

CS 4090 – Assignment 1

User Stories, EPICs, and Story Mapping for *ClassMatch*

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Course: CS 4090 Software Engineering **Assignment:** Comprehensive Product Backlog

Application: ClassMatch – Study Group Matchmaking Platform

This document applies user stories, EPICs, and story mapping to design a comprehensive product backlog for ClassMatch, a platform that helps students discover and connect with classmates in the same courses for effective study groups.

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Assignment Overview

This submission follows the assignment structure:

1. Part 1: User Research & Personas
2. Part 2: User Stories (20 minimum with acceptance criteria for at least 12 stories), INVEST and ethics justifications
3. Part 3: EPICs Organization (4–6 EPICs)
4. Part 4: User Story Mapping (visual & legend); Mermaid source included
5. Part 5: MVP Definition & Planning
6. Contribution Statement

1 Part 1: User Research & Personas (10 pts)

Persona 1 – Avery Tran (Undergraduate Student)

Age: 20

Background: Sophomore CS major; large lectures and hybrid sections; part-time job.

Goals: Find compatible classmates for study groups, share notes, prep for exams.

Pain Points: Hard to meet peers in large/online classes; group chats are noisy.

Tech Comfort: High (web, campus LMS, messaging tools).

Context of Use: Evenings via laptop to join groups for upcoming exams.

Persona 2 – Jordan Lee (Group Creator / Study Leader)

Age: 22

Background: Senior Business Analytics student; organized, proactive.

Goals: Create focused groups early; keep groups productive and on-schedule.

Pain Points: Managing size, expectations, and scheduling.

Tech Comfort: High (scheduling, Discord/Slack).

Context of Use: Weekends to create/curate groups for capstone courses.

Persona 3 – Taylor Morgan (Group Admin / Peer Moderator)

Age: 24

Background: Graduate TA for intro programming; informal moderation role.

Goals: Maintain safe, inclusive environment; ensure ADA-compliant access.

Pain Points: Handling disruptive or inactive members; triaging reports.

Tech Comfort: Advanced (LMS, moderation workflows).

Context of Use: Weekly moderation, responding to reports, keeping groups healthy.

Note on Scope Alignment ClassMatch focuses on student registration, profile setup, course selection/creation, classmate matching with filters (availability/section), opt-in connections, group creation, and simple moderation—aligned with our (semester) scope.¹

2 Part 2: User Stories (40 pts)

Conventions

Each story uses the format: *As a [user], I want [capability], so that [benefit]*. We apply INVEST and IEEE-CS/ACM ethics justifications briefly per story set. Story points use Fibonacci (1,2,3,5,8). Priorities: High/Medium/Low.

Student User Stories

Story #1: Onboarding Form

As a student, I want a signup form to enter my info and study preferences, so that I can be matched with relevant groups.

Acceptance Criteria:

- Given the signup page, when I complete required fields and submit, then my profile saves and I see a confirmation.
- Given missing required fields, when I submit, then I see clear inline validation messages.

Points: 3 *Priority:* High

Story #2: Real-Time Matchmaking

As a student, I want real-time matchmaking, so that I can easily find compatible classmates to study with.

Acceptance Criteria:

- Given my completed profile, when I open the Matches view, then I see students in my same courses.
- Given filters (e.g., availability/section), when I apply them, then the results update immediately.

Points: 5 *Priority:* High

Story #3: Weekly Availability

As a student, I want to set my weekly availability, so that I can find groups that meet when I'm free.

Acceptance Criteria:

- Given a calendar UI, when I select time blocks and save, then my profile reflects those times.
- Given changed availability, when I update and save, then future matches respect the new times.

Points: 3 *Priority:* High

¹Concept and scope informed by Group 10 project proposal.

Story #4: Study Location Preference

As a student, I want to indicate my preferred study location, so that I can join convenient groups.

Points: 2 *Priority:* Medium

Story #5: Acceptance Notifications

As a student, I want to receive a notification when I'm accepted into a group, so that I can participate right away.

Acceptance Criteria:

- Given a pending request, when it's accepted, then I receive an in-app notification and an email (if enabled).

Points: 2 *Priority:* Medium

Story #6: Accessible Interface (ADA)

As a student with disabilities, I want the app to be ADA-compliant, so that I can easily navigate it.

