CECS 491A - Sec 6 - Project Plan Document

Project Name: ArrowNav

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I. Overview

A. Project Overview

ArrowNav is a campus companion web application that provides useful information and assistance to both new and current students at California State University Long Beach. The application will display locations, provide foot traffic updates, integrate student schedules into their accounts for the application, and increase student productivity while on campus through a variety of features. The goal of our web application will be to make it easier for students to navigate campus and increase their productivity on campus while still making it an interactive and enjoyable application to use on a semi-regular basis through convenience, incentives, and usability.

B. Project Plan Evolution

As this document defines the project's scope and outlines the goals set in place for the project, it will be treated as a living document and will be updated periodically as the project progresses. These updates will come from changes that the client might have or from new information that has come to light.

C. Project Assumptions

This team is composed of full time students not employees who will be taking part in multiple courses throughout the project plan schedule. Therefore team capacity will be dependent on outside factors such as other classes. Additionally this causes the team budget to be limited to mostly free options.

II. Milestones

A. Project Start

1. **Description**
    a) First date of Sprint 0
2. **Deliverables**
3. **Planned Due Date**
    a) 8/23/21

B. Project Proposal

1. **Description**
    a) Initialize, edit, finalize and submit the project proposal
2. **Deliverables**

a) Project Proposal Document

3. **Planned Due Date**
    a) 9/24/21

C. Tech Spec, BRD, Site Map, High Level Design

1. **Description**
    a) Initialize, edit, finalize and submit the tech spec, BRD, site map, high level design.
2. **Deliverables**
    a) Tech Spec, BRD, Site Map, Hight Level Design
3. **Planned Due Date**
    a) 10/06/21

D. Project Plan,Test Plan,Network Diagram

1. **Description**
    a) Initialize, edit, finalize and submit the project plan,test plan, network diagram
2. **Deliverables**
    a) Project Plan, Test Plan, Network Diagram
3. **Planned Due Date**
    a) 10/27/21

E. Logging, User Management, LL Design

1. **Description**
    a) Initialize, edit, finalize and submit the Logging, UM, LL Design
2. **Deliverables**
    a) Logging, UM, LL Design
3. **Planned Due Date**
    a) 12/08/21

F. Environment Setup

1. **Description**
    a) Finish setting up the software environment.
2. **Deliverables**
    a) IDEs, Database, Database Management
3. **Planned Due Date**
    a) 2/2/22

G. DARs

1. **Description**
    a) Listed tech approvals should be all approved
2. **Deliverables**
    a) Tech approvals for our Front End Framework, Mapping Platform, End to End Testing, and Cloud Host Provider.
3. **Planned Due Date**

a) 2/13/22

H. UI Homepage

1. **Description**
    a) Research, develop and test the UI home page.
2. **Deliverables**
    a) User Interface Home Landing Page
3. **Planned Due Date**
    a) 2/20/22

I. Account Management

1. **Description**
    a) Research, develop and debug code for account management. Create any UI elements that are associated with Account Management. Will not include Class Schedule and Rewards until those features are developed.
2. **Deliverables**
    a) Account Management feature
3. **Planned Due Date**
    a) 2/27/22

J. Routing

1. **Description**
    a) Research, develop and debug code for routing not including traffic model.
2. **Deliverables**
    a) Account Management feature
3. **Planned Due Date**
    a) 3/6/22

K. Class Schedule

1. **Description**
    a) Research, develop and debug code for class schedule integration. Create any UI elements that are associated with the Class Schedule.
2. **Deliverables**
    a) Class Schedule Integration feature
3. **Planned Due Date**
    a) 3/27/22

L. Search

1. **Description**
    a) Research, develop and debug code for and search feature.
2. **Deliverables**
    a) Search Feature
3. **Planned Due Date**
    a) 3/27/22

M. Survey & Privacy

1. **Description**
    a) Research, develop and debug code for survey and privacy features.
2. **Deliverables**
    a) Survey Feature
    b) Privacy Feature
3. **Planned Due Date**
    a) 4/10/22

