

Campus Companion

Team 10

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# **Software Requirements Specification Document**

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# 1 Purpose

## **Background information**

Starting college can be overwhelming, especially when students don't know their way around campus. While CSUSM already offers an app, it falls short in helping students with everyday needs like finding bathrooms or event locations. This is where **Campus Companion** steps in, designed specifically to address these gaps.

**Campus Companion** aims to help students navigate campus effortlessly by providing directions to the nearest bathroom and events. Unlike the current CSUSM app, which focuses on general campus information, **Campus Companion** specializes in offering real-time updates and details like restroom availability and cleanliness ratings, creating a more personalized and practical experience for students.

## **Why a New System is Needed**

Although the CSUSM app provides basic information about campus, it lacks the specialized, real-time features that students need for everyday campus life. Here's why **Campus Companion** is necessary:

- No Real-Time Updates on Facilities: The existing CSUSM app does not provide updates on bathroom availability or cleanliness, leading to inconvenient and sometimes frustrating experiences for students. **Campus Companion** solves this by giving live information on nearby facilities.
- Navigational Challenges for New Students: Given the constant influx of new freshmen and transfer students, many new students find it hard to locate key spots like bathrooms and event venues. **Campus Companion** simplifies this with precise, step-by-step directions, making the campus feel more accessible.
- Lack of Event Awareness and Navigation: While CSUSM's app lists some events, it doesn't focus on guiding students to them or providing detailed information. **Campus Companion** highlights school events and their exact locations and ensures students never miss out again.

## **Objectives of Campus Companion**

The main goal of **Campus Companion** is to provide a more connected and informed campus experience. Here's what we aim to achieve:

- Improve Campus Navigation: **Campus Companion** will offer clear, real-time directions to bathrooms, and event locations, making it easier for students to find what they need.

- Provide Real-Time Facility Information: The app will include live updates on bathroom availability and cleanliness ensuring students can make informed choices without wasting time.
- Boost Event Engagement: **Campus Companion** will ensure students are aware of all school events, providing details and directions, so they can easily join in and feel more connected to their campus.
- Focus on User Experience: We want **Campus Companion** to be intuitive and easy to use, offering a friendly, student-centric experience that fills the gaps left by the existing CSUSM app

## 2 Scope

**System Name:** Campus Companion

### **Goals of Campus Companion:**

**Campus Companion** aims to enhance the daily lives of CSUSM students by providing a comprehensive, real-time navigation and campus resource tool. The software is designed to address specific issues faced by students, focusing on accessibility, convenience, and engagement. The main goals of the software include:

- Simplify Campus Navigation: **Campus Companion** will guide students to key locations on campus, such as bathrooms and event venues, using precise GPS-based directions.
- Provide Real-Time Facility Updates: Students will receive live information on the status of facilities, including bathroom availability and cleanliness ratings, allowing them to make informed decisions.
- Boost Event Awareness and Attendance: **Campus Companion** will highlight upcoming campus events, providing detailed information and turn-by-turn navigation to event locations, and encouraging student involvement.
- Offer a User-Friendly Experience: Designed with students in mind, **Campus Companion** will prioritize ease of use with intuitive navigation.

### **Application and Potential Benefits** of Campus Companion

**Campus Companion** will be a web application that integrates GPS navigation, real-time data feeds, and user input to deliver a seamless campus experience. Here's how the app will be applied and the potential benefits:

- Real-Time Navigation Assistance:

Application: Using the student's location, **Campus Companion** will provide real-time directions to the nearest bathrooms and events. It will offer the quickest paths.

Benefits: This feature will reduce time spent searching for facilities, alleviate the stress of getting lost, and help new students adapt quickly to campus life.

- Detailed Facility Information:

Application: **Campus Companion** will display current information on bathroom conditions, such as which bathrooms are available and cleanliness ratings submitted by other users, allowing staff to determine if student needs are being properly met or need to be examined further.

Benefits: Students can avoid overcrowded or unclean facilities, enhancing their comfort and convenience while on campus.

- Event Discovery and Engagement:

Application: **Campus Companion** will feature a dedicated section for campus events, showing what's happening, when, and where, along with navigation support to event locations.

