Final Report - SmartSphere Event Management System

Team Members:

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1. Project Introduction

SmartSphere Event Management System is designed to simplify NASCON event registration, management, scheduling, and participant communication. It caters to multiple user roles including admins, organizers, and participants, enhancing event workflows from creation to feedback collection.

2. Functional & Non-Functional Requirements

Functional Requirements:

- User Authentication (Signup/Login)
- Event Creation/Modification/Deletion
- Enrollment and Unenrollment in Events
- Feedback Submission and Notification Handling
- Admin Reporting and Announcements

Non-Functional Requirements:

- 99.9% System Uptime
- Responsive Web Design
- Secure Authentication (BCrypt Encryption)
- Scalable Architecture
- Data Privacy and Integrity

3. User Stories (15 Total, 5 by Each Member)

Ibtisam Shahzad:

- US-01: User Registration
- US-02: User Login
- US-03: Create Event
- US-04: View Notifications
- US-05: Submit Feedback

Haider Zia:

- US-06: Modify Event
- US-07: Delete Event
- US-08: Cancel Enrollment
- US-09: View Feedback Reports
- US-10: Add Announcements

Ibrahim Asim:

- US-11: Enroll in Event
- US-12: Update Profile
- US-13: Filter Events
- US-14: Dashboard Access
- US-15: Generate Admin Reports

4. Product Backlog

- The product backlog is a prioritized list of system features and user stories that need to be implemented in the Event Management System. Each item is categorized based on priority: **High**, **Medium**, or **Low**. High-priority items are essential for core functionality, while medium and low-priority items enhance the system but are not immediately critical.

ID	User Story	Priority
US-01	As a user, I want to register an account so that I can access the system.	**High**
US-02	As a user, I want to log in so that I can access my dashboard.	**High**
US-03	As an organizer, I want to create an event so that participants can register for it.	**High**
US-04	As an organizer, I want to modify an event so that I can update its details.	**Medium**
US-05	As an organizer, I want to remove an event so that it is no longer available.	**Medium**
US-06	As a participant, I want to enroll in an event so that I can attend it.	**High**
US-07	As a participant, I want to cancel my enrollment in an event so that I can withdraw from attending.	**Medium**
US-08	As a user, I want to send feedback so that I can share my experience about an event.	**High**
US-09	As a user, I want to send feedback so that I can share my experience about an event.	**Medium**
US-10	As a user, I want to view notifications so that I stay informed about event updates.	**High**
US-11	As a user, I want to update my profile so that my information is accurate.	**Medium**
US-12	As a user, I want to filter events so that I can find relevant events based on my preferences.	**Low**
US-13	As an organizer, I want to add announcements so that participants receive important event updates.	**Medium**
US-14	As a user, I want to view feedback reports so that I can see event reviews and ratings.	**Medium**
US-15	As a participant, I want to cancel my event enrollment so that I can opt out if needed.	**Low**

5. Sprint 1 and Sprint 2 Backlog

Sprint 1 Tasks:

- Register Account (US-01)
- Login (US-02)
- Create Event (US-03)
- Enroll in Event (US-11)
- Submit Feedback (US-05)

Sprint 2 Tasks:

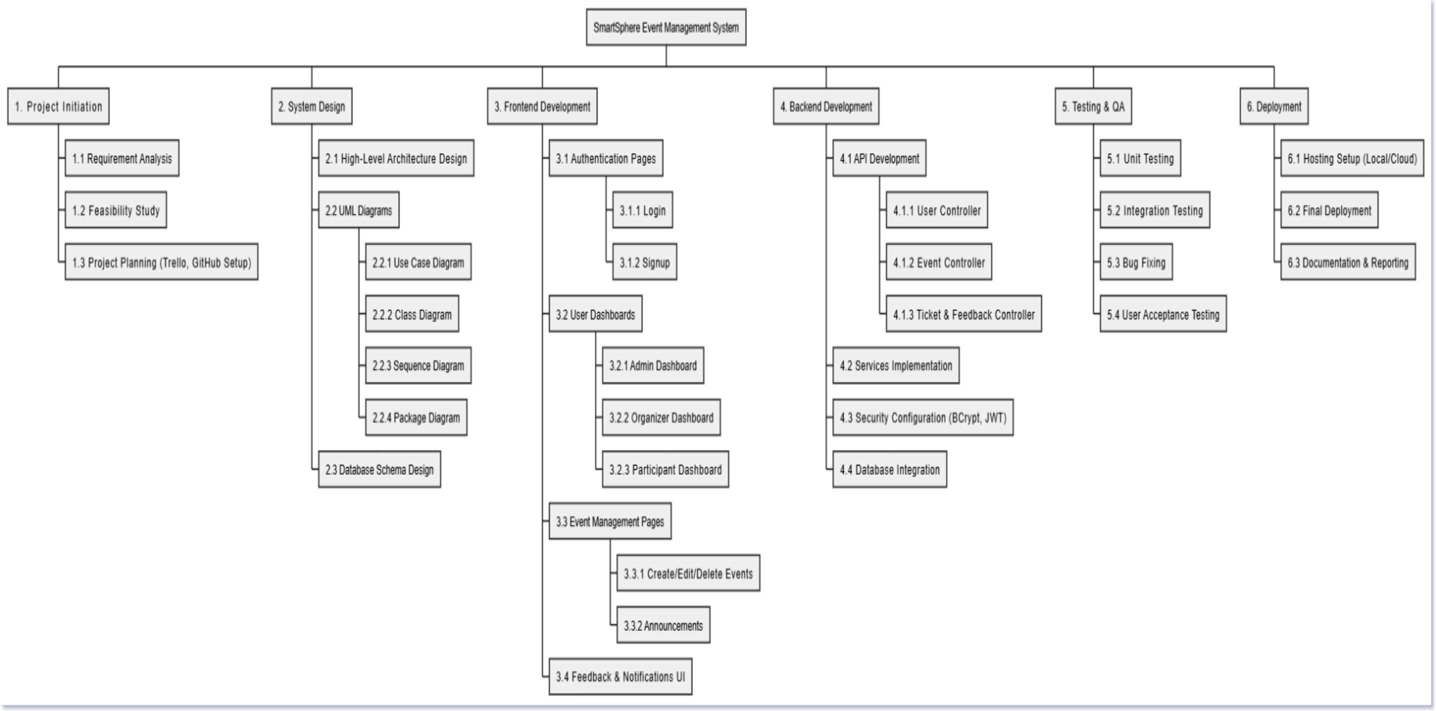
- Modify Event (US-06)
- Delete Event (US-07)
- Cancel Enrollment (US-08)
- View Notifications (US-04)
- Add Announcements (US-10)

6. Project Plan

Work Breakdown Structure (WBS)

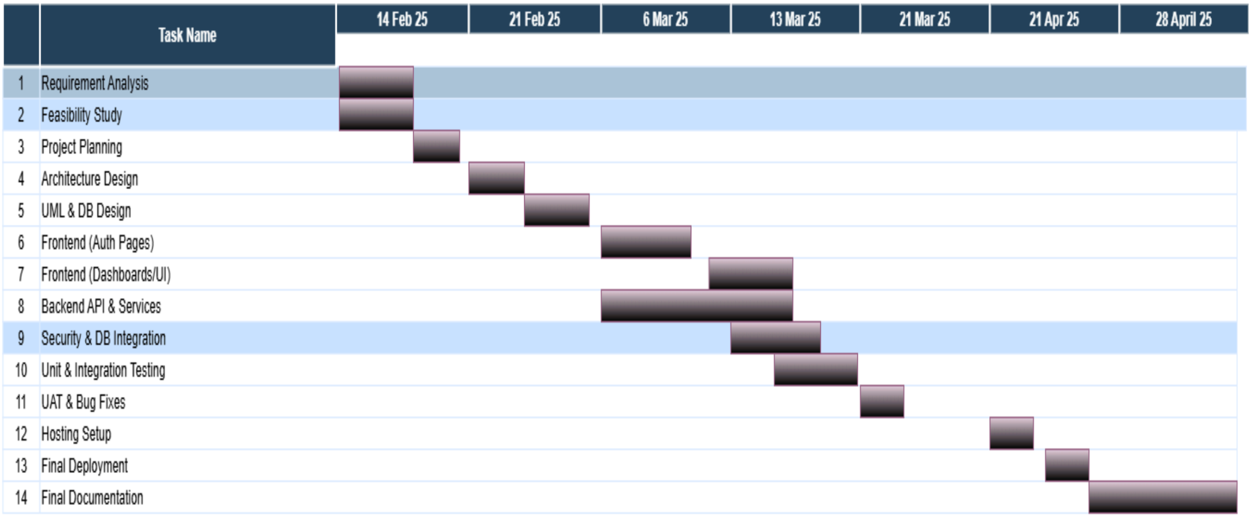
- Project Initiation
- System Design
- Frontend Development
- Backend Development

- Testing & QA
- Deployment



Gantt Chart

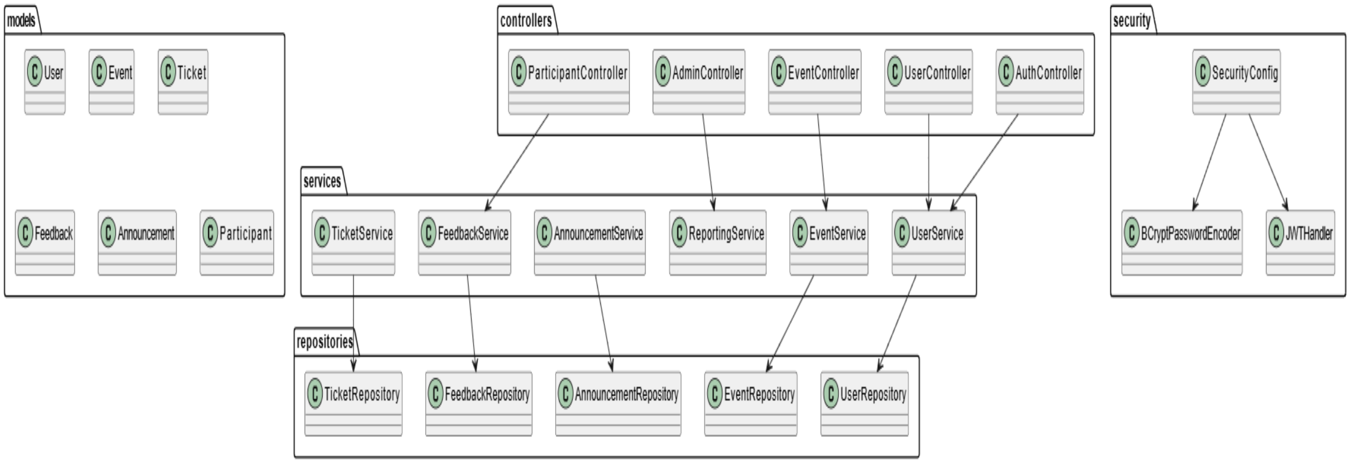
- 14 Feb - 28 Feb: D1 Completion
- 6 Mar - 23 Mar: D2 Completion
- 21 Apr - 28 Apr: D3 Finalization