Acceptance Criteria:

- Given keyboard navigation, when I tab through interactive elements, then the focus order is logical and visible.
- Given screen readers, when I browse, then semantic landmarks and alt text are provided for key UI components.

Points: 5 *Priority:* High

Group Creator User Stories

Story #7: Create Group

As a group creator, I want to create a new study group for a specific course, so that I can invite other students.

Acceptance Criteria:

- Given the Create Group form, when I enter course, section, and title and submit, then the group is listed and searchable.

Points: 3 *Priority:* High

Story #8: Member Limit

As a group creator, I want to set a maximum number of members, so that the group remains effective.

Acceptance Criteria:

- Given a set limit, when the group reaches capacity, then new joiners see a "group full" state and can waitlist.

Points: 2 *Priority:* Medium

Story #9: Group Description

As a group creator, I want to add a description, so that interested students understand the group's

focus.

Points: 2 Priority: Medium

Group Admin User Stories

Story #10: Remove Members

As a group admin, I want to remove inactive or disruptive members, so that the group stays productive.

Acceptance Criteria:

- Given a member list, when I select a member and click Remove, then they are removed and receive a notice.
- Given an audit need, when I view history, then I can see who removed whom and when.

Points: 3 Priority: Medium

Story #11: Reporting System

As a group admin, I want to receive reports of inappropriate behavior, so that I can take action.

Acceptance Criteria:

- Given a submitted report, when I open the queue, then I can view details and take actions (warn, remove, block).

Points: 3 Priority: Medium

Story #12: Approve Requests

As a group admin, I want to approve join requests, so that I can maintain group integrity.

Acceptance Criteria:

- Given pending requests, when I click Approve/Reject, then the user is notified and the roster updates.

Points: 2 Priority: Medium

Additional Supporting Stories

Story #13: Navigation Bar

As a student, I want a navigation bar to move between pages easily, so that I can access key areas quickly.

Acceptance Criteria:

- Given any app page, when I use the navbar, then I can reach Profile, Courses, Matches, Groups, and Settings.

Points: 2 Priority: Medium

Story #14: Browse/Create Classes

As a student, I want to browse a catalog or create a missing class/section, so that I can reflect my real enrollment.

Acceptance Criteria:

- Given no existing entry, when I create a class/section with required fields, then it becomes selectable and reviewable.

Points: 3 *Priority:* High

Story #15: Edit Profile

As a student, I want to edit my profile, so that I can keep preferences up to date.

Points: 2 *Priority:* Medium

Story #16: Messaging

As a group member, I want to send messages to my group, so that we can coordinate study sessions.

Acceptance Criteria:

- Given a group page, when I post a message, then members can view it and react/reply.

Points: 3 *Priority:* Medium

Story #17: Resource Sharing

As a group member, I want to view and share resources, so that we can collaborate efficiently.

Points: 2 *Priority:* Low

Story #18: Secure Login

As a student, I want secure login (JWT-based), so that my account is protected.

Acceptance Criteria:

- Given valid credentials, when I sign in, then I receive a session and access my dashboard.
- Given invalid credentials, when I sign in, then I see a clear error without leaking details.

Points: 3 *Priority:* High

Story #19: Archive Inactive Groups

As a group admin, I want to archive inactive groups, so that listings stay current.

Acceptance Criteria:

- Given inactivity thresholds, when a group meets criteria, then I can archive and later restore if needed.

Points: 2 *Priority:* Low

Story #20: My Groups Dashboard

As a student, I want to view my active groups on a dashboard, so that I can access them quickly.

Acceptance Criteria:

- Given memberships, when I open Dashboard, then I see cards for each group with next meeting info.

Points: 3 *Priority:* Medium

INVEST and Ethics Summary

INVEST: Each story is independent (minimal coupling), negotiable, valuable (clear “so that”), estimable (Fibonacci), small (2–5 points typical), and testable (acceptance criteria on 12+ stories).

Ethics: Stories emphasize inclusivity, privacy, and non-harm: ADA compliance (#6), respectful moderation (#10–#12), clear consent via opt-in groups and notifications (#5), least data for purpose (#1–#3). These align with IEEE-CS/ACM Code of Ethics (public good, fairness, privacy, quality).