Benefits: By making it easier to find and attend events, the app will help students stay informed and connected, increasing their participation and fostering a sense of community.

- User Feedback Integration:

Application: Students can provide feedback on the facilities they use, such as rating bathroom cleanliness, which will be reflected in the app to help other users make better choices.

Benefits: Continuous feedback helps keep the app's data accurate and relevant, while also encouraging campus management to maintain high standards for facilities and events.

● Several key features:

- Bathroom ratings
- Availability
- Resource Availability
- Locations
- Downtime/Maintenance

● Goals:

- Ability to sort restrooms by cleanliness, distance, et cetera.
- Allow janitorial staff to address more urgent needs.
- Allow users to rate bathrooms from 1 to 5 stars.

## 3 User characteristics

### 3.1 Key users

**Key users** will be all CSUSM students and staff, focusing on new students/staff (Freshman and transfer students).

**User Role Responsibilities:**

- Use the application to locate resources on campus such as bathrooms and events.
- Provide feedback on the cleanliness of the bathrooms.
- Utilize the application to view details regarding campus events, and be able to navigate using the app's navigation system.

**Subject Matter Experience:**

*Novice* - New students/staff, including freshman and transfer students, could benefit from the campus navigation system due to their unfamiliarity with the campus layout.

*Journeyman* - Continuing students who enjoy having real-time updates regarding the availability of restrooms, and details of events on campus.

**Technological Experience:** *Journeyman*: The majority of students have had experience with similar applications that also allow the user to view details regarding events and utilize navigation systems, this makes Campus Companion relatively easy and intuitive to the user.

**Attitude Toward Technology:** The majority of students are familiar with mobile applications and have a positive attitude towards technology.

**Education:** Campus Companion will mostly be used by CSUSM students, hence, they have college-level education.

**Age Group:** The target age group is CSUSM students most of which range between 18 - 25.

### 3.2 Secondary users

**Secondary Users** will be Maintenance, Janitorial Staff,

**Maintenance and janitorial staff:**

**User Role Responsibilities:**

- Announce any issues with restrooms and report when they are unavailable due to being under maintenance.
- Use the software to update the status of the restrooms, this includes maintenance, resources, availability, and cleanliness.

**Subject Matter Experience:** *Journeyman* - Maintenance and Janitorial staff are familiar with facility management systems and can update the status of the restrooms as they see fit.

**Technological Experience:** *Novice* - Campus Companion has a friendly and easy-to-use interface, not requiring a high level of technological expertise.

**Physical Disabilities:** Personnel with disabilities such as mobility issues will be able to use the software as normal since it would be easy and would require little time to update the status of the restrooms.

