



MoGreen

“Clean My Campus” Mobile Application

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Mosteller

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Problem Statement

- College campuses strive to be green and sustainable
- As student populations grow, overflowing bins, full dumpers, and campus litter rises, and maintenance issues increase as well
- To make NAU green, we have the Department of Sustainability and the Moving & Recycling Department

Problem Statement cont.

NAU's current problems:

- Poor current mechanisms for reporting maintenance issues
 - Unknown, outdated, and inconvenient
 - Students don't use them, creating more work for the people who rely on them
- Students have little involvement with keeping their campus clean
 - Students don't feel like it is their responsibility to pick up trash

Problem Statement cont.

Clients:

- Brock Brothers:
 - Manages NAU's Moving and Recycling department
 - Oversees trash and recycling efforts at NAU
 - Handles general NAU maintenance problems
- Ellen Vaughan:
 - Higher Education Sustainability Professional
 - Used to be the sustainability manager with NAU's Office of Sustainability
 - Now at UC Santa Cruz, is the Water and Climate Action Manager

Problem Statement cont.

NORTHERN ARIZONA UNIVERSITY
Northern Arizona University

Site Menu
Home

Work Request
Submit a Request
Query Request

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Query a Work Order

Key Request
Queue a Request

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Please select from list
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About TMA iServiceDesk v6.2.5

Welcome to the Northern Arizona University (NAU) Facility Services TMA iServiceDesk Work Request Site

IF YOUR WORK REQUEST IS URGENT, PLEASE CALL 523-4227. ONLINE WORK REQUEST ARE CHECKED AT 9AM, 1PM AND AT 4PM

Facility Services use of the TMA iServiceDesk allows a web-enabled interface that provides a user-friendly web forum to submit, query, and report on Work requests and Work Orders. Please note that a work request can be rejected or be converted to a work order once approved.

To use TMA iServiceDesk, you can do the following:

- To request a Work Order, select "submit a Request" from the menu on the left
- To look up a specific Work Request, select "Query a Request" from the menu on the left.
- To lookup a specific Work Order, select "Query a Work Order" from the menu on the left.
- You can also check the status of work requests and work orders by calling 523-4227
- You can return to this page by clicking on the HOME button under the Site Menu
- Campus Supply Ordering System
- To Order Supplies from Campus Supply, select "Catalog Search" from Material Request

This website is for the TMA iServiceDesk product for Facility Services at Northern Arizona University.

If this is an EMERGENCY or a request that needs IMMEDIATE attention, please call 928-523-4227.

iServiceDesk
POWERED BY THE OPEN GROUP

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About TMA iServiceDesk v6.2.5

Select Facility
Select your Facility | Select your Building | Submit your Request

Select your Facility

Please select your Facility:

- 1FLAGSTAFF CAMPUS
- 1FLAGSTAFF CAMPUS
- COCONINO COMMUNITY COLLEGE
- EXTENDED LEARNING
- FS VEHICLES
- INTERGOVERNMENTAL AGREEMENT PARTNERS
- NAU DISTANCE LEARNING
- UNIVERSITY STORE

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Problem Statement cont.

NORTHERN ARIZONA UNIVERSITY
Northern Arizona University

Select Building

Home | Select your Facility | **Select your Building** | Submit your Request

Please select your Building:

- ACADEMIC ANNEX
- ACADEMIC ANNEX**
- ACADEMIC BUILDINGS - MULTIPLE
- ADEL MATHEMATICS
- ALLEN HALL
- ANTHROPOLOGY LABORATORY
- APPLIED RESEARCH AND DEVELOPMENT
- AQUATIC AND TENNIS COMPLEX
- ARDREY AUDITORIUM
- ASHURST
- ATMOSPHERIC RESEARCH OBSERVATORY
- AVIAN COGNITION LABORATORY
- BABBITT ACADEMIC ANNEX
- BABBITT ADMINISTRATIVE CENTER
- BILBY RESEARCH CENTER
- BIOLOGICAL SCIENCES
- BIOLOGICAL SCIENCES ANNEX
- BIOLOGY GREENHOUSE
- BLOME
- BOOKSTORE / POSTAL SERVICES
- BURY

