

StudyBuddy: Software Engineering Project

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1 Introduction

StudyBuddy is a web-based collaborative platform designed to support university students in organising study activities, connecting with peers, and improving academic collaboration and wellbeing.

The system enables students to:

- Create personal profiles containing course, year, and module information.
- Search for study partners based on module and availability.
- Send and manage study session requests.
- Provide ratings and feedback.
- Report or block inappropriate users.

The project is developed using Agile Scrum methodology and integrates ethical, security, and accessibility considerations throughout its lifecycle.

2 Project Description

StudyBuddy is a group software engineering project designed to support university students in organising their study activities, connecting with peers, and improving collaboration and wellbeing. Users can create an account in order to find other people to study or chat with based on a variety of categories, such as the type of course a user is studying or what kind of person they would like to study with. Users can send chat requests to study together, search for people via different filtering categories, and provide ratings for people they have studied with.

3 Team Code of Conduct

To support a productive and respectful working environment, our team agrees to follow the principles outlined below. These guidelines define how we interact, collaborate, and manage our responsibilities throughout the project.

3.1 Communication Standards

- Communicate clearly, respectfully, and professionally with all team members.
- Ensure that everyone has the chance to share ideas, raise concerns, and give feedback.
- Reply to messages and emails from teammates within a 24-hour period.

3.2 Teamwork and Collaboration

- Contribute fairly to group work and support one another in completing tasks.
- Take responsibility for individual duties while holding each other accountable as a team.
- Show flexibility and understanding toward the different commitments and circumstances of team members.

3.3 Compliance with Rules and Policies

- Follow all project-related rules and expectations outlined in this document and elsewhere.
- Act in accordance with University policies and academic regulations at all times.

3.4 Attendance, Availability & Exceptional Circumstances

All team members are expected to attend scheduled lectures, labs, sprint reviews, and group presentations. The affected team member must inform the group as early as possible (at least 12 hours in advance) via WhatsApp.

3.5 Managing Non-Compliance

If a team member is unable to attend a meeting or lab, they can receive a summary. Continued absence without prior communication may be reported to the module tutor. Ongoing failure to complete assigned tasks will be discussed as a group.

4 Scrum Practices

1. **Sprint Planning:** Every timetabled lesson or whenever requested, the team will meet to decide which tasks will be completed.
2. **Sprint Review:** At the end of each sprint, the team will review work, gather feedback, and identify improvements.
3. **Daily Stand-ups:** Weekly meetings at the library or via Microsoft Teams focusing on completed work and current challenges.

4.1 Defined Roles and Responsibilities

Scrum Master: Coordinate and guide the Scrum process. Regularly check progress and address obstacles.

Project Owner: Manage and prioritize the project backlog. Communicate the project vision and objectives.

5 Ethical Issues Identified – StudyBuddy

5.1 Introduction

StudyBuddy must be ethically grounded and aligned with professional standards. Ethical risks emerge from poor requirements, ambiguous consent, weak security, and exclusionary interface decisions.

5.2 Data Privacy and Data Protection (UK GDPR)

StudyBuddy handles direct identifiers (name, email) and indirect identifiers (timetable patterns, modules). Mitigation includes data minimisation, purpose limitation, storage limitation, and integrity/confidentiality.

5.3 Informed Consent and Transparency

Users must understand what data is collected, how matching works, retention periods, and how to delete accounts.

5.4 Security, Confidentiality, and Secure Engineering

Security is an ethical duty. Mitigation includes strong hashing, parameterized queries, and environment variable management.

5.5 User Safety, Harassment, and Moderation

Risks include harassment and unwanted contact. The platform incorporates a Code of Conduct, reporting mechanisms, and block/mute features.

5.6 Inclusivity and Accessibility

Accessibility is a core expectation. Key concerns include readability, keyboard navigation, and responsive design following WCAG guidance.

5.7 Bias, Fairness, and Matching Algorithms

Matching can introduce bias. We define fair matching criteria (subject, level, availability) and provide transparency.

5.8 Wellbeing Features and Mental Health Sensitivity

Wellbeing features must not imply clinical authority. Safeguards include careful language and signposting to official resources.