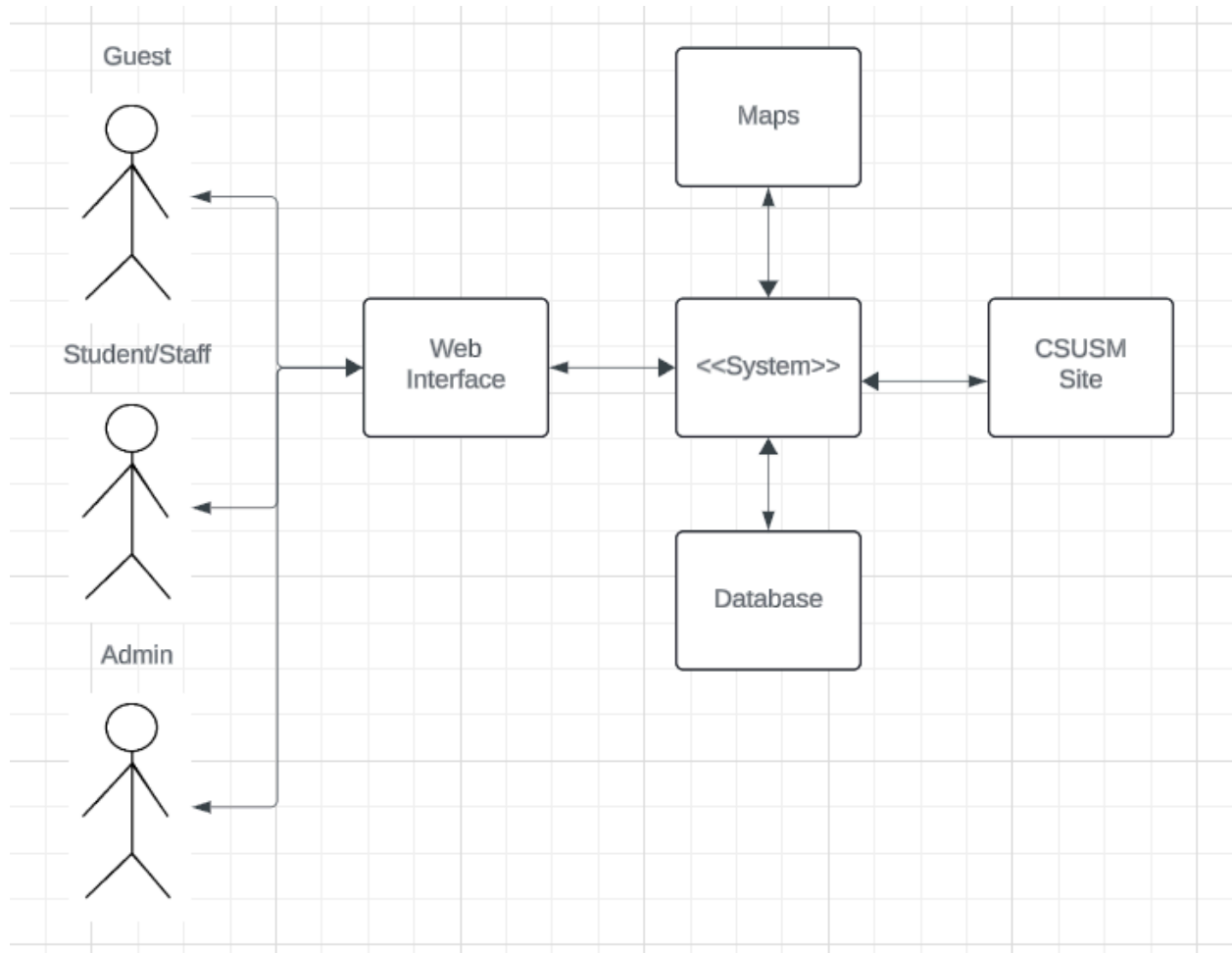
**Attitude Toward Technology:** The attitude towards technology of the maintenance and janitorial staff varies, which is why the software has a simple user interface.

**Education:** The level of education varies from one person to another, no specific level of education is required to work the app.

**Age Group:** The age of maintenance and janitorial staff widely varies, mostly from the ages of 18 - 65

## 4 Product perspective

### 4.1 System Context



## 4.2 User interfaces

The screen format for Campus Companion includes a combination of images, CSS for styling, HTML for structure, and text for displaying content and user interactions.

Users should have the ability to return to a previous page.

Unauthorized users are met with error messages prompting for a sign-on.

All users should be able to view club events and restrooms from the web interface.

Authorized users should be able to submit reviews.

The website should be viewable on mobile and desktop web browsers.



#### 4.3 Software interfaces

N/A

#### 4.4 Deployment requirements

N/A

### 5 Assumptions and Dependencies

Users should possess novice-level proficiency with Google/Apple Maps.

### 6 Specific requirements

#### 6.1 System Functional Requirements

R.1.1 The system shall allow authorized users to submit reviews of restrooms under the restroom tab.

R.1.2.1 Users shall be able to sort restrooms by the following options: Proximity and Overall Rating.

R.1.2.2 Users shall be able to filter restrooms by the following options: Building and Cleanliness