3 Part 3: EPICs Organization (25 pts)

EPIC 1: Account & Profile Management

As a student, I want to create/manage my profile, so that my preferences improve matching.

Stories: #1, #3, #4, #6, #15, #18

Justification: Defines user identity, accessibility, and security—prerequisites for effective matching.

EPIC 2: Matchmaking & Discovery

As a student, I want to discover compatible classmates, so that I can form effective study groups.

Stories: #2, #5, #14, #20

Justification: Core value of ClassMatch; connects profiles and course data to suggested peers and groups.

EPIC 3: Group Creation & Management

As a group creator, I want tools to build and maintain groups, so that collaboration stays organized.

Stories: #7, #8, #9, #10, #11, #12, #19

Justification: Encompasses membership control, moderation, and lifecycle.

EPIC 4: Communication & Engagement

As a group member, I want in-app communication, so that collaboration is seamless.

Stories: #16, #17

Justification: Enables coordination and sharing that keep study groups active.

4 Part 4: User Story Mapping (25 pts)

Visual Story Map (Mermaid Source)

The diagram below shows 5–7 major user activities on the horizontal axis and priority lanes vertically (Essential, Important, Nice-to-have).

Legend: Essential = MVP “walking skeleton”; Important = next sprint; Nice-to-have = later release.

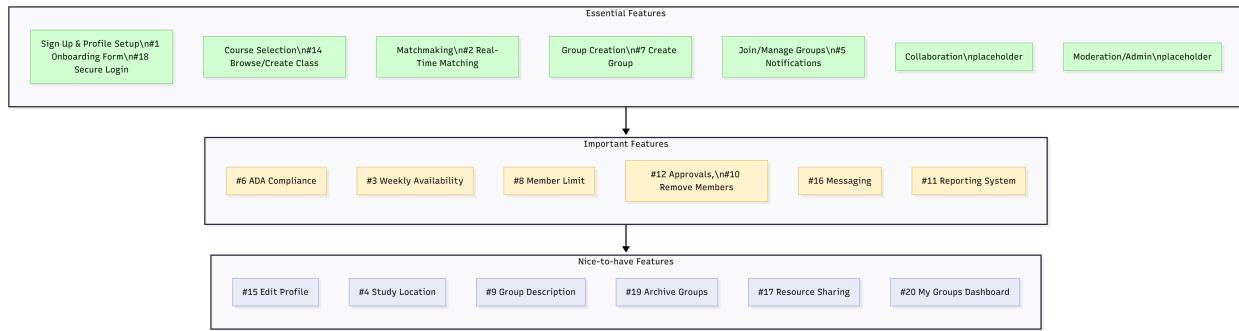


Figure 1: User Story Map for ClassMatch

Walking Skeleton (Essential Path)

- Sign Up & Profile Setup: #1, #18
- Course Selection: #14
- Matchmaking: #2
- Group Creation: #7
- Join/Manage: #5

This path allows a new student to onboard, represent their courses, find matches, create or join a group, and get notified.

5 Part 5: MVP Definition & Planning (10 pts [Bonus])

MVP Core Value

Enable students to easily match with peers in shared classes and form functional study groups.

Essential User Stories for MVP

- #1 Onboarding Form — enables user setup and preferences.
- #2 Real-Time Matchmaking — core value delivery.
- #3 Weekly Availability — improves quality of matches.
- #5 Notifications — drives engagement and conversion to participation.
- #7 Create Group — allows forming study groups when needed.

MVP Success Criteria

- 80% of new users complete onboarding and match within 5 minutes.
- Users can form a study group and coordinate a session without admin help.

Future Release Planning

Release 2 (Enhanced): #16 Messaging, #11 Reporting, #15 Edit Profile, #4 Study Location, #8 Member Limit.

Release 3 (Advanced): #17 Resource Sharing, #19 Archive Groups, #20 Dashboard, broader accessibility/quality refinements.

Contribution Statement (Required)

I contributed 45% to this assignment. My work included synthesizing personas, writing and structuring 20 user stories, grouping them into EPICs, designing the story map, and defining MVP justification. My teammates contributed the remaining 55% by researching user needs, drafting initial story ideas, and refining group admin perspectives.