**Phase II: User Requirements and Application Specifications**
**Project: EpoLink**
**Submission Deadline: 26.03.2025, 23:59**

# 1. Chosen Development Model

**Development Model:** Agile
**Justification:**
Agile is chosen because it provides flexibility, allowing for iterative development and continuous feedback from stakeholders. Given the evolving nature of user requirements in EpoLink, Agile ensures quick adaptability to changes, delivering incremental improvements efficiently.

# 2. User Requirements

### a. Stakeholders:

- **Students:** Primary users who will interact with the platform for academic and social engagement.
- **Alumni:** Mentors who will guide students in career development.
- **University Administration:** Monitors and moderates discussions, events, and security.
- **Developers:** Responsible for building and maintaining the platform.

### b. User Stories:

1. **As a student, I want to find a study buddy based on my courses, so that I can collaborate and improve my academic performance.**
2. **As an alumnus, I want to mentor students through the platform, so that I can help them navigate their career paths.**
3. **As a student, I want to participate in interest-based forums, so that I can engage in academic and social discussions.**
4. **As a system administrator, I want to monitor and moderate forums, so that I can ensure compliance with community guidelines.**

## 3. Functional Requirements

**a. Brief Description:**

1. Users should be able to register and log in using their Epoka email.
2. Students should be able to join and create forums based on their interests.
3. The platform should allow students to search for study buddies based on their enrolled courses.
4. An AI-powered study assistant should provide academic support through lecture summaries and question answering.
5. Students should be able to post and view lost-and-found items.
6. An event calendar should display upcoming university and social events.

**b. Acceptance Criteria:**

- Users can log in with their Epoka email and access their profiles.
- Forums can be created and moderated, with at least 50 active discussions at any given time.
- Study buddy matches should be displayed based on course enrollment data.
- AI-powered study assistant should be able to summarize lectures with at least 85% accuracy.
- Lost-and-found items should have timestamps and user contact details.
- Events should have categories, descriptions, and registration options.

## 4. Non-Functional Requirements

**a. Brief Description:**

1. The platform should support at least 500 concurrent users.
2. The user interface should be simple and intuitive.
3. The platform should load within 3 seconds for an optimal user experience.
4. User data should be securely encrypted.

**b. Acceptance Criteria:**

- System maintains performance with 500+ users online.
- Navigation through different sections takes no more than 2 clicks.
- Pages load within 3 seconds under normal server conditions.
- User passwords and sensitive data are encrypted.

# 5. Application Specifications

## a. Architecture:

- **Frontend:** HTML, CSS, JavaScript for a dynamic UI.
- **Backend:** PHP for handling server-side logic.
- **Database:** MySQL for structured data storage.
- **AI Module:** Python-based AI assistant for academic support.
- **Hosting:** Apache server for deployment.

## b. Database Model:

Tables include:

- **Users:** (ID, Name, Email, Role, Profile Picture)
- **Forums:** (Forum ID, Title, Description, Created By)
- **Messages:** (Message ID, Forum ID, User ID, Timestamp, Content)
- **Study Buddies:** (Student ID, Course ID, Availability)
- **Events:** (Event ID, Name, Date, Location, Description)
- **Lost & Found:** (Item ID, Description, Finder ID, Timestamp)

## c. Technologies Used:

- **Frontend:** HTML, CSS, JavaScript for a responsive user interface.
- **Backend:** PHP for handling business logic.
- **Database:** MySQL for relational data management.
- **AI:** Python-based AI for academic support.
- **Hosting:** Apache for web deployment.

## d. User Interface Design:

- **Login Page:** Simple email and password authentication.
- **Dashboard:** Quick access to forums, study buddy search, and event calendar.
- **Forum Page:** Threaded discussions with user moderation.
- **AI Study Assistant:** Chat-style interface for academic support.

## e. Security Measures:

1. **Authentication:** OAuth 2.0 for secure login via Epoka email.
2. **Data Encryption:** AES-256 for database security.
3. **Role-Based Access:** Ensures different permissions for students, alumni, and admins.
4. **DDoS Protection:** Cloud-based firewall to prevent attacks.
5. **Activity Monitoring:** Logs user actions to prevent abuse.

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