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iServiceDesk

NORTHERN ARIZONA UNIVERSITY
Northern Arizona University

Request Form for ALLEN HALL

Home | Select your Facility | Select your Building | **Submit your Request**

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>>

Name: Justin Shaner

Phone #: [empty]

E-mail Address: jms949@nau.edu

Repair Center: FS - FACILITY SERVICES

Area: [empty]

Account #: [empty]

Tag Type: Area

Tag #: [empty]

Request: [empty]

Submit

About TMA iServiceDesk v6.2.5

iServiceDesk

Solution Overview

- Create an application for students and faculty
 - Allows users to locate areas that need cleaning
 - Faster reporting by zone
 - Motivation for a cleaner campus

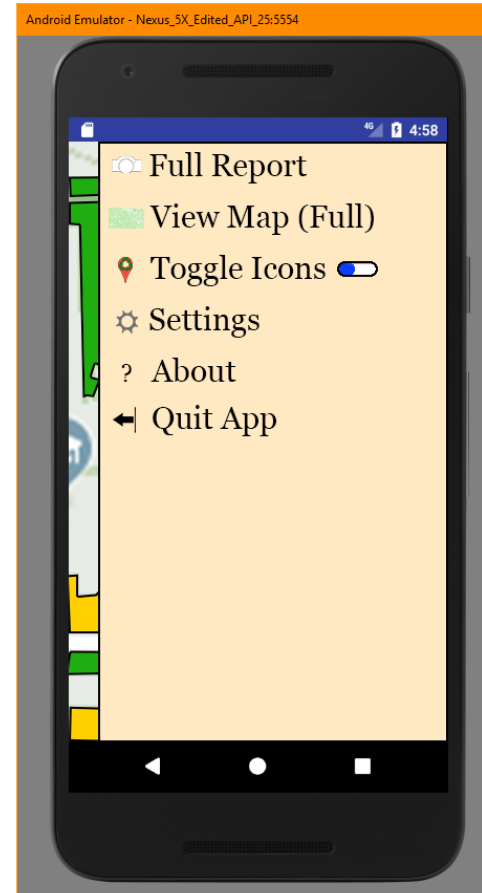
- Website Portal
 - Allows admins to see reports and statistics
 - Create zones on their campus

Solution Overview cont.