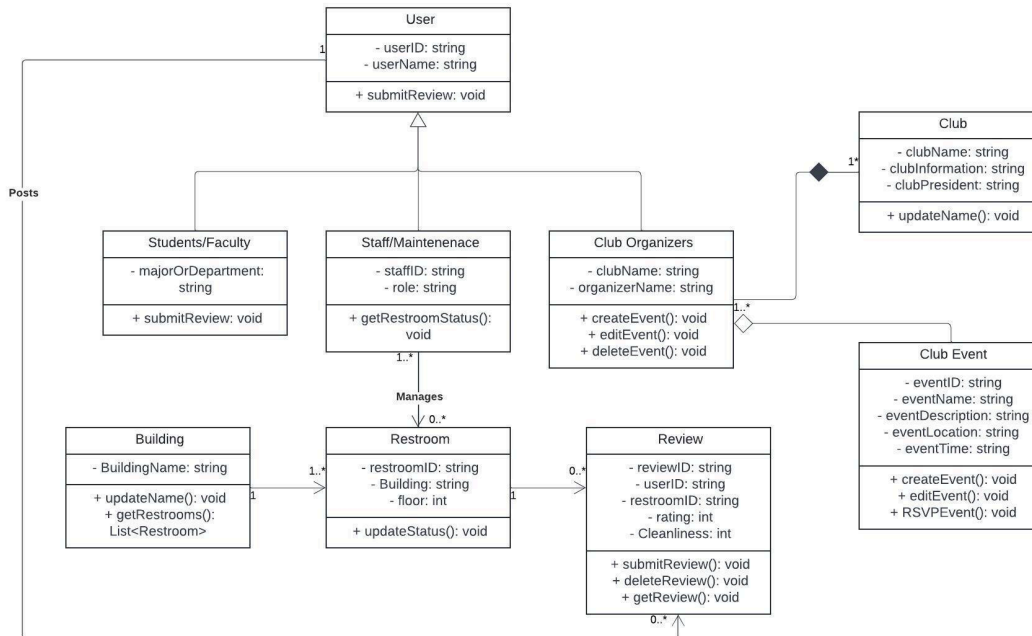
R.1.3.1 The system shall allow staff to modify restroom availability.

R.2.2 Students shall be able to RSVP to events

R.3.1 The system shall allow users to navigate to restrooms using embedded Google Maps.

#### 6.2 Logical Database Requirements

[https://lucid.app/lucidchart/de78c266-9392-47ef-906f-e003ddd968e6/edit?view\\_items=TjBcZtO2mVtE&invitationId=inv\\_ef7095c7-86f0-4cd6-ab45-e5a799cac64d](https://lucid.app/lucidchart/de78c266-9392-47ef-906f-e003ddd968e6/edit?view_items=TjBcZtO2mVtE&invitationId=inv_ef7095c7-86f0-4cd6-ab45-e5a799cac64d)



## 6.3 Software System Attributes

### 6.3.1 Usability

- 95% of users should complete their desired tasks such as finding a bathroom, reviewing a bathroom, and RSVPing to an event without the use of external help.
- If a user enters the wrong information or misclicks, they should be able to recover in at most 2 clicks.
- Maintenance staff should be able to view the most poorly rated restrooms in under 10 seconds.
- Users with handicaps should be able to find and navigate to the nearest accessible restroom in under 5 clicks.
- 90% of users should report being satisfied with using CampusCompanion.

### 6.3.2 Performance

#### Static:

The database should be able to store up to 100 reviews for each bathroom.

The system should be able to support 2000 simultaneous users without slowing down the system

Retrieving information about any restroom should take 3 seconds or less.

#### Dynamic:

95% of processes such as reviewing a bathroom or posting a club event should be completed in 1 second or less during typical conditions.

During peak workload, 90% of processes should be processed in 2 seconds or less.

Simple tasks such as finding a restroom, posting a restroom review, and RSVPing to an event should be completed within 4 clicks and under 10 seconds.

### 6.3.3 Reliability/Dependability

R.3.1 All actions performed by the users should be kept in a history log.

R.3.2 The history log should be 100% accurate at all times

R.3.3 User information will be backed up every day to ensure no data loss.

### 6.3.4 Security

R.4.1 Users' passwords must be made of at least 8 characters and include at least 1 uppercase letter, lowercase letter, and a special character.

R.4.3 User information should be encrypted to ensure protection.

R.4.4 A history log will be kept consisting of user activity.

### 6.3.5 Maintainability

R.5.1 The system will be modular, different parts include restrooms, clubs, users, and maintenance/staff.

R.5.2 Different modules will have different interfaces to ensure that changing one module will not affect the other modules.

R.5.3 Clear documentation will be kept to ease maintainability and to keep track of changes

R.5.4 APIs will be used for Google Maps.