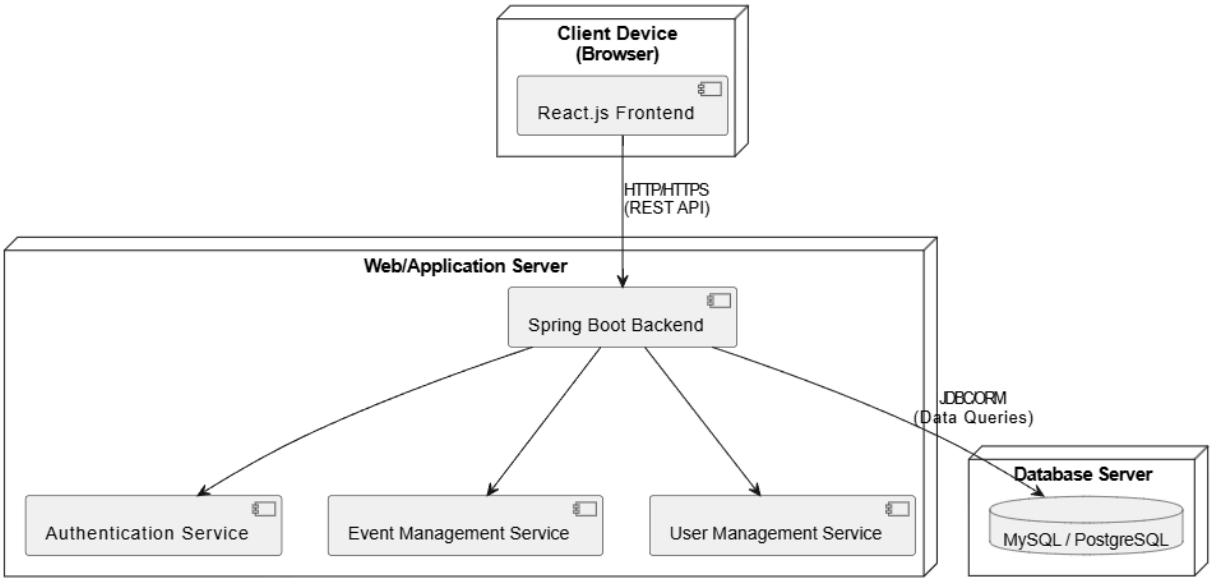
	Task Name	14 Feb 25	21 Feb 25	6 Mar 25	13 Mar 25	21 Mar 25	21 Apr 25	28 April 25
1	Requirement Analysis	■						
2	Feasibility Study	■						
3	Project Planning	■						
4	Architecture Design		■					
5	UML & DB Design		■					
6	Frontend (Auth Pages)			■				
7	Frontend (Dashboards/UI)			■	■			
8	Backend API & Services			■	■			
9	Security & DB Integration				■			
10	Unit & Integration Testing				■			
11	UAT & Bug Fixes					■		
12	Hosting Setup						■	
13	Final Deployment						■	
14	Final Documentation						■	■

7. Architecture Diagram

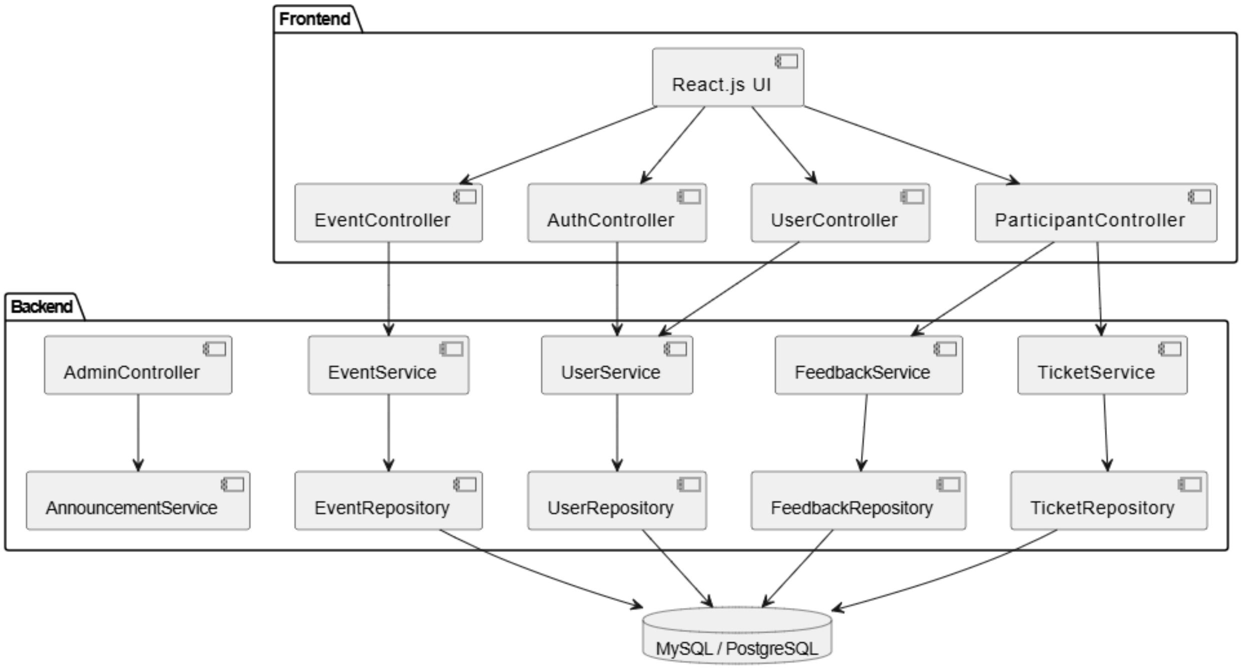
- **Package Diagram:** Authentication, Event Management, User Management, Notification/Feedback, Reporting, Security



- **Deployment Diagram:** Client → Web Server → Application Server → Database Server



- **Component Diagram:** Frontend, Controllers, Services, Repositories, Database



8. Design (Sprint 3 Items)

In Sprint 3, we focused on completing the remaining functionalities that were not addressed in Sprint 1 and Sprint 2.

Key items completed include:

- **Modification and Deletion of Events** through dedicated pages and corresponding backend services.

- **Event Enrollment Cancellation** by participants.

- **Announcement Posting** by admins and organizers to communicate event updates.

- **Notification Management** where participants can view system-generated announcements.

- **Feedback Collection** and display, allowing participants to submit feedback and admins to view reports.

The full frontend was integrated with backend REST APIs ensuring seamless user flows for all three roles: Admin, Organizer, and Participant.

Security aspects, such as password encryption and role-based authorization using Spring Security and JWT tokens, were also finalized in Sprint 3.

Additionally, database models and repositories were reviewed and finalized to support all data operations in the system.

Admins were provided with detailed event feedback reporting functionality to enhance event management efficiency.

Quick Summary:

- **User stories completed**: Modify, Delete Event, Feedback, Announcements, Cancel Enrollment.

- **Frontend finalized**: All UI pages connected to APIs.

- **Backend finalized**: REST APIs completed.
- **Security finalized**: Spring Security + JWT setup.
- **Database models finalized**: Entities complete and connected.
- **Reporting**: Admins can view reports.

