### 

**ASSIGNMENT REPORT**

**for**

**CS-3009: Software Engineering**

**FAST NUCES, SPRING 2025**

**1st March, 2025**

**PROJECT TITLE:**

ECHO (Student Societies Portal)

### **GROUP MEMBERS** Ataa Ur Rasool 21i-2987

### Hamza Ahmad Mir 22i-1003

### Ahmed Murtaza Malik 22i-0985

### **Scrum Team & Roles**

#### **1. Product Owner (PO)**

#### The Product Owner is responsible for defining the product vision, managing the Product Backlog, and ensuring that the project aligns with stakeholders' needs.

### Prioritizes backlog items based on business value.

### Ensures the development team understands requirements.

### Acts as a bridge between stakeholders and the development team.

#### **2. Scrum Master (SM)**

#### The Scrum Master ensures that the Scrum framework is followed and facilitates smooth sprint execution.

### Removes impediments blocking the team's progress.

### Facilitates Scrum events (Daily Stand-ups, Sprint Planning, Sprint Review, Retrospective).

### Coaches the team in Agile best practices.

#### **3. Development Team**

#### The Development Team consists of professionals responsible for designing, developing, and testing the system.

### Works collaboratively to implement Sprint Backlog items.

### Ensures deliverables meet the Definition of Done (DoD).

### Participates in sprint planning and reviews.

#### **4. Stakeholders**

#### Stakeholders include university administration, mentors, and student societies who will use the system.

### Provide feedback on the product.

### Help define requirements and validate system functionality.

### 

| **Problem Statement** | |
| --- | --- |
| **The problem of** | The lengthy and cumbersome process of registering student societies and getting event approvals in universities. |
| **Affects** | Student societies and university administration. |
| **The impact of which is** | Delays in society approvals and event organization, requiring physical paperwork and multiple signatures, leading to inefficiency. |
| **A successful solution would be** | An automated system that streamlines the registration and approval process for societies and events. The system would have separate views for students, societies, and administration, allowing digital approvals and reducing wait times significantly. This would enhance convenience for both students and administrators. Additionally, the project is highly feasible, as it can be implemented at the university level with minimal resource investment. |

