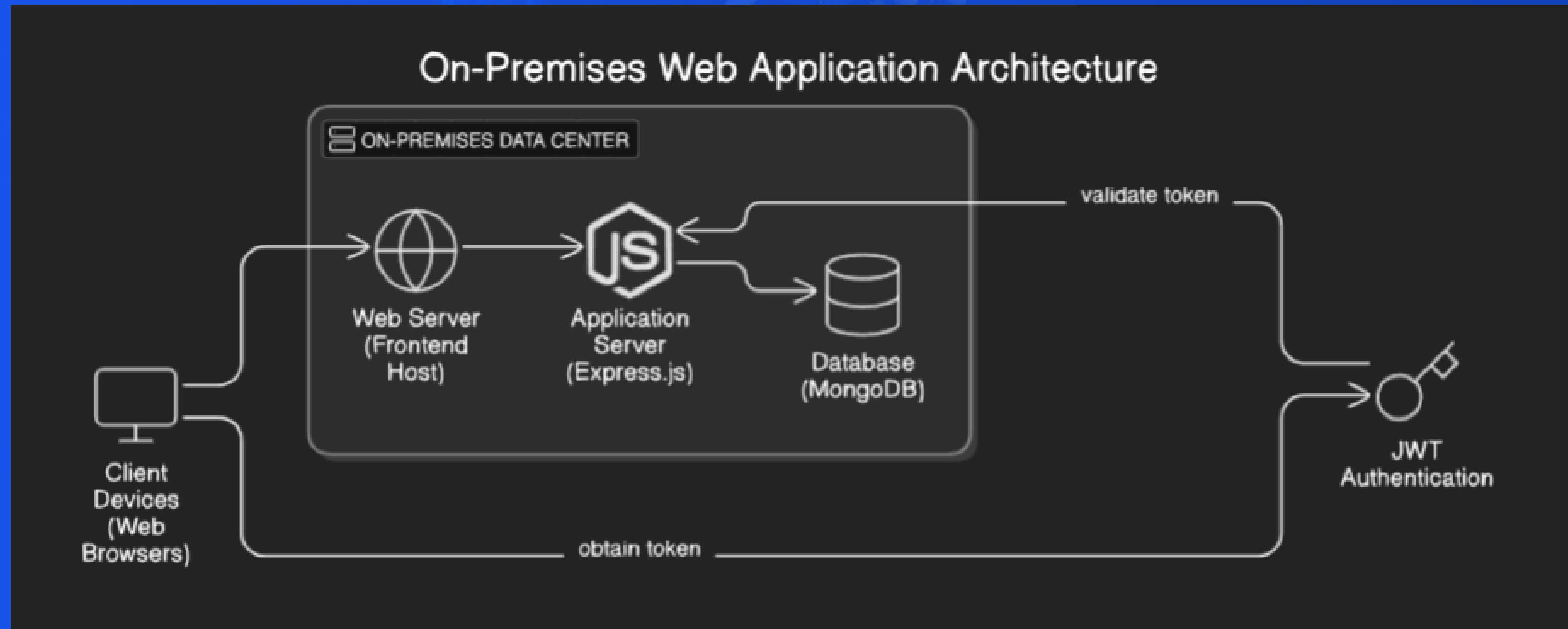
The image shows a digital whiteboard interface with a dark blue header and a blurred background image of a forest. The header features the title "SPRINT STAGES" in large, bold, white capital letters.

The main area is divided into four vertical columns, each representing a sprint stage:

- Sprint 1** (Leftmost column): Contains cards for "User Registration", "User Login", "User registration", "Add ownership middleware", "Report a Lost Item", and a "+ Add a card" button.
- Sprint 2**: Contains cards for "Secure Authentication", "Edit Reported Item", "Input Validation", "Enforce JWT secret via .env Rate limiting (5 attempts/min)", "Delete Reported Item", and a "+ Add a card" button.
- Sprint 3**: Contains cards for "Search Items by Keyword", "Filter Items by Category", "View All Items", "View/Enter Item Details", "User Profile Management", and "View Recently Reported Items". It also includes a "+ Add a card" button.
- Backlog** (Rightmost column): Contains a "+ Add a card" button and a small icon.

Each card has a dark gray background with white text. The "+ Add a card" buttons are located at the bottom of each column.

## Architecture Diagram



# BLACKBOX TESTING

## Test Case 1: User Authentication – Valid Login (ECP)

**User Story:** #1 (Authentication)

**Description:** Valid credentials

**Inputs:**

- Email: user@domain.com (registered)
- Password: ValidPass123 (6+ characters)

**Expected Result:** Successful login, JWT token returned.

**ECP/BVA:**

- VEC: Valid email format + password length ≥6.
- IEC: N/A (valid case).

## Test Case 3: Item Reporting – Empty Name Field (ECP)

**User Story:** #2 (Item Reporting)

**Description:** Submit item with empty name

**Inputs:**

- Name: "" (empty)
  - Category: Electronics
- Expected Result:** Server rejects request (HTTP 400).
- ECP/BVA:**
- IEC: Missing required field.