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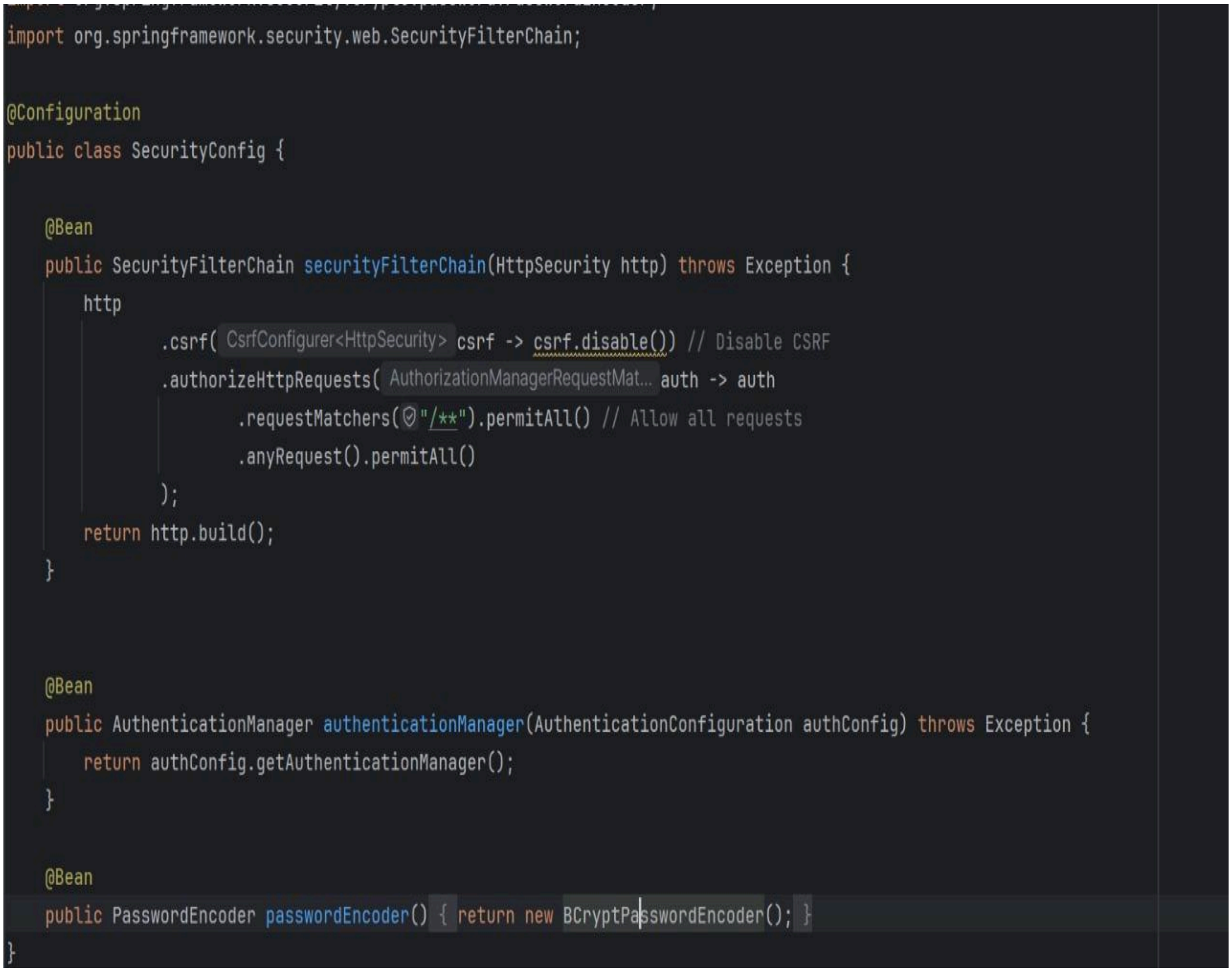
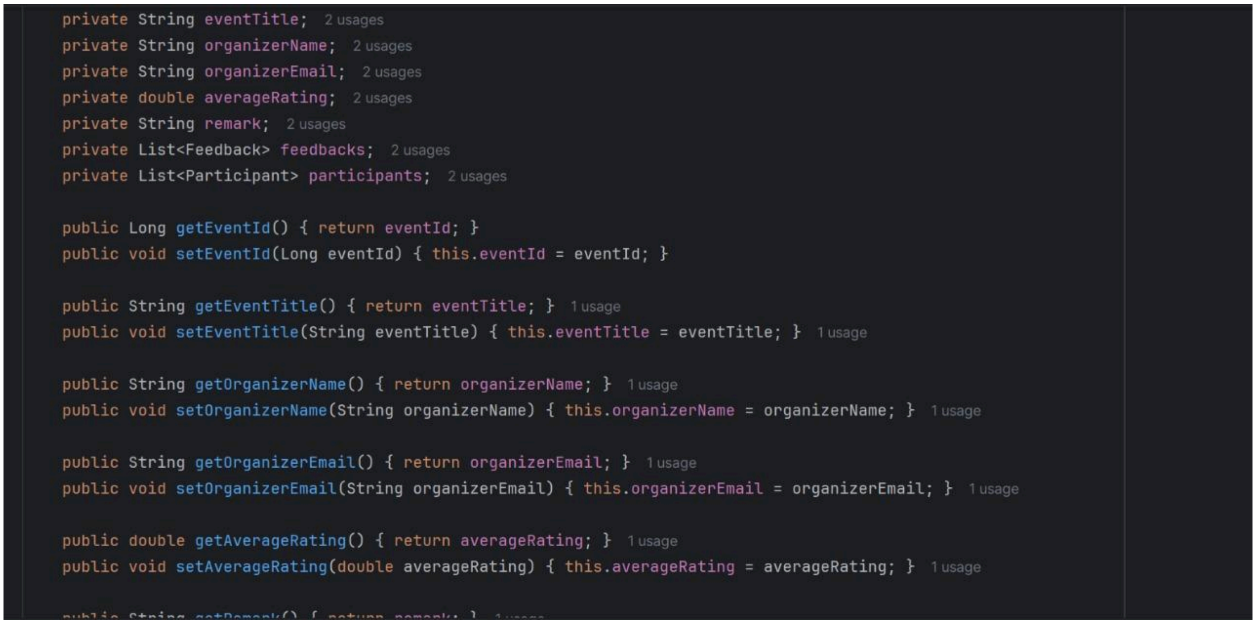
9. Actual Implementation Screenshots

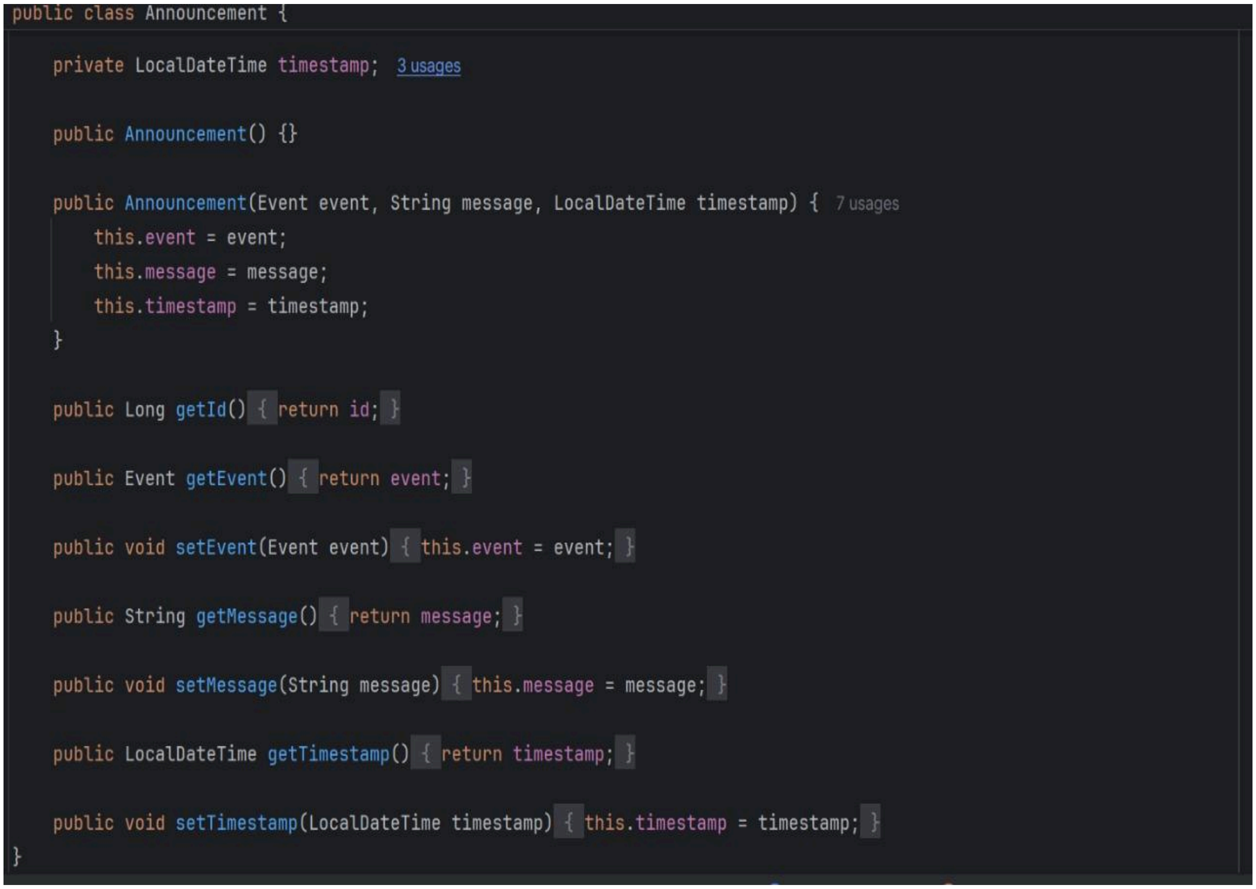
Backend:


CsrfConfigurer<HttpSecurity>
AuthorizationManagerRequestMat...

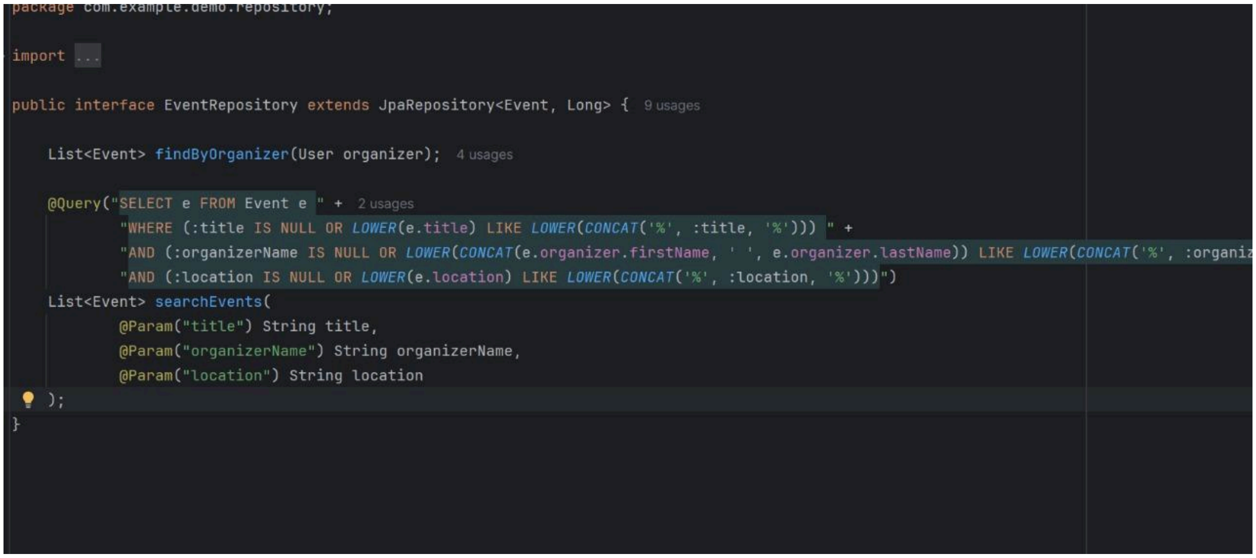
```
import org.springframework.security.web.SecurityFilterChain;

@Configuration
public class SecurityConfig {

    @Bean
    public SecurityFilterChain securityFilterChain(HttpSecurity http) throws Exception {
        http
                .csrf(csrf -> csrf.disable()) // Disable CSRF
                .authorizeHttpRequests(auth -> auth
                        .requestMatchers("/**").permitAll() // Allow all requests
                        .anyRequest().permitAll()
                );
        return http.build();
    }


    @Bean
    public AuthenticationManager authenticationManager(AuthenticationConfiguration authConfig) throws Exception {
        return authConfig.getAuthenticationManager();
    }

    @Bean
    public PasswordEncoder passwordEncoder() { return new BCryptPasswordEncoder(); }
}
```



```
    private String eventTitle;  2 usages
    private String organizerName;  2 usages
    private String organizerEmail;  2 usages
    private double averageRating;  2 usages
    private String remark;  2 usages
    private List<Feedback> feedbacks;  2 usages
    private List<Participant> participants;  2 usages

    public Long getEventId() { return eventId; }
    public void setEventId(Long eventId) { this.eventId = eventId; }

    public String getEventTitle() { return eventTitle; }  1 usage
    public void setEventTitle(String eventTitle) { this.eventTitle = eventTitle; }  1 usage

    public String getOrganizerName() { return organizerName; }  1 usage
    public void setOrganizerName(String organizerName) { this.organizerName = organizerName; }  1 usage

    public String getOrganizerEmail() { return organizerEmail; }  1 usage
    public void setOrganizerEmail(String organizerEmail) { this.organizerEmail = organizerEmail; }  1 usage

    public double getAverageRating() { return averageRating; }  1 usage
    public void setAverageRating(double averageRating) { this.averageRating = averageRating; }  1 usage

    public String getRemark() { return remark; }  1 usage
```