**Product Backlog**

|  | **User**  **Story** | **Acceptance Criteria** |
| --- | --- | --- |
| **Story 1** | As a student, I want to comment on a post so that I can express my opinion. | Given that a student views a post, when they submit a comment, then it should be added and visible to others. |
| **Story 2** | As a society, I want to moderate comments on my posts so that I can ensure only appropriate content is displayed. | Given that a society posts, when a comment is posted on it, they should be able to moderate and remove inappropriate comments. |
| **Story 3** | As a student, I want to edit my comment so that I can correct mistakes. | Given that I have already posted a comment, when I edit it, then it should be updated accordingly. |
| **Story 4** | As a student, I want to delete my comment so that I can remove outdated or unnecessary remarks. | Given that a student has posted a comment, when they choose to delete it, then it should be removed from the post. |
| **Story 5** | As a student, I want to check my application status so that I know if I’ve been accepted. | Given that a student has applied to a society, when they check application status, then they should see whether it is pending, approved, or rejected. |
| **Story 6** | As a student, I want to cancel my application so that I can apply elsewhere or change my mind. | Given that a student has applied to a society, when they cancel the application, then it should be withdrawn. |
| **Story 7** | As a society, I want to review and approve/reject membership applications so that I control who joins. | Given that a society is managing applications, when they review an application, then they should be able to approve or reject it. |
| **Story 8** | As a student, I want to receive a confirmation prompt before leaving a society so that I don’t leave by mistake. | Given that a student is in a society, when they attempt to leave that society, then they should receive a confirmation prompt. |
| **Story 9** | As a society, I want to track the history of members who left so that I can maintain records. | Given that a society has members, when a member leaves, then their history should be recorded. |
| **Story 10** | As a student/society, I want to edit a post after publishing so that I can fix mistakes or update information. | Given that a user has posted content, when they edit the post, then it should be updated in the system. |
| **Story 11** | As a student/society, I want to delete a post so that I can remove irrelevant or outdated content. | Given that a user has posted content, when they delete the post, then it should be removed from the system. |
| **Story 12** | As an admin, I want to remove inappropriate posts so that the platform remains professional. | Given that an admin, when they find an inappropriate post, then they should be able to remove it. |
| **Story 13** | As a student/society, I want to attach images and files to my posts so that I can provide better context. | Given that a user is creating a post, when they upload images or files, then they should be attached and displayed correctly. |
| **Story 14** | As a student/society, I want to update my profile picture so that I can personalize my profile. | Given that a user is updating their profile, when they change their profile picture, then the new image should be saved and displayed. |
| **Story 15** | As a student/society, I want to update my bio so that I can share more about myself. | Given that a user is updating their profile, when they modify the bio, then it should be updated and displayed correctly. |
| **Story 16** | As a student/society, I want to change my password so that I can keep my account secure. | Given that a user is updating security settings, when they change the password, then it should be securely updated. |
| **Story 17** | As a society, I want to schedule announcements so that I can automate communication. | Given that a society, when they create an announcement and set a schedule, then it should be published at the specified time. |
| **Story 18** | As a society, I want to assign leadership roles so that responsibilities are clear. | Given that a user is managing a society, when they assign leadership roles, then they should be reflected in the system. |
| **Story 19** | As a student, I want to see my assigned role in a society so that I understand my responsibilities. | Given that a student in a society, when they check their profile, then they should see their assigned role. |
| **Story 20** | As a society, I want to modify my venue booking so that I can change the date or location if needed. | Given that a user has booked a venue, when they modify the booking, then the updated details should be saved. |
| **Story 21** | As a society, I want to cancel a venue booking so that I can free up space for others if I no longer need it. | Given that a user has booked a venue, when they cancel the booking, then it should be released for others to use. |
| **Story 22** | As a student, I want to receive event reminders so that I don’t miss important activities. | Given that a user has registered for an event, when the event is approaching, then I should receive a reminder notification. |
| **Story 23** | As a society, I want to track event attendance so that I can analyze participation. | Given that an event is happening, when attendees check in, then their attendance should be recorded. |
| **Story 24** | As an admin, I want to approve venue booking requests so that I can manage availability. | Given that a society submits a venue booking request, when an admin reviews it, they should be able to approve or reject it. |
| **Story 25** | As a student, I want to view a list of all societies so that I can decide which ones to join. | Given that a user on the societies portal, when they navigate to the society list, then they should see all available societies along with relevant details. |

### **Sprint Backlog – Login Functionality**

**Roles**

Ahmed Murtaza Malik - Scrum Master

Hamza Ahmad Mir - Developer

Ataa Ur Rasool - Developer

#### **User Story** As a student/society/admin, I want to log into the portal so that I can access my relevant dashboard and functionalities.

#### 

#### 

#### 

#### **Tasks**

1. *Design UI for Login Page*
   * Create a responsive login form (email/username & password fields).
   * Add "Forgot Password?" and "Sign Up" links.
2. *Set Up Database for User Authentication*
   * Create a Users table with fields (ID, Name, Email, Password, Role).
   * Hash passwords before storing them.
3. *Implement Backend Authentication*
   * Develop API endpoints for login verification.
   * Implement password hashing and validation.
4. *Integrate Login with Frontend*
   * Connect login form with backend authentication API.
   * Display appropriate error messages for invalid credentials.
5. *Implement Session Management*
   * Generate and store session tokens upon successful login.
   * Set session expiration and automatic logout.
6. *Role-Based Redirection*
   * Redirect users to their respective dashboards after login.
   * Ensure only authorized users can access restricted pages.
7. *Implement "Remember Me" Functionality*
   * Store login credentials securely for auto-login on next visit.
8. *Logging & Security Enhancements*
   * Log failed login attempts for security monitoring.
   * Prevent brute-force attacks using rate limiting.

**Acceptance Criteria**

* Given that a user enters valid credentials, when they click "Login," then they should be redirected to their respective dashboard.
* Given that a user enters incorrect credentials, when they attempt to log in, then they should see an error message.
* Given that a user is inactive for a certain period, when their session expires, then they should be automatically logged out.

**Github Link:** [Echo-Web](https://github.com/ahmedmurtazamalik/echo-web)