5.9 Academic Integrity and Intellectual Property

Mitigations include clear rules against plagiarism and academic misconduct, and reporting mechanisms for direct answer exchanges.

6 User Stories

- **US1 – Create profile:** Create a profile with course, year, and modules.
- **US2 – Login to account:** Secure profile and activity.
- **US3 – Search by module:** Find someone studying the same subject.
- **US4 – View user profiles:** Decide if a student is a good match.
- **US5 – Send study request:** Organise a study session.
- **US6 – Accept or decline requests:** Control who you study with.
- **US7 – Dashboard:** See upcoming sessions and pending requests.
- **US8 – Filter by availability:** Find someone free at similar times.
- **US9 – Ratings and feedback:** Leave feedback after a session.
- **US10 – Report or block a user:** Safety against inappropriate behavior.

7 Project Diagrams

This section contains the key design diagrams for the StudyBuddy system, sourced directly from the project's design documentation.

7.1 Use Case Diagram

The Use Case diagram illustrates the primary interactions between students and the StudyBuddy system.

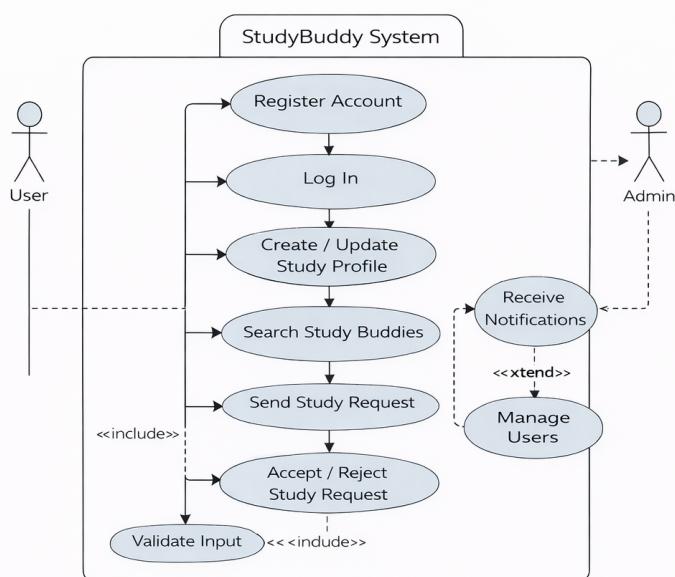


Figure 1: Use Case Diagram –
StudyBuddy System

Figure 2: Activity Diagram – Search for
Study Buddies and Send Study Request

Figure 1: StudyBuddy Use Case Diagram

7.2 Activity Diagram

The Activity Diagram shows the workflow of key system processes.