N. Routing Capacity (Capacity)

1. **Description**
    a) Research, develop and debug code for survey and privacy features.
2. **Deliverables**
    a) Survey Feature
    b) Privacy Feature
3. **Planned Due Date**
    a) 4/17/22

O. Rewards System

1. **Dependencies:**
    a) Map
    b) User Account
2. **Description**
    a) Research, develop and debug code for survey and privacy features.
3. **Deliverables**
    a) Survey Feature
    b) Privacy Feature
4. **Planned Due Date**
    a) 4/17/22

P. Wellness Hub

1. **Description**
    a)
2. **Planned Due Date**
    a) 4/17/22

Q. Usage Analysis Dashboard

1. **Planned Due Date**
    a) 4/24/22

R. Testing & Deployment

1. **Description**
    a) Conduct final testing of the project as a whole and deploy to environments
2. **Deliverables**
    a) Automated Tests

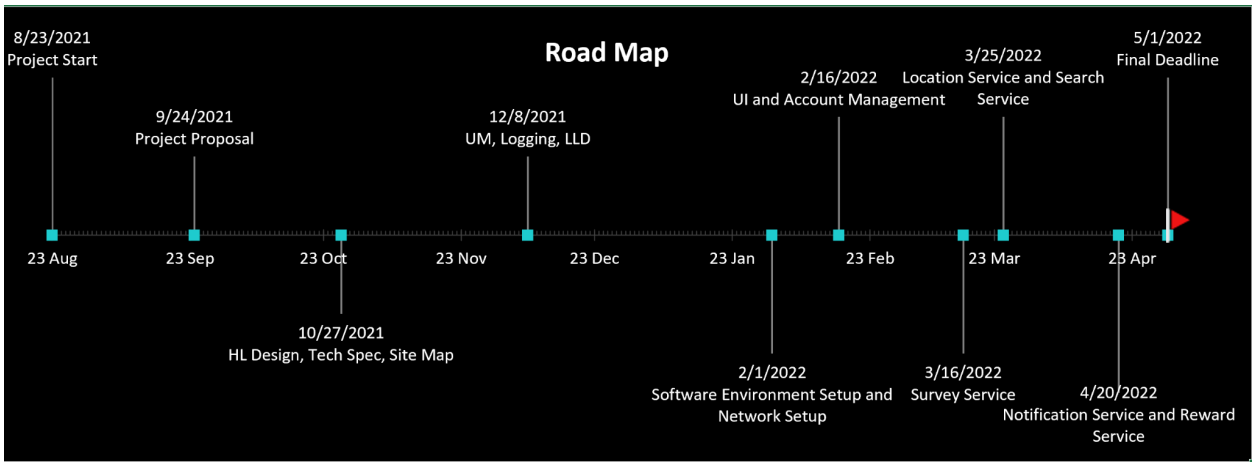
b) Deployed software

3. **Planned Due Date**
    a) 5/1/22

S. Final Deadline

1. **Description**
    a) Final day of the project
2. **Deliverables**
    a) Final Project
3. **Planned Due Date**
    a) 5/1/22