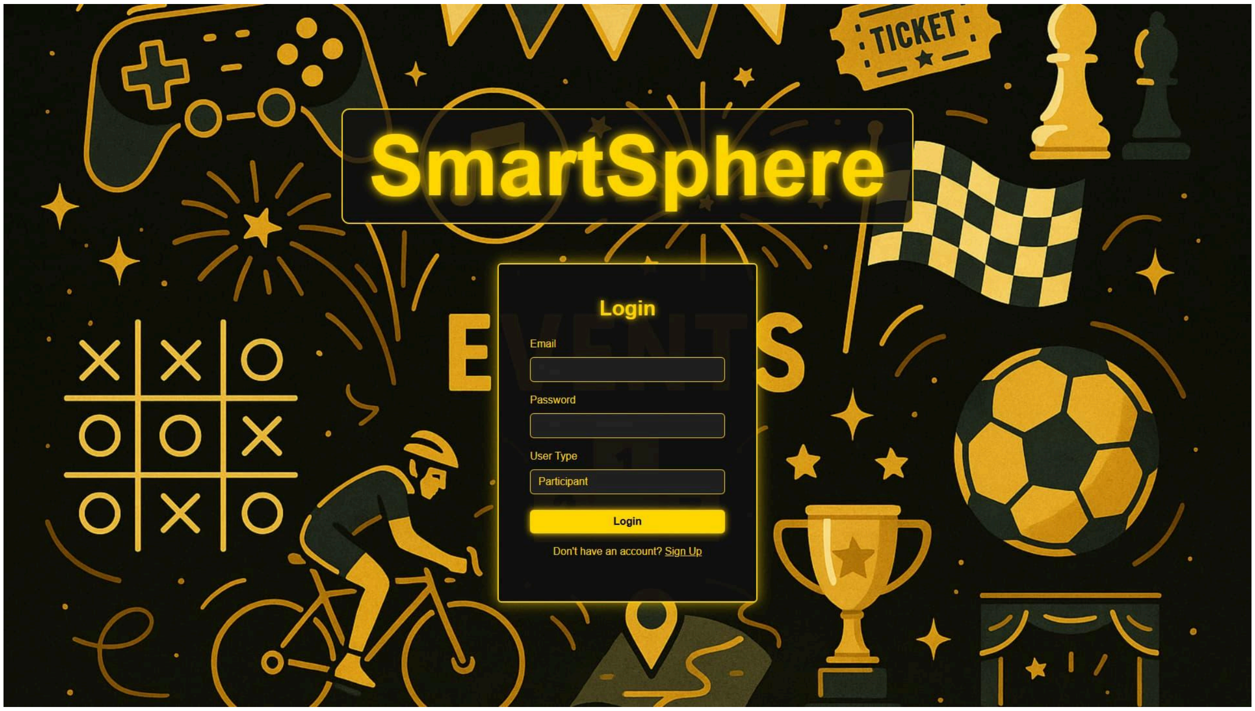


```
public class Announcement {

    private LocalDateTime timestamp;  3 usages

    public Announcement() {}

    public Announcement(Event event, String message, LocalDateTime timestamp) {  7 usages
        this.event = event;
        this.message = message;
        this.timestamp = timestamp;
    }

    public Long getId() { return id; }

    public Event getEvent() { return event; }

    public void setEvent(Event event) { this.event = event; }

    public String getMessage() { return message; }

    public void setMessage(String message) { this.message = message; }

    public LocalDateTime getTimestamp() { return timestamp; }

    public void setTimestamp(LocalDateTime timestamp) { this.timestamp = timestamp; }
}
```



```
package com.example.demo.repository;

import ...

public interface EventRepository extends JpaRepository<Event, Long> {  9 usages

    List<Event> findByOrganizer(User organizer);  4 usages

    @Query("SELECT e FROM Event e " +  2 usages
            "WHERE (:title IS NULL OR LOWER(e.title) LIKE LOWER(CONCAT('%', :title, '%'))) " +
            "AND (:organizerName IS NULL OR LOWER(CONCAT(e.organizer.firstName, ' ', e.organizer.lastName)) LIKE LOWER(CONCAT('%', :organiz
            "AND (:location IS NULL OR LOWER(e.location) LIKE LOWER(CONCAT('%', :location, '%')))")
    List<Event> searchEvents(
            @Param("title") String title,
            @Param("organizerName") String organizerName,
            @Param("location") String location
    );
}
```

Login:



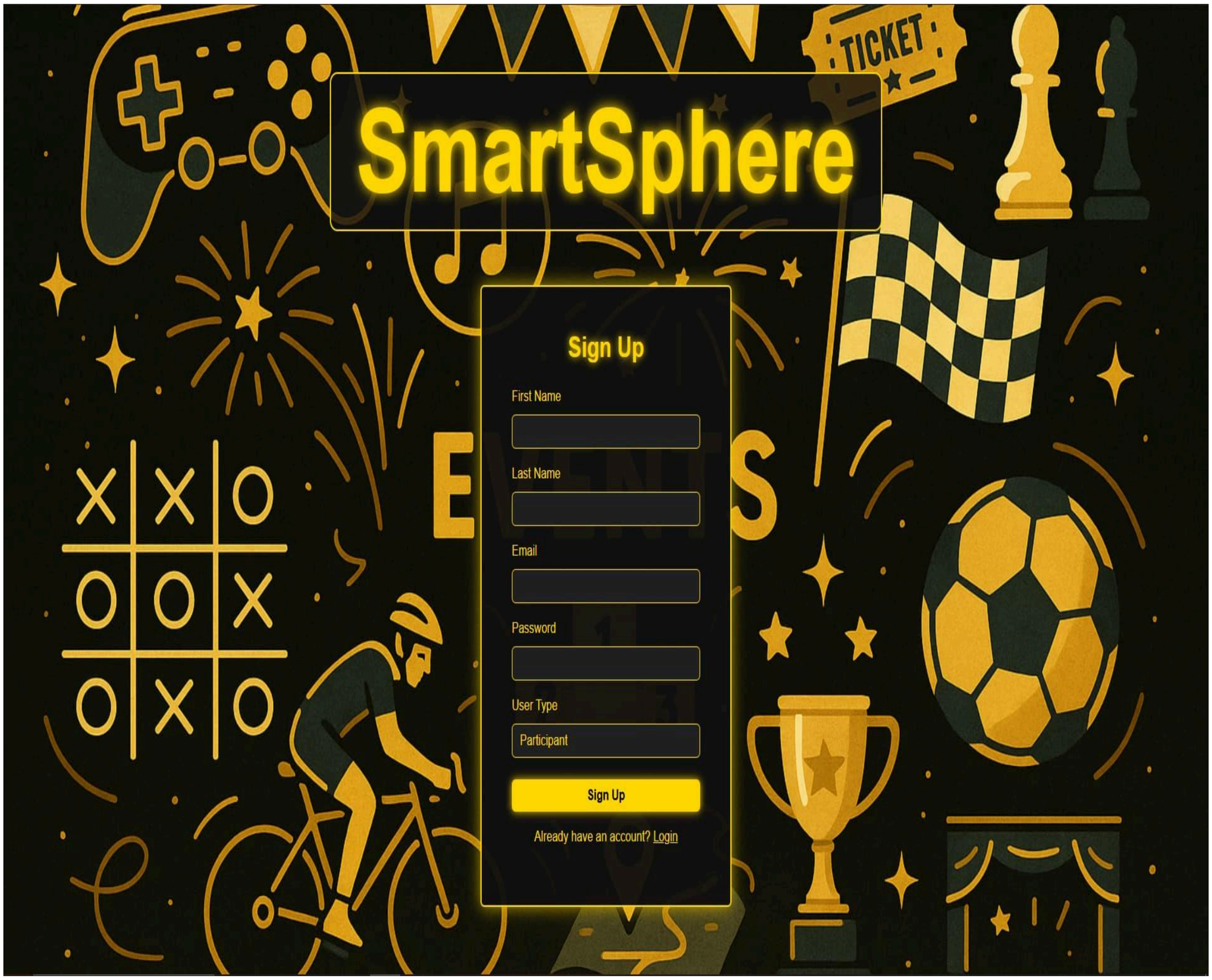
Login

Email

Password

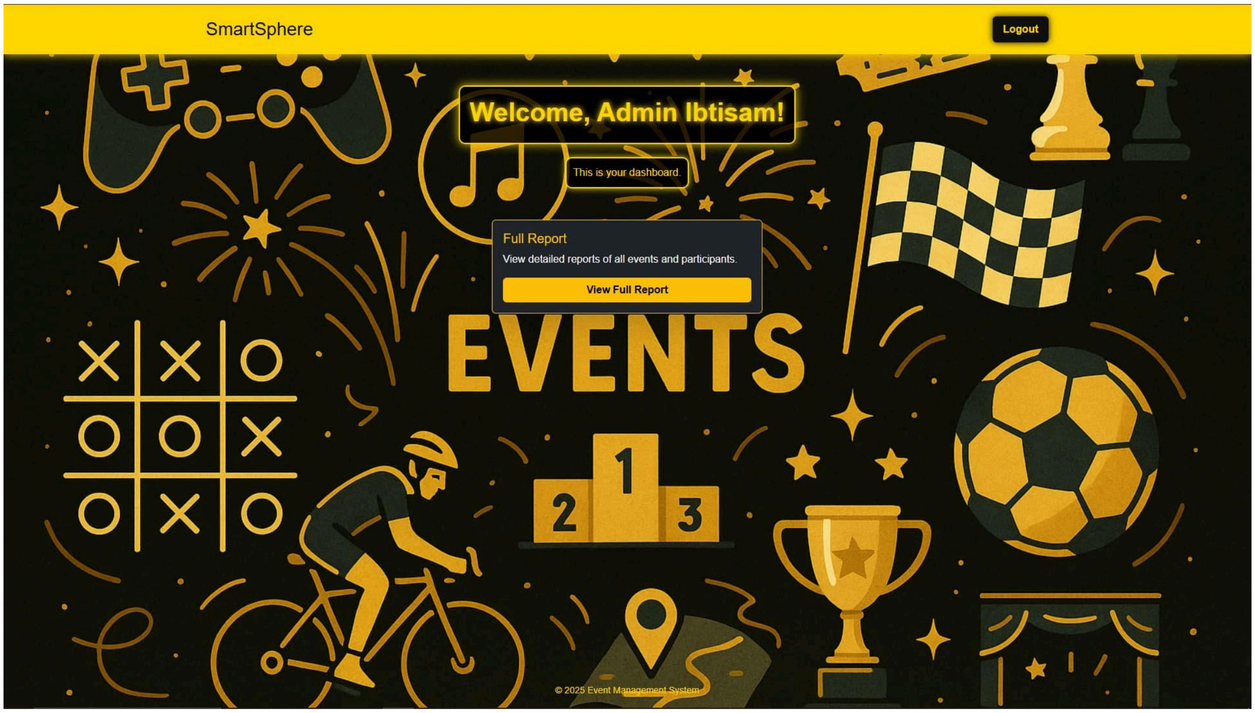
User Type: Participant

SignUp:



SmartSphere
Sign Up
First Name
Last Name
Email
Password
User Type
Participant
Sign Up
Already have an account? Login
TICKET
EVENTS

Admin-Dashboard:



Welcome, Admin Ibtisam!

