

California State University, Sacramento

CSC 131-01: Computer Software Engineering

Fall 2020  
October 15, 2020

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Deliverable #2: Software Requirement Specification (SRS)

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FMZ:

Andersen Huey

Baljinder Saini

Justin Lieu

Seth Albrecht

Professor Ahmed Salem

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# 1. INTRODUCTION

## 1.1. Purpose of this Document

This SRS outlines the goals and requirements for the proposed commuter assistance website (FMZ Commuter Website).

## 1.2. Project Scope

### State the overall aim of the system

Provide a way for commuters to compare travel options based on time, money, and sustainability.

### List the system major features

- Ranking by Parameters:
  - Money
  - Time
  - Sustainability
- Survey section:
  - Time of travel
  - Type of car
  - MPG
  - Availability for carpool
  - Distance from campus
- Collection of commute decisions by users for UTAPS
- Links to UTAPS and SRT references
- Listing of prices for public transit (best estimate)
- User interface

# 2. GENERAL DESCRIPTION

## 2.1. Glossary (Definitions, Acronyms, and Abbreviations)

“Best-fit option” - The option that will be given to the user based on their answers from their rankings and survey. This option is supposed to be the best for what the student answered.

“CSUS (Sac State)” - California State University Sacramento

“FMZ” - Fun Mandatory Zone (Team name)

“Ranking by Parameter” - The user will be given three variables that they can rank from most important to least.

“Users” - The target audience for this project is students who go to CSUS and visitors who want to know what their options are for getting to CSUS.

“UTAPS” - Sponsor of the project, stands for University Transportation & Parking Services.

## **2.2. Project Sponsor**

