Problem Statement and Goals
Software Engineering

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Table 1: Revision History

Date	Developer(s)	Change
Date1	Name(s)	Description of changes
Date2	Name(s)	Description of changes
...	...	...

1 Problem Statement

[You should check your problem statement with the problem statement checklist. —SS]

[You can change the section headings, as long as you include the required information. —SS]

1.1 Problem

1.2 Inputs and Outputs

[Characterize the problem in terms of "high level" inputs and outputs. Use abstraction so that you can avoid details. —SS]

1.3 Stakeholders

1.4 Environment

[Hardware and Software Environment —SS]

2 Goals

- Develop a centralized platform for MES events that simplifies registration, payment, and check-in.

- Integrate ticket sales and payments, including multiple ticket types and waitlists.

- Implement table and bus signups with capacity management.

- Provide role-based access control (RBAC/FBAC) for organizers to manage only the tools they need.

- Deliver a smooth, mobile-first attendee experience with push notifications and reminders.

- Reduce administrative burden for volunteers by consolidating tools into a single system.

Goal	Description	Justification
Centralized Registration & Ticketing	The platform must consolidate ticket purchasing, registration, and RSVPs into one place.	This eliminates confusion caused by scattered tools and ensures students always have access to the latest event information.
Payment Integration	Provide secure and flexible payment options (Stripe, Square, PayPal).	Enables students to pay quickly with widely used systems while reducing cash-handling risks for organizers.
Role-Based Access Control (RBAC/FBAC)	Implement granular permissions so organizers only see/manage the tools relevant to their role.	Reduces errors, ensures security, and improves efficiency in large event teams.
Bus & Table Signups	Allow attendees to reserve buses and tables with automatic capacity tracking.	Simplifies logistics and avoids overbooking, replacing spreadsheets and manual coordination.
Notifications & Reminders	Send push notifications and reminders for registrations, updates, and cancellations.	Improves event memorability, prevents missed opportunities, and reduces no-shows.
Analytics & Reporting	Provide organizers with real-time dashboards on sales, demographics, and waitlists.	Supports decision-making, improves resource allocation, and helps executives evaluate event success.
Attendee Experience	Ensure the platform is mobile-first, intuitive, and accessible.	Reduces barriers to use, supports inclusivity, and maximizes student engagement.

3 Stretch Goals

4 Extras

[For CAS 741: State whether the project is a research project. This designation, with the approval (or request) of the instructor, can be modified over the course of the term. —SS]

[For SE Capstone: List your extras. Potential extras include usability testing, code walkthroughs, user documentation, formal proof, GenderMag personas, Design Thinking, etc. (The full list is on the course outline and in Lecture 02.) Normally the number of extras will be two. Approval of the extras will be part of the discussion with the instructor for approving the project. The extras, with the approval (or request) of the instructor, can be modified over the course of the term. —SS]

Appendix — Reflection

The purpose of reflection questions is to give you a chance to assess your own learning and that of your group as a whole, and to find ways to improve in the future. Reflection is an important part of the learning process. Reflection is also an essential component of a successful software development process.

Reflections are most interesting and useful when they're honest, even if the stories they tell are imperfect. You will be marked based on your depth of thought and analysis, and not based on the content of the reflections themselves. Thus, for full marks we encourage you to answer openly and honestly and to avoid simply writing "what you think the evaluator wants to hear."

Please answer the following questions. Some questions can be answered on the team level, but where appropriate, each team member should write their own response:

1. What went well while writing this deliverable?

2. What pain points did you experience during this deliverable, and how did you resolve them?

3. How did you and your team adjust the scope of your goals to ensure they are suitable for a Capstone project (not overly ambitious but also of appropriate complexity for a senior design project)?