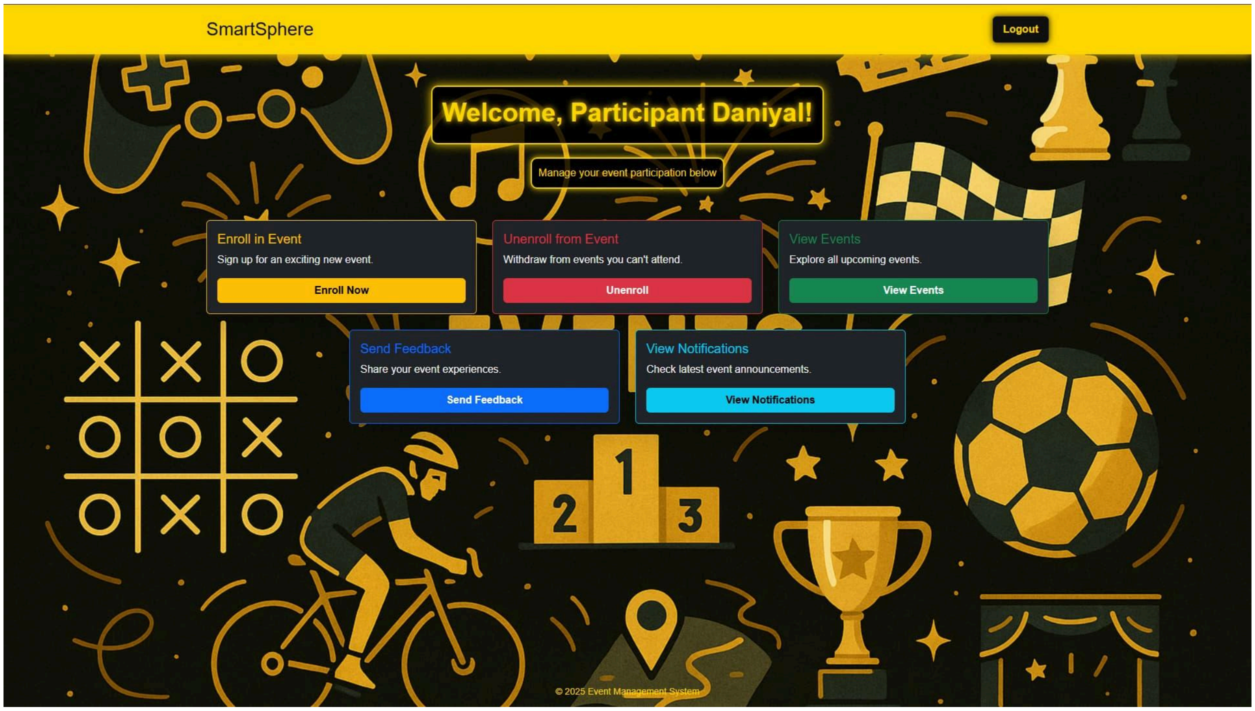
This is your dashboard.

Full Report

View detailed reports of all events and participants.

© 2025 Event Management System

Participant-Dashboard:



Welcome, Participant Daniyal!

Manage your event participation below

Enroll in Event

Sign up for an exciting new event.

Unenroll from Event

Withdraw from events you can't attend.

View Events

Explore all upcoming events.

Send Feedback

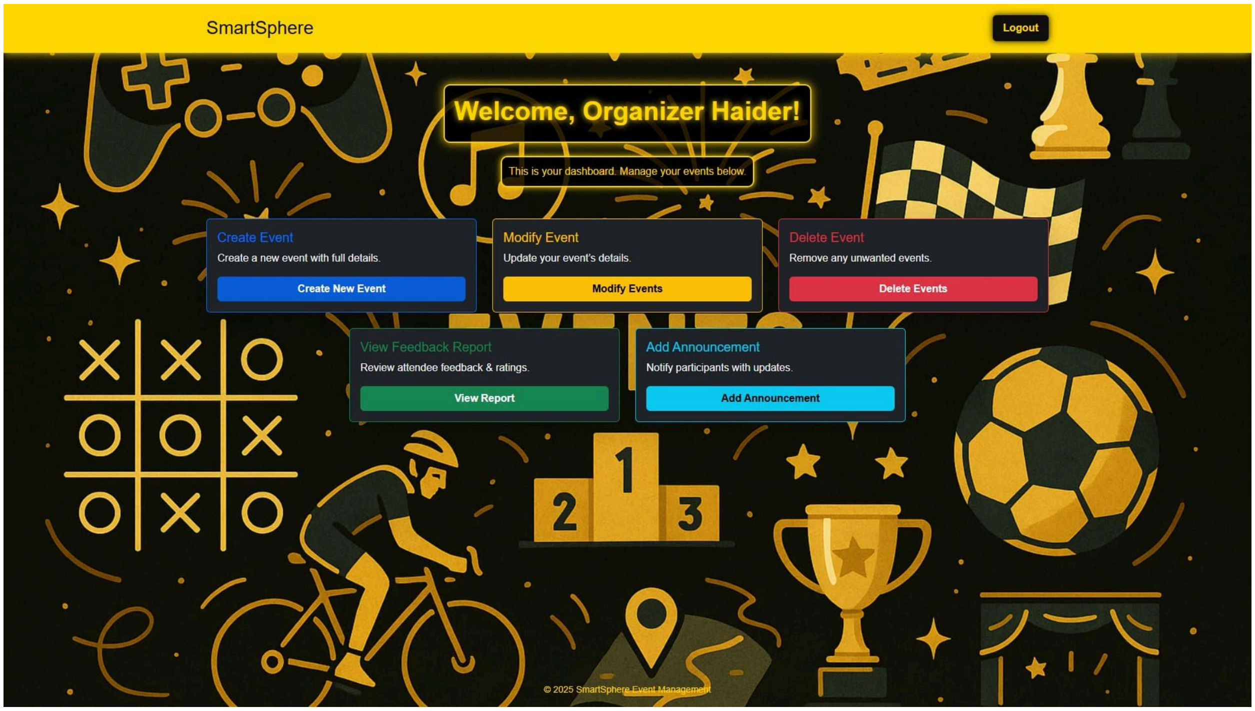
Share your event experiences.

View Notifications

Check latest event announcements.

© 2025 Event Management System

Organizer-Dashboard:



SmartSphere

Welcome, Organizer Haider!

This is your dashboard. Manage your events below

Create Event

Create a new event with full details.

Modify Event

Update your event's details.

Delete Event

Remove any unwanted events.

View Feedback Report

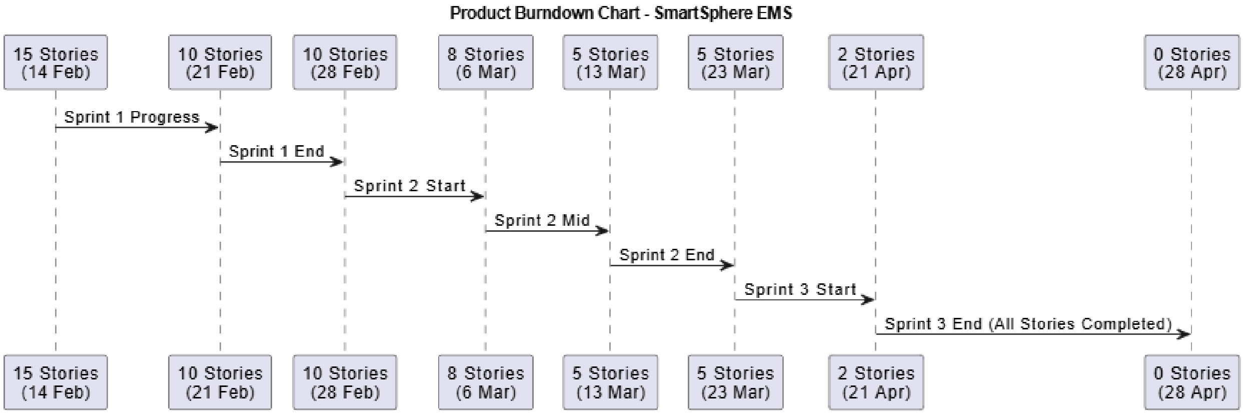
Review attendee feedback & ratings.