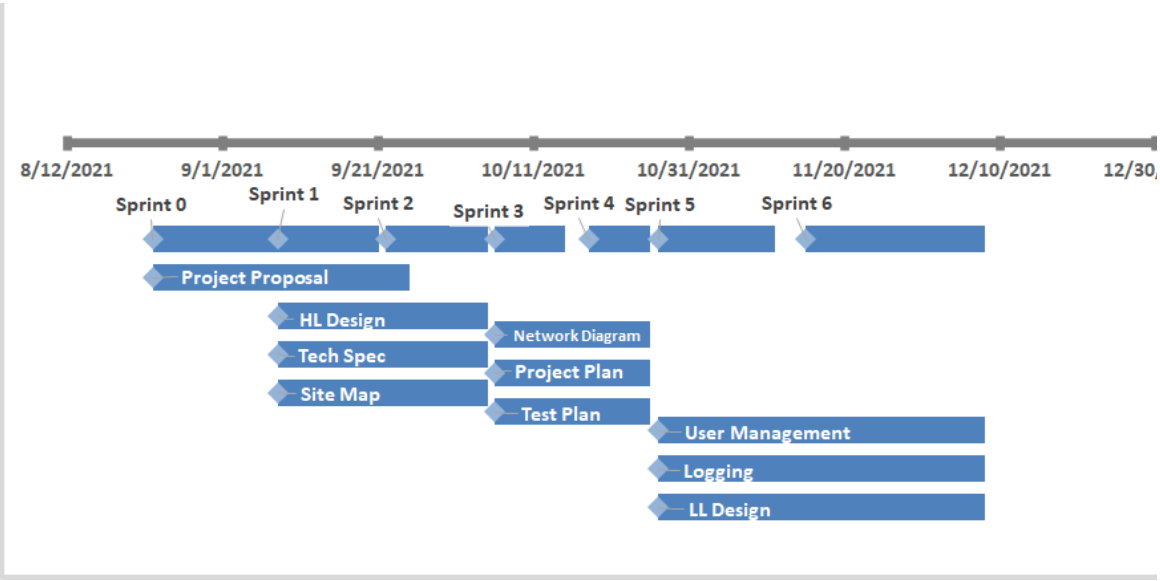
III. Road Map

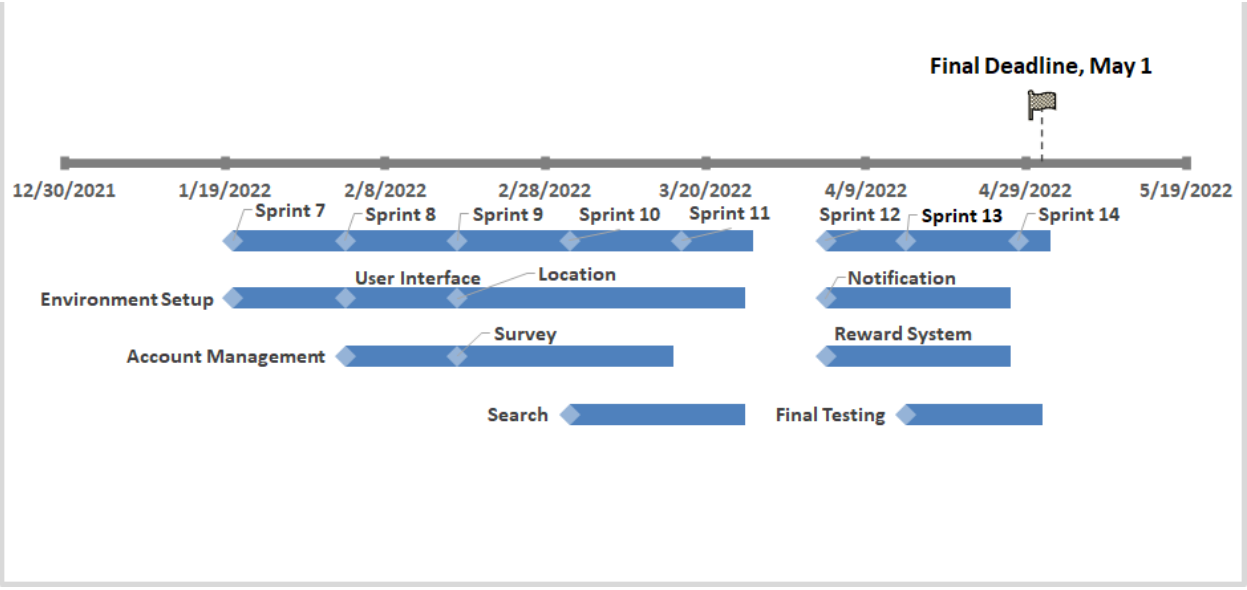


IV. Timeline

The following timelines display the sprints as well as the implementations that will be worked on during these sprints. The implementation of smaller sprints will help our team understand the project's progression and be able to adjust accordingly to any setbacks that we might have moving forward.