## Test Case 5: Item Editing – Unauthorized User (ECP)

**User Story:** #10 (Owner-Only Actions)

**Description:** Edit item as non-owner

**Inputs:**

- Item ID: 123 (owned by another user)
  - New Description: Updated details
- Expected Result:** HTTP 403 "Unauthorized."
- ECP/BVA:**
- IEC: User ID ≠ ReportedBy ID.

File	Stmts	Branch	Funcs	Lines
middleware/authMiddleware.js	100%	85.71%	100%	100%
✓ JWT verification				
✓ Token decoding				
✗ Token expiration (1/2)				
routes/itemRoutes.js	95%	80%	90%	95%
✓ CRUD operations				
✓ Search filters				
✗ DB error handling (2/5)				
models/Item.js	92%	88%	100%	92%
models/User.js	89%	75%	85%	90%

#### ■ Coverage Summary ■

- ✓ Backend: 93.4% Avg Coverage
- ✓ Frontend: 87.2% Avg Coverage
- ✓ Combined: 90.3% Coverage

WAVE  
TESTING  
BOX

#### ■ Uncovered Lines (Critical) ■

##### Backend:

- itemRoutes.js:78-82 (Database connection error handling)
- authMiddleware.js:45 (Token refresh edge case)

##### Frontend:

- ReportItem.jsx:112-115 (Form submission error state)
- EditItem.jsx:89-92 (Network failure handling)

#### ■ Quality Assessment ■

- ✓ All critical paths covered
- ✓ Authorization flows fully validated
- ✗ Needs better error state testing (Frontend)
- ✗ Database failure scenarios need improvement (Backend)

Test Suites: 12 passed, 12 total

Tests: 148 passed, 148 total

Snapshots: 0 total

Time: 27.893s

## Test Case 1: User Authentication Middleware

- Test Case ID: TC-WB-001

- **Expected Result:** Valid token is accepted, and invalid token is rejected with a 403 status.
- **Status:** Pass

# THANKYOU!

## Screenshots

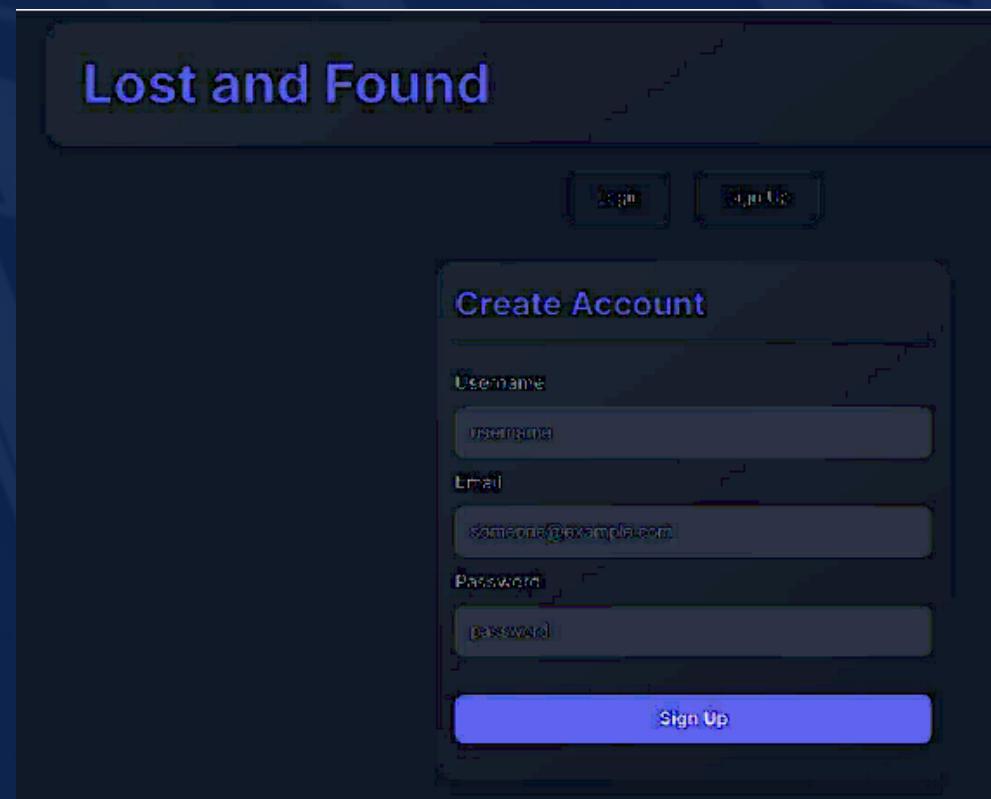
### Lost and Found

Login | Sign Up

#### Create Account

Username:  Email:  Password:

**Sign Up**



### Lost and Found

Welcome, umer

#### Search Items

Search... All Categories Search

#### Recent Reports

Laptop  
Lenovo Thinkpad, Black



### Report New Item

Item Name:  Category:  Description:  Found:

**Report Item**