Add Announcement

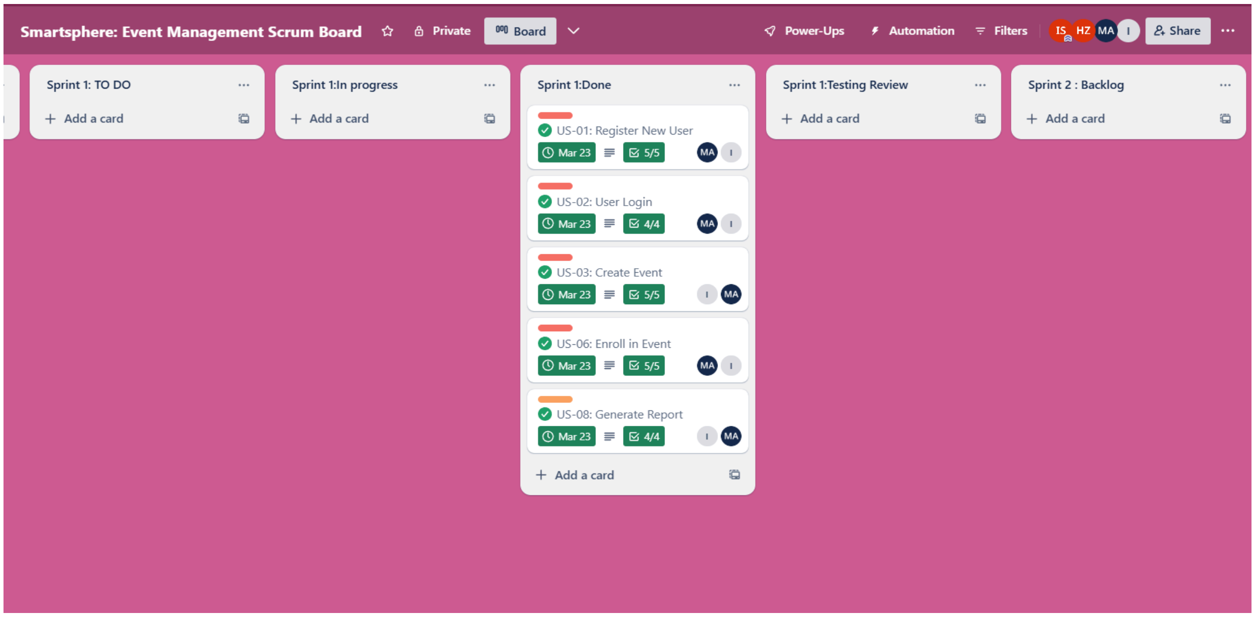
Notify participants with updates.

© 2025 SmartSphere Event Management

10. Product Burndown Chart



11. Trello Board Screenshots



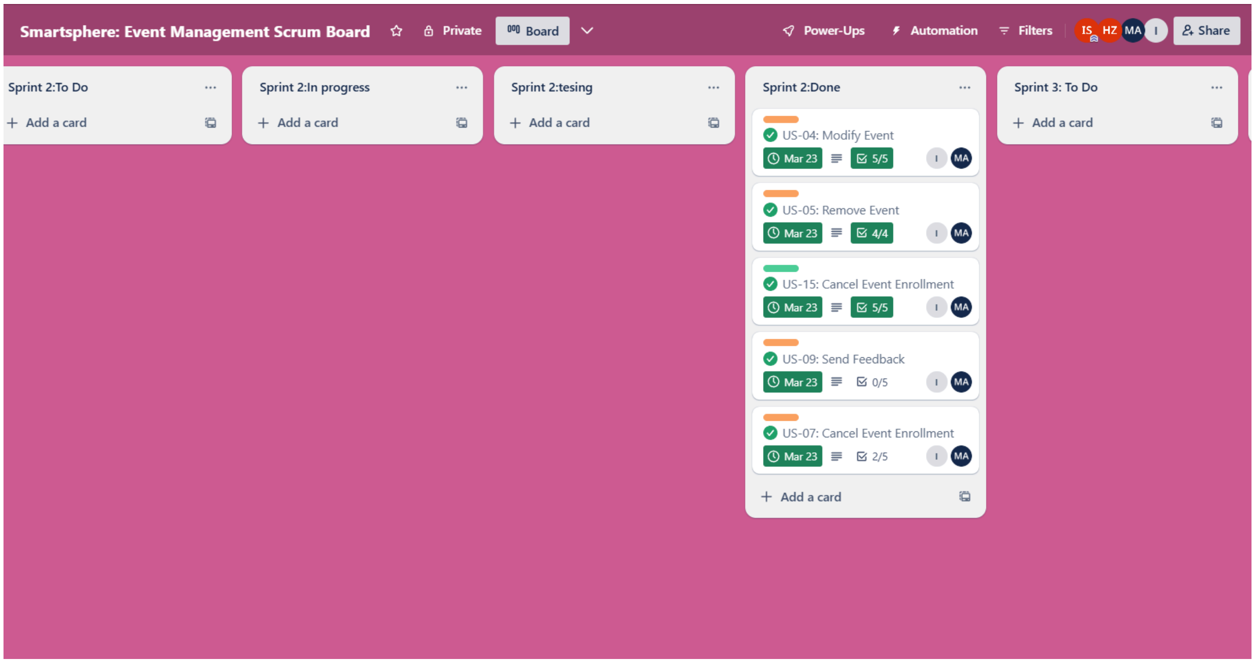
Sprint 1: TO DO
- Add a card

Sprint 1:In progress
- Add a card

Sprint 1:Done
- US-01: Register New User — Mar 23 — 5/5 — MA I
- US-02: User Login — Mar 23 — 4/4 — MA I
- US-03: Create Event — Mar 23 — 5/5 — I MA
- US-06: Enroll in Event — Mar 23 — 5/5 — MA I
- US-08: Generate Report — Mar 23 — 4/4 — I MA
- Add a card

Sprint 1:Testing Review
- Add a card

Sprint 2 : Backlog
- Add a card



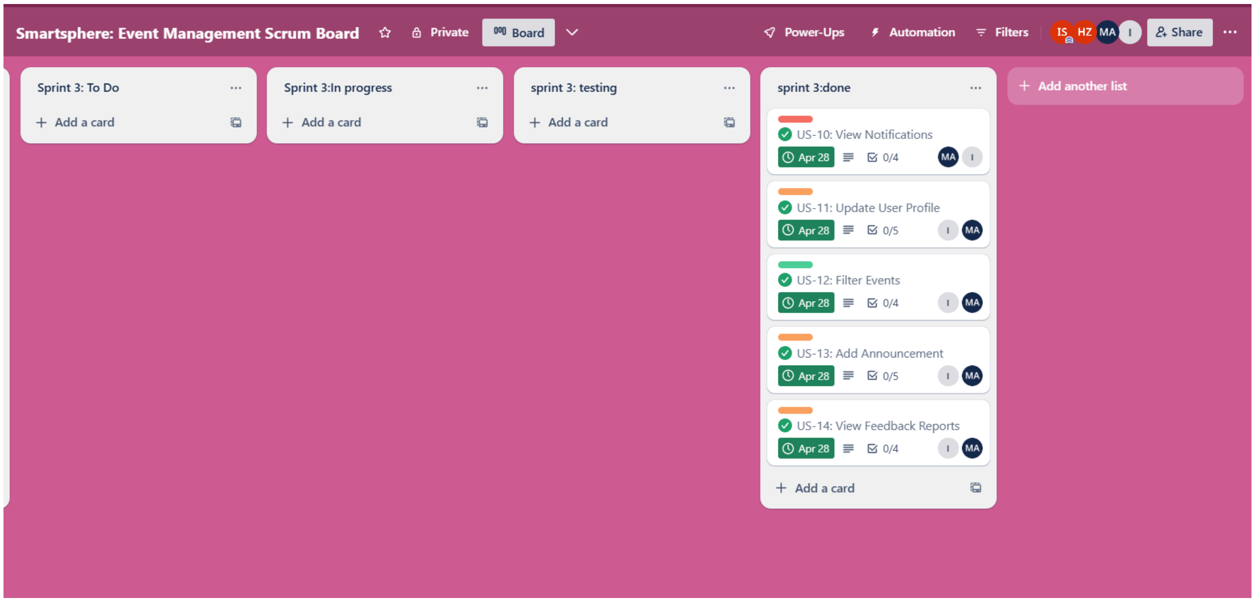
Sprint 2:To Do
- Add a card

Sprint 2:In progress
- Add a card

Sprint 2:tesing
- Add a card

Sprint 2:Done
- US-04: Modify Event — Mar 23 — 5/5 — I MA
- US-05: Remove Event — Mar 23 — 4/4 — I MA
- US-15: Cancel Event Enrollment — Mar 23 — 5/5 — I MA
- US-09: Send Feedback — Mar 23 — 0/5 — I MA
- US-07: Cancel Event Enrollment — Mar 23 — 2/5 — I MA
- Add a card

Sprint 3: To Do
- Add a card



Smartsphere: Event Management Scrum Board

Sprint 3: To Do

+ Add a card

Sprint 3:In progress

+ Add a card

sprint 3: testing

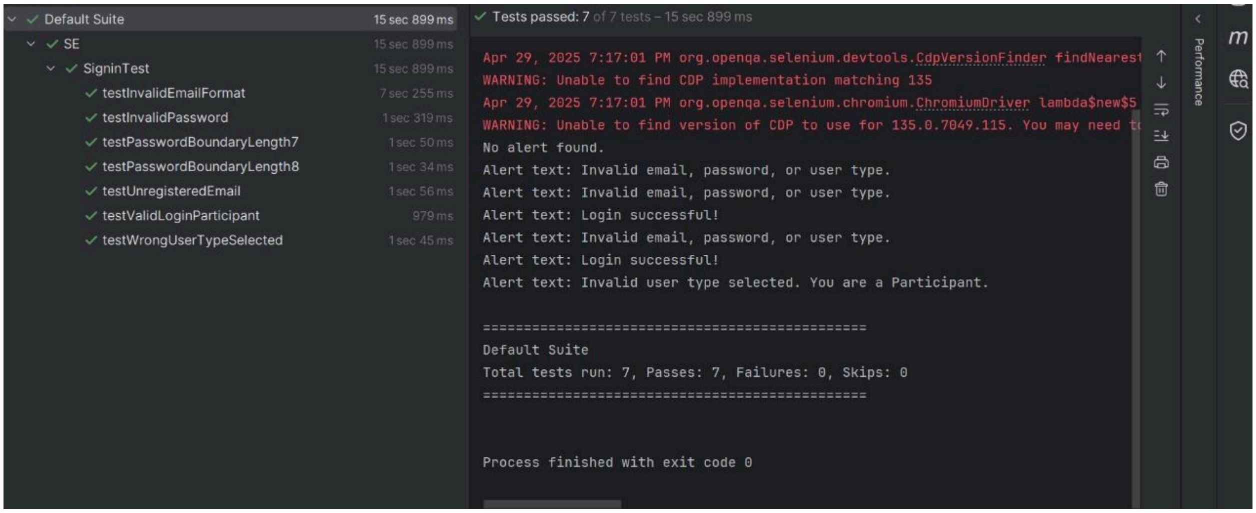
+ Add a card

sprint 3:done

- ✓ US-10: View Notifications — Apr 28 — 0/4 — MA I
- ✓ US-11: Update User Profile — Apr 28 — 0/5 — I MA
- ✓ US-12: Filter Events — Apr 28 — 0/4 — I MA
- ✓ US-13: Add Announcement — Apr 28 — 0/5 — I MA
- ✓ US-14: View Feedback Reports — Apr 28 — 0/4 — I MA