Product Timeline





V. Sprint Breakdown

Sprint 0 8/30/2021 - 9/6/2021		Hours Total: 59
Project Proposal - Spencer	Writing	59 hours

Sprint 1 9/7/2021 - 9/20/2021		Hours Total: 109
Project Proposal - Spencer	Writing	40 hours
High Level Design - Curtis	Writing	18 hours
BRD - Miguel	Writing	20 hours
Site Map - Brayan	Writing	16 hours
Tech Spec - Christian	Writing	15 hours

Sprint 2 9/21/2021 - 10/4/2021		Hours Total: 115
Project Proposal - Spencer	Writing	5 hours
High Level Design - Curtis	Writing	28 hours

BRD - Miguel	Writing	30 hours
Site Map - Brayan	Writing	27 hours
Tech Spec - Christian	Writing	25 hours

Sprint 3 10/5/2021 - 10/14/2021		Hours Total: 60
Project Plan - Brayan	Writing	24 hours
Test Plan - Miguel	Writing	24 hours
Network Diagram - Spencer	Writing	12 hours

Sprint 4 10/15/2021 - 10/25/2021		Hours Total: 60
Project Plan - Brayan	Writing	24 hours
Test Plan - Miguel	Writing	24 hours
Network Diagram - Spencer	Writing	12 hours

Sprint 5 10/26/2021 - 11/11/2021		Hours Total: 75
Low Level Design - Curtis	Writing	25 hours
Logging - Christian	Writing	25 hours
User Management - Spencer	Writing	25 hours

Sprint 6 11/12/2021 - 12/7/2021		Hours Total: 75
Low Level Design - Curtis	Writing	25 hours
Logging - Christian	Writing	25 hours
User Management - Spencer	Writing	25 hours

Sprint 7 1/20/2022 - 2/2/2022		Hours Total: 225
Software Environment Setup - Spencer	IDE Configuration	25 hours
	Github Repository Configuration	20 hours
Network Setup - Brayan	Cloud Configuration	60 hours
	Web Server Configuration	50 hours
	Database Configuration	20 Hours
	Database server configuration	50 hours

Sprint 8 2/3/2022 - 2/16/2022		Hours Total: 240
User Interface - Miguel	Research	20 hours
	Development	60 hours
	Error Handling	20 hours
	Testing	10 hours
	Logging	5 hours

Account Management - Curtis	Research	20 hours
	Development	40 hours
	Error handling	20 hours
	Testing	10 hours
	Logging	5 hours
	Input Validation	10 hours
	Security	20 hours

Sprint 9 2/17/2022 - 3/2/2022		Hours Total: 190
Rewards System - Spencer	Research	30 hours
	Development	70 hours
Wellness Hub - Christian	Research	20 hours
	Development	40 hours
	Error handling	20 hours
	Testing	10 hours

Sprint 10 3/3/2022 - 3/16/2022		Hours Total: 200
Rewards System - Spencer	Development	50 hours
	Error Handling	20 hours
Wellness Hub - Christian	Logging	20 hours
	Input Validation	10 hours
	Security	20 hours
Routing and Mapping - Brayan	Research	20 hours
	Development	50 hours
	Input validation	10 hours

Sprint 11 3/17/2022 - 3/25/2022		Hours Total: 170
Rewards System - Spencer	Testing	60 hours
	Logging	40 hours
Routing and Mapping - Brayan	Error handling	10 hours
	Testing	40 hours
	Logging	20 hours

Sprint 12 4/4/2022 - 4/13/2022		Hours Total: 180
Wellness Hub - Christian	Final System Tests	20 hours
	Final Users Tests	20 hours
	Final Code Checks	20 hours
Capacity Feature - Curtis	Research	20 hours
	Development	30 hours
	Error handling	10 hours
Schedule Feature - Miguel	Research	20 hours
	Development	30 hours
	Error handling	10 hours