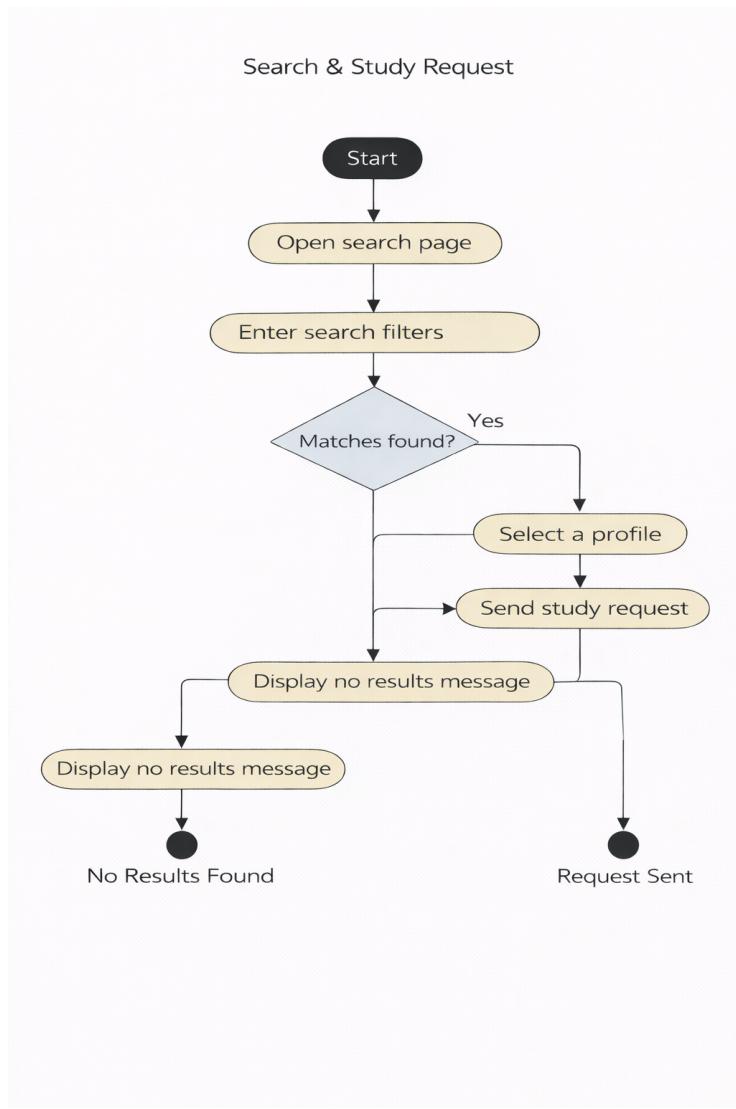


Figure 2: StudyBuddy Activity Diagram

7.3 System Flowchart

The flowchart details the logic and decision paths within the application.

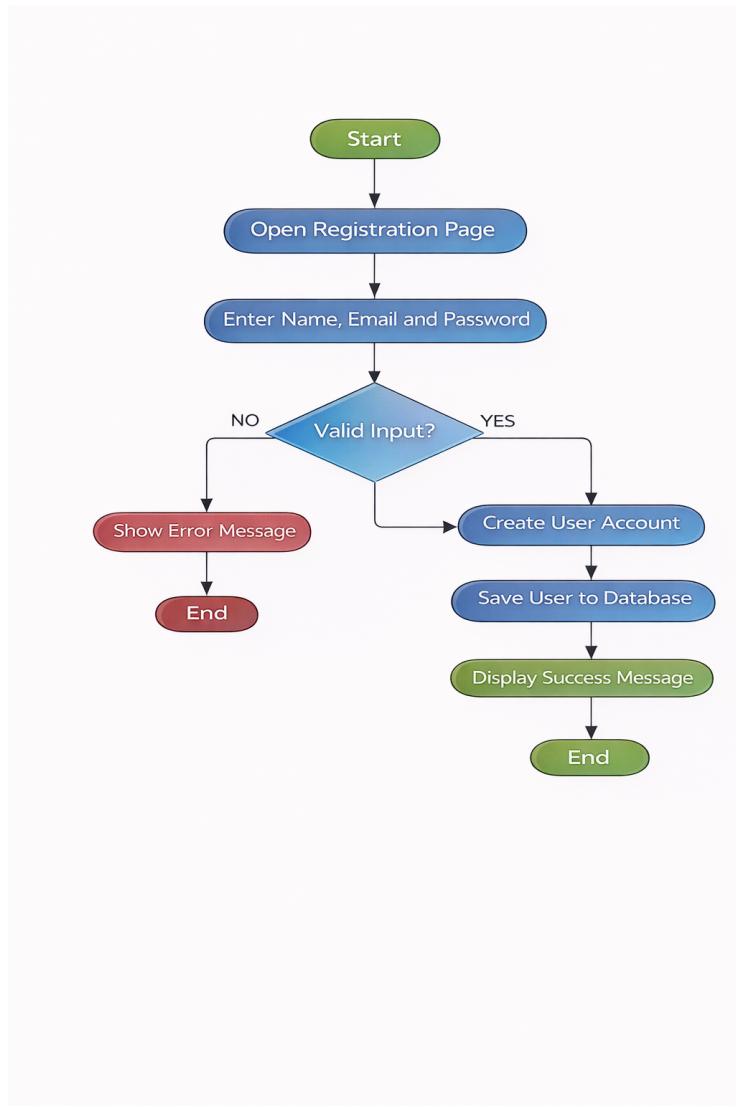


Figure 3: StudyBuddy System Flowchart