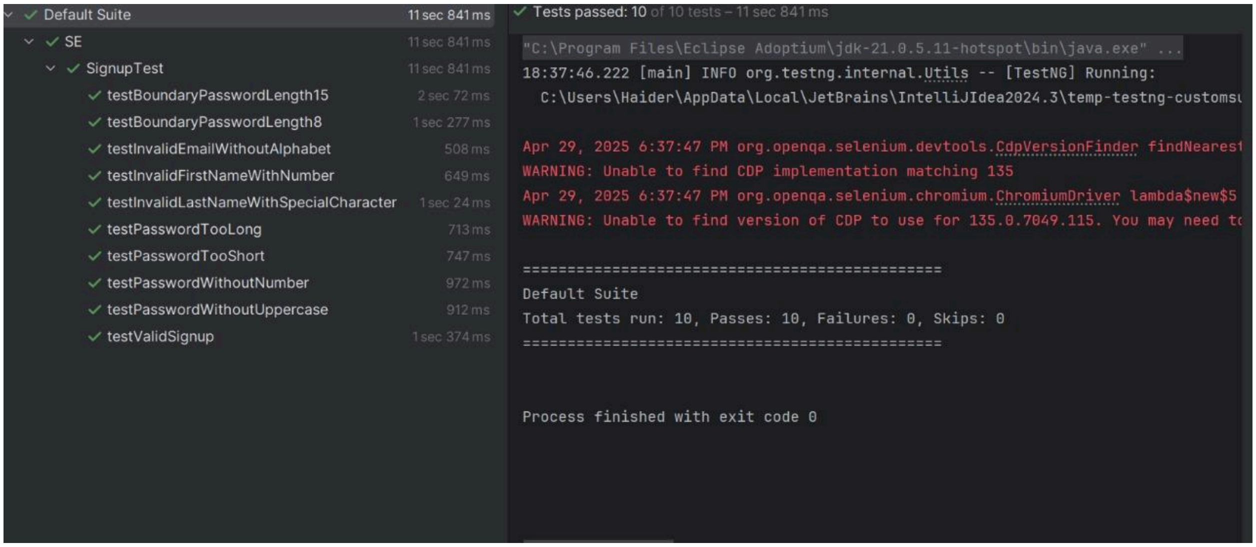
+ Add a card

12. Test Cases - Black Box



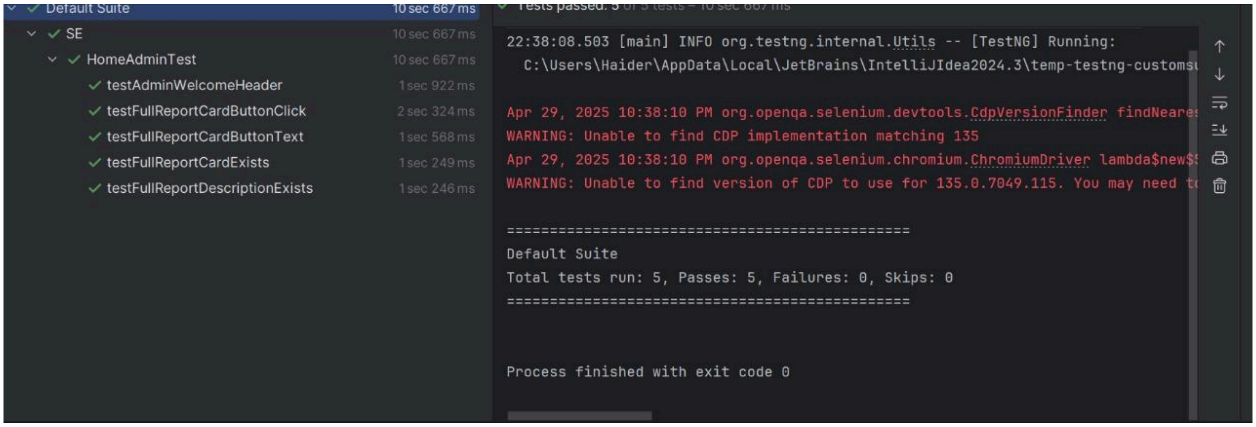
```
Default Suite                                15 sec 899 ms
  SE                                         15 sec 899 ms
    SigninTest                               15 sec 899 ms
      testInvalidEmailFormat                  7 sec 255 ms
      testInvalidPassword                     1 sec 319 ms
      testPasswordBoundaryLength7             1 sec 50 ms
      testPasswordBoundaryLength8             1 sec 34 ms
      testUnregisteredEmail                   1 sec 56 ms
      testValidLoginParticipant                      979 ms
      testWrongUserTypeSelected               1 sec 45 ms
```

```
Tests passed: 7 of 7 tests – 15 sec 899 ms

Apr 29, 2025 7:17:01 PM org.openqa.selenium.devtools.CdpVersionFinder findNearest
WARNING: Unable to find CDP implementation matching 135
Apr 29, 2025 7:17:01 PM org.openqa.selenium.chromium.ChromiumDriver lambda$new$5
WARNING: Unable to find version of CDP to use for 135.0.7049.115. You may need to
No alert found.
Alert text: Invalid email, password, or user type.
Alert text: Invalid email, password, or user type.
Alert text: Login successful!
Alert text: Invalid email, password, or user type.
Alert text: Login successful!
Alert text: Invalid user type selected. You are a Participant.

===============================================
Default Suite
Total tests run: 7, Passes: 7, Failures: 0, Skips: 0
===============================================


Process finished with exit code 0
```



```
Default Suite                                    11 sec 841 ms
  SE                                             11 sec 841 ms
    SignupTest                                   11 sec 841 ms
      testBoundaryPasswordLength15                2 sec 72 ms
      testBoundaryPasswordLength8                 1 sec 277 ms
      testInvalidEmailWithoutAlphabet                    508 ms
      testInvalidFirstNameWithNumber                     649 ms
      testInvalidLastNameWithSpecialCharacter     1 sec 24 ms
      testPasswordTooLong                                713 ms
      testPasswordTooShort                               747 ms
      testPasswordWithoutNumber                          972 ms
      testPasswordWithoutUppercase                       912 ms
      testValidSignup                             1 sec 374 ms
```

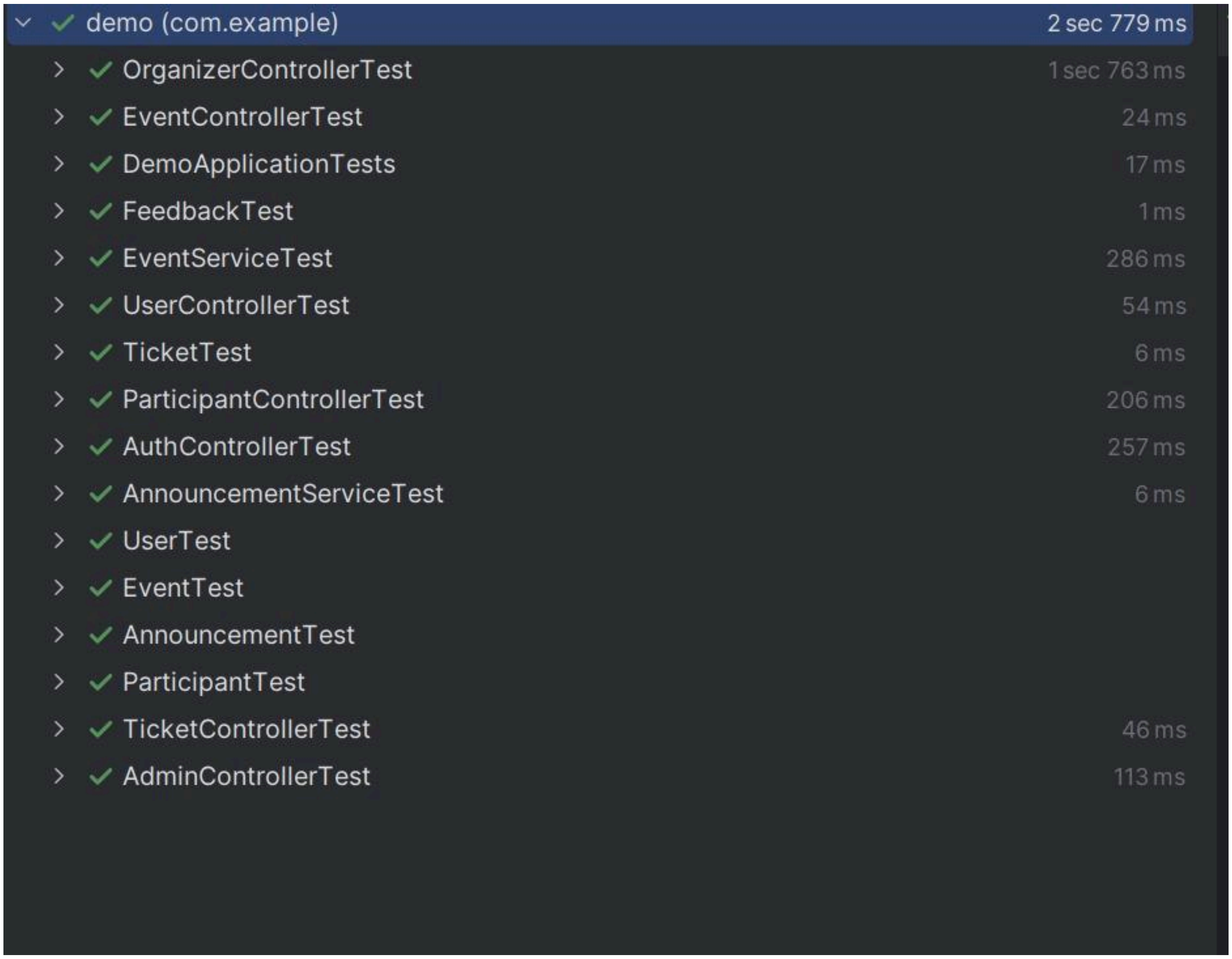
```
Tests passed: 10 of 10 tests – 11 sec 841 ms

"C:\Program Files\Eclipse Adoptium\jdk-21.0.5.11-hotspot\bin\java.exe" ...
18:37:46.222 [main] INFO org.testng.internal.Utils -- [TestNG] Running:
  C:\Users\Haider\AppData\Local\JetBrains\IntelliJIdea2024.3\temp-testng-customsu

Apr 29, 2025 6:37:47 PM org.openqa.selenium.devtools.CdpVersionFinder findNearest
WARNING: Unable to find CDP implementation matching 135
Apr 29, 2025 6:37:47 PM org.openqa.selenium.chromium.ChromiumDriver lambda$new$5
WARNING: Unable to find version of CDP to use for 135.0.7049.115. You may need to

===============================================
Default Suite
Total tests run: 10, Passes: 10, Failures: 0, Skips: 0
===============================================


Process finished with exit code 0
```