Sprint 13 4/14/2022 - 4/27/2022		Hours Total: 150
Wellness Hub - Christian	Final System Tests	30 hours
	Final Users Tests	30 hours
	Final Code Checks	30 hours
Capacity Feature - Curtis	Logging	10 hours
	Testing	20 hours

Schedule Feature - Miguel	Logging	10 hours
	Testing	20 hours

Sprint 13 4/27/2022 - 5/4/2022		Hours Total: 120
Wellness Hub - Christian	Final System Tests	30 hours
	Final Users Tests	30 hours
	Final Code Checks	30 hour

VI. Cost Estimation

Personnel Cost				
Team Members	**Title**	**Hourly**	**Days**	**Cost**
Spencer Gravel	Project Manager\ Software Developer	45$	180	$24,300
Brayan Fuentes	Software Developer	42$	180	$22,680
Christian Lucatero	Software Developer	42$	180	$22,680
Curtis Nishihira	Software Developer	42$	180	$22,680
Miguel Zavala	Software Developer	42$	180	$22,680
Hourly rates based on average salary for position and cost calculated assuming students are not full time			Total Cost:	$115,020

Technology Cost			
Amount	**Technology Type**	**Technology Name**	**Cost**
5	Communication	Discord v10.0.19043	0$
5	Documentation	Google Docs v1.21.382.02.30	0$
5		Google Sheets v1.21.402.01.35	0$
5		Drawio v15.3.8	0$
5	Version Control	Github Desktop v2.9.3	0$
5		Visual Studio 2019 - Community Edition v16.11	0$
5	Project Management	Zenhub v2.0	0$
5	SQL Server Management	SQL Server Express 2019 v15.0.2000.5	0$
5	Web Server	IIS 10	0$
5	Cloud Provider	Microsoft Azure (database and web servers)	0$
5	Software Library	.NET Framework	0$
5	Automated Testing	Selenium v4.0	0$
5		BrowserStack Automate	0$
5	Front End JavaScript Framework	React v17.0.2	0$
5	Server Side Programming framework	.NET Framework	0$
		Total Cost:	0$

VII. Risk Estimation

A. Scope Creep

1. Description
    a) Changes to the project scope as a result of client change requests, technology limitations, or team limitation
2. Impact
    a) Has high impact depending on how large the scope creep is could entail more work for the team also affecting the delivery timeline
3. Probability
    a) Moderate probability as there is expected to be some kind of scope creep in most projects but a large scope creep that cannot be avoided has very low probability at this stage in the project
4. Migration strategy
    a) address changes viability and team capacity

B. Team Availability

1. Description
    a) The limited availability that the team members might have with external commitments or during breaks.
2. Impact
    a) Has the potential to have a moderate impact on the project's performance and affect the schedule in place.
3. Probability
    a) The probability of this occurring is between 25% and 75%
4. Mitigation Strategy
    a) Accept the Risk
        (1) The team will have meetings to minimize the impact of having a team member absent for the period of time and to collaborate with each other to keep the project's schedule on track.

C. Insufficient Time

1. Description
    a) Run out of time to complete the aspects listed for a given sprint.
2. Impact

a) Has the potential to have a high impact on the project's performance and heavily affect the schedule in place.

3. Probability
    a) The probability of this occurring is between 50% and 85%.
4. Mitigation Strategy
    a) Accept the risk
        (1) We will continuously update the project schedule to be able to spread the workload efficiently and reduce some of the non essential tasks.

D. Pandemic
1. Description
    a) Outbreaks or spikes in Covid19 pandemic could cause team availability or workflow to be interrupted
2. Impact
    a) Potential is medium impact virtual work will remain unchanged but any in person team events will be canceled and team motivation or health could be deterred by community restrictions.
3. Probability
    a) The probability of this occurring is 50% with rising vaccinations there is a possibility of more variants occurring and loosened restrictions on gatherings could spread the virus.
4. Mitigation Strategy
    a) Nothing the team can do to mitigate changes in the pandemic except following CDC guidelines and limiting exposure to large amounts of people.