Mock ups



Standard Screen

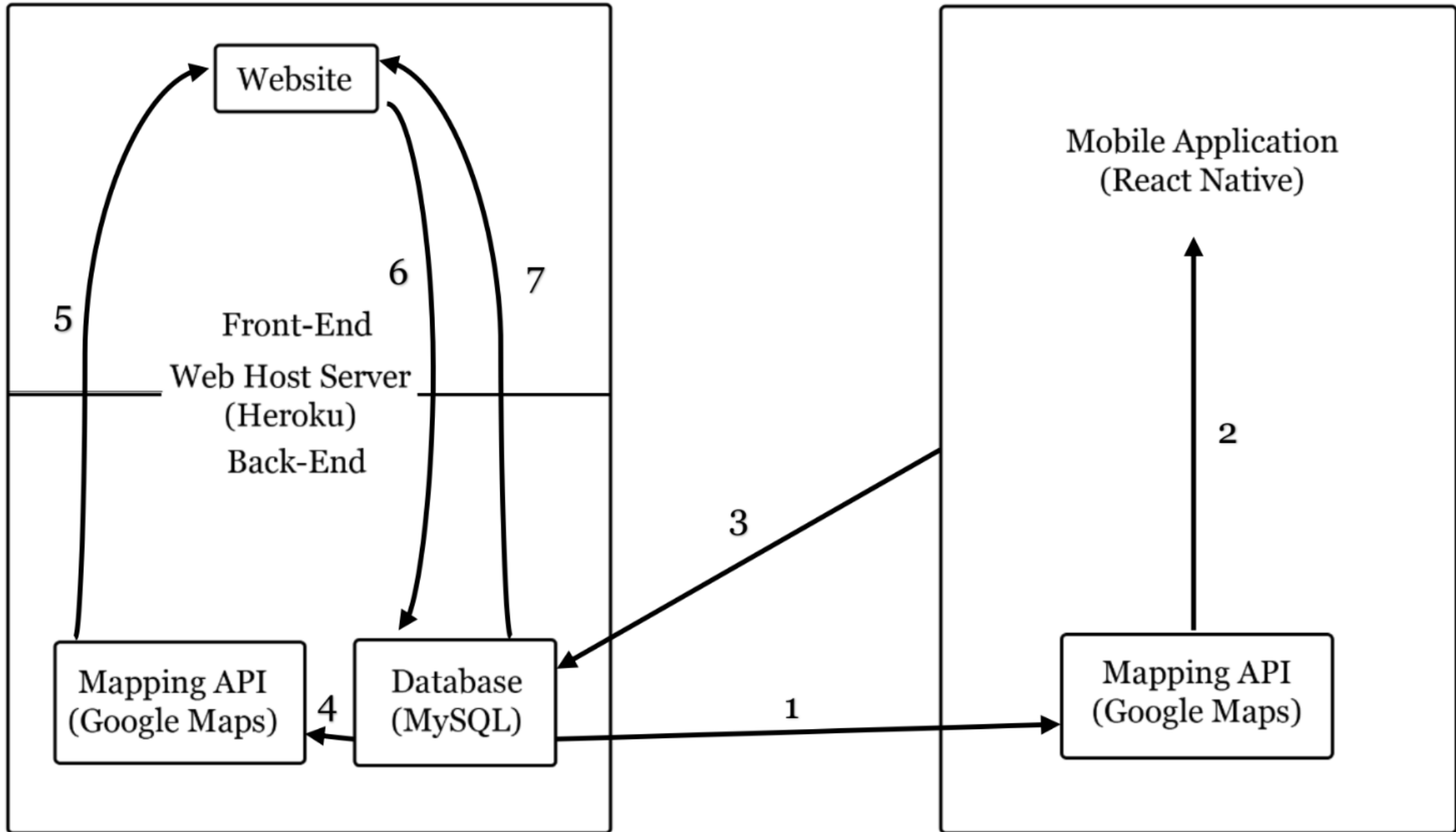


Menu Button Pressed

Solution Overview cont.

Tech choices and integration

- Google Maps: displays map zones and coloration
 - Main map interface, as shown
- MySQL: stores cleanliness reports, maintenance reports, and images
- Heroku: will host the website
 - XML, JavaScript, HTML
- React Native: framework used to create application
 - Does not lock out cross-platform capability



(Figure 1. Image representation of how our technologies will interact with each other.)

Key Requirements

Functional requirements for our minimal viable product:

- Create a profile
- Reporting
- Visualize campus areas
- View traffic data

Key Requirements cont.

- Reporting
 - Quick report
 - Litter
 - Data entry
 - Decrements region timer
 - Overflowing container
 - Position sent to Brock's team
 - Decrements region timer
 - Full report
 - Take picture
 - Add comment
 - Submitted to Brock's team
 - Claim area
 - Mark as clean
 - Mark as dirty

Key Requirements cont.

Functional requirements for our “comfortable” solution:

- Ability to accrue points and form teams, high score system
- Map icons and interfaces/filters
- Geolocation (exact user locations)

Key Requirements cont.

Performance Requirements:

- Our main performance requirements are simplicity, usability, and reliability
- Simplicity:
 - 3 main views: map GUI, quick report button (on main map), swipe to full menu
- Usability:
 - Quick reports should be able to be made by the average user in less than a minute and full reports in 2 minutes
- Reliability:
 - We expect our application to be able to handle at least 30,000 reports at one time

Key Requirements cont.