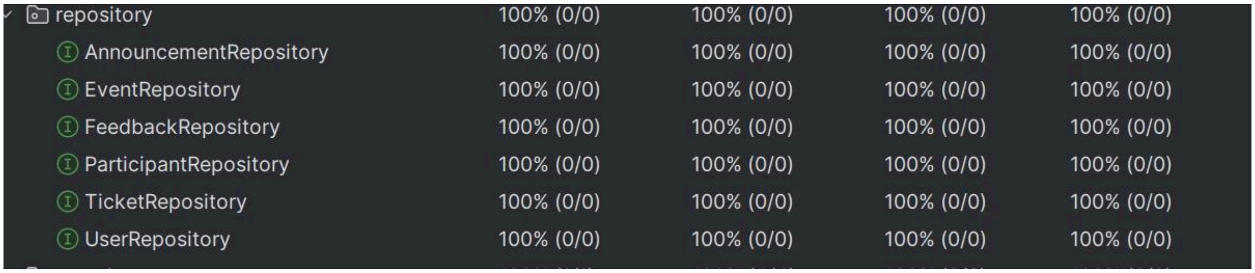
```
Default Suite                                10 sec 667 ms
  SE                                         10 sec 667 ms
    HomeAdminTest                            10 sec 667 ms
      testAdminWelcomeHeader                  1 sec 922 ms
      testFullReportCardButtonClick           2 sec 324 ms
      testFullReportCardButtonText            1 sec 568 ms
      testFullReportCardExists                1 sec 249 ms
      testFullReportDescriptionExists         1 sec 246 ms
```

```
Tests passed: 5 of 5 tests – 10 sec 667 ms

22:38:08.503 [main] INFO org.testng.internal.Utils -- [TestNG] Running:
  C:\Users\Haider\AppData\Local\JetBrains\IntelliJIdea2024.3\temp-testng-customsu

Apr 29, 2025 10:38:10 PM org.openqa.selenium.devtools.CdpVersionFinder findNeare
WARNING: Unable to find CDP implementation matching 135
Apr 29, 2025 10:38:10 PM org.openqa.selenium.chromium.ChromiumDriver lambda$new$
WARNING: Unable to find version of CDP to use for 135.0.7049.115. You may need to

===============================================
Default Suite
Total tests run: 5, Passes: 5, Failures: 0, Skips: 0
===============================================


Process finished with exit code 0
```

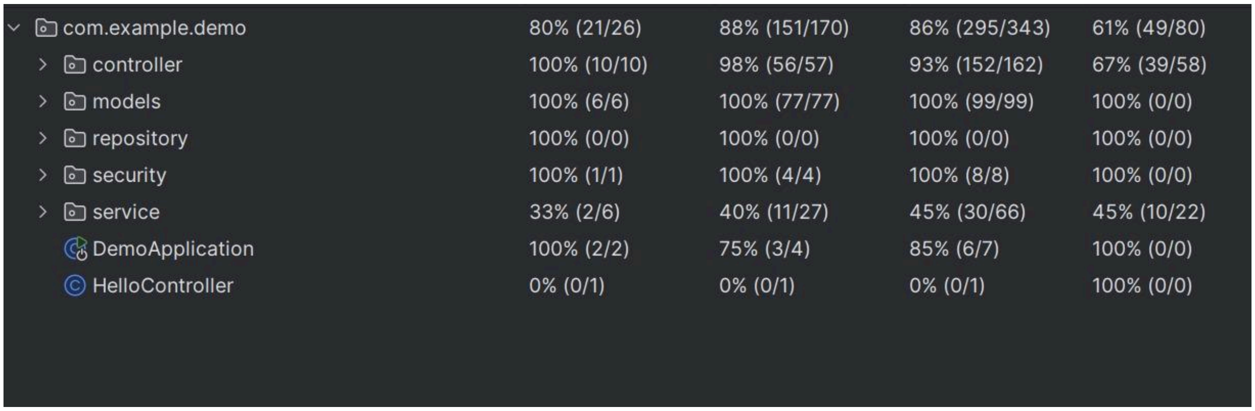
13. Test Cases - White Box



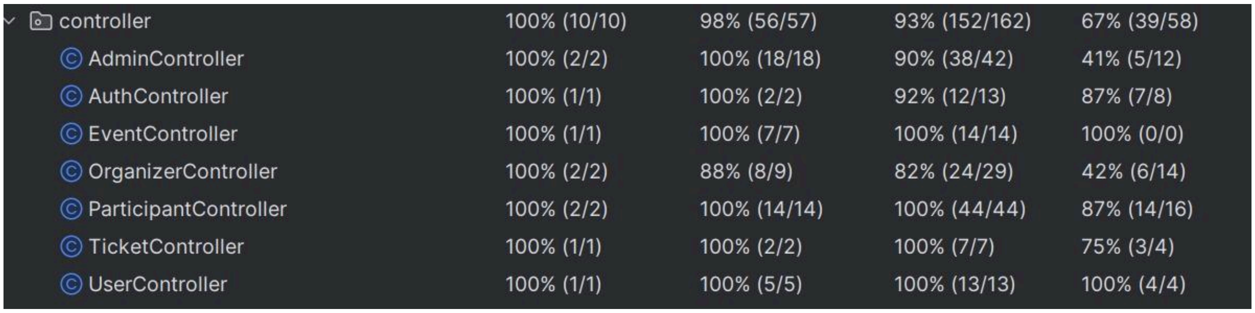
```
v ✓ demo (com.example)                      2 sec 779 ms
  > ✓ OrganizerControllerTest               1 sec 763 ms
  > ✓ EventControllerTest                          24 ms
  > ✓ DemoApplicationTests                         17 ms
  > ✓ FeedbackTest                                  1 ms
  > ✓ EventServiceTest                            286 ms
  > ✓ UserControllerTest                           54 ms
  > ✓ TicketTest                                    6 ms
  > ✓ ParticipantControllerTest                   206 ms
  > ✓ AuthControllerTest                          257 ms
  > ✓ AnnouncementServiceTest                       6 ms
  > ✓ UserTest
  > ✓ EventTest
  > ✓ AnnouncementTest
  > ✓ ParticipantTest
  > ✓ TicketControllerTest                         46 ms
  > ✓ AdminControllerTest                         113 ms
```



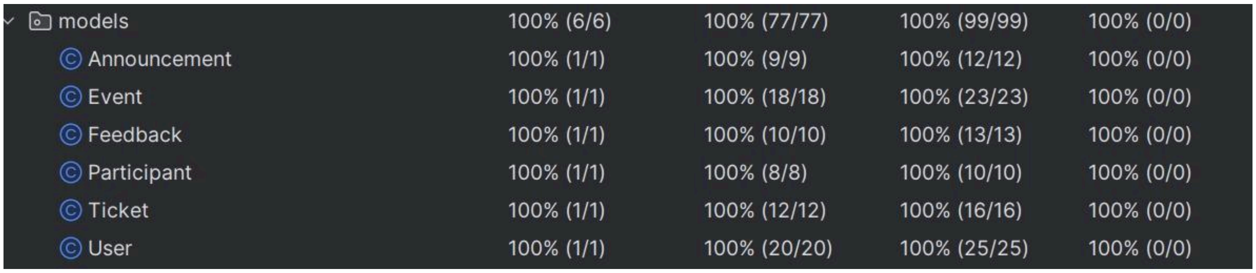
repository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)
AnnouncementRepository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)
EventRepository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)
FeedbackRepository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)
ParticipantRepository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)
TicketRepository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)
UserRepository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)



com.example.demo	80% (21/26)	88% (151/170)	86% (295/343)	61% (49/80)
controller	100% (10/10)	98% (56/57)	93% (152/162)	67% (39/58)
models	100% (6/6)	100% (77/77)	100% (99/99)	100% (0/0)
repository	100% (0/0)	100% (0/0)	100% (0/0)	100% (0/0)
security	100% (1/1)	100% (4/4)	100% (8/8)	100% (0/0)
service	33% (2/6)	40% (11/27)	45% (30/66)	45% (10/22)
DemoApplication	100% (2/2)	75% (3/4)	85% (6/7)	100% (0/0)
HelloController	0% (0/1)	0% (0/1)	0% (0/1)	100% (0/0)



controller	100% (10/10)	98% (56/57)	93% (152/162)	67% (39/58)
AdminController	100% (2/2)	100% (18/18)	90% (38/42)	41% (5/12)
AuthController	100% (1/1)	100% (2/2)	92% (12/13)	87% (7/8)
EventController	100% (1/1)	100% (7/7)	100% (14/14)	100% (0/0)
OrganizerController	100% (2/2)	88% (8/9)	82% (24/29)	42% (6/14)
ParticipantController	100% (2/2)	100% (14/14)	100% (44/44)	87% (14/16)
TicketController	100% (1/1)	100% (2/2)	100% (7/7)	75% (3/4)
UserController	100% (1/1)	100% (5/5)	100% (13/13)	100% (4/4)



models	100% (6/6)	100% (77/77)	100% (99/99)	100% (0/0)
Announcement	100% (1/1)	100% (9/9)	100% (12/12)	100% (0/0)
Event	100% (1/1)	100% (18/18)	100% (23/23)	100% (0/0)
Feedback	100% (1/1)	100% (10/10)	100% (13/13)	100% (0/0)
Participant	100% (1/1)	100% (8/8)	100% (10/10)	100% (0/0)
Ticket	100% (1/1)	100% (12/12)	100% (16/16)	100% (0/0)
User	100% (1/1)	100% (20/20)	100% (25/25)	100% (0/0)

14. Work Division Between Group Members

- **Ibtisam Shahzad:** Requirement Analysis, Scrum Management, Documentation
- **Haider Zia:**, Testing, System Architecture , Frontend UI

- **Ibrahim Asim:** Backend API Development, Integration, Database Management

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15. Lessons Learned

- Gained real-world experience of Agile methodology.
- Improved collaboration through Trello and GitHub.
- Understood challenges of full-stack development.
- Learned project management, time estimation, and risk handling.