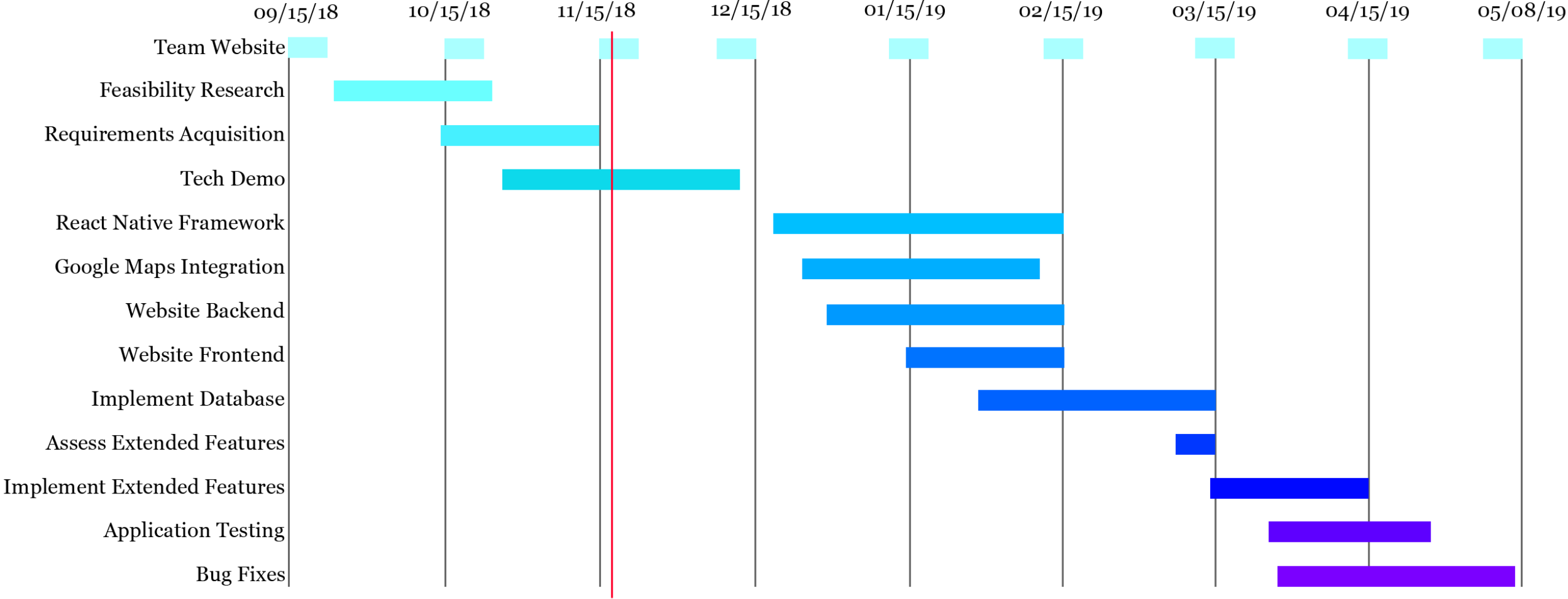
Environmental Requirements:

- Cross-compatibility:
 - Clients would prefer this application to be cross-compatible if possible
- Gamification:
 - Allocate database space for use of future gamification features
 - Store information in a way that allows assigning point values to user tasks
- Google Maps API:
 - Few competitors and widely supported
- Hosting service:
 - Compatibility with the database we want to use to display statistics

Risk and Feasibility

- Most of our risks involving feasibility are regarding cost and can subsequently affect our clients
 - Not an issue with low traffic on one campus
- Students can send multiple fake maintenance reports
 - Unexpected, but will add logic rules to prevent spam reports
 - Database and hosting service can handle large amounts of traffic
- Any student can report an area as cleaned without actually making any effort, no proof of cleaning required
 - Overhead to implement some proof mechanism is not justified based on expected traffic and user-base

Schedule



Conclusion

- Problems:
 - Outdated reporting methods and lack of community involvement
- Solution:
 - Mobile application with a simple interface enabling quick reports
 - Administrators have access to reporting data and visual representation of data
- This application will be a template to deploy to other campuses
- Facilitate community engagement and change how people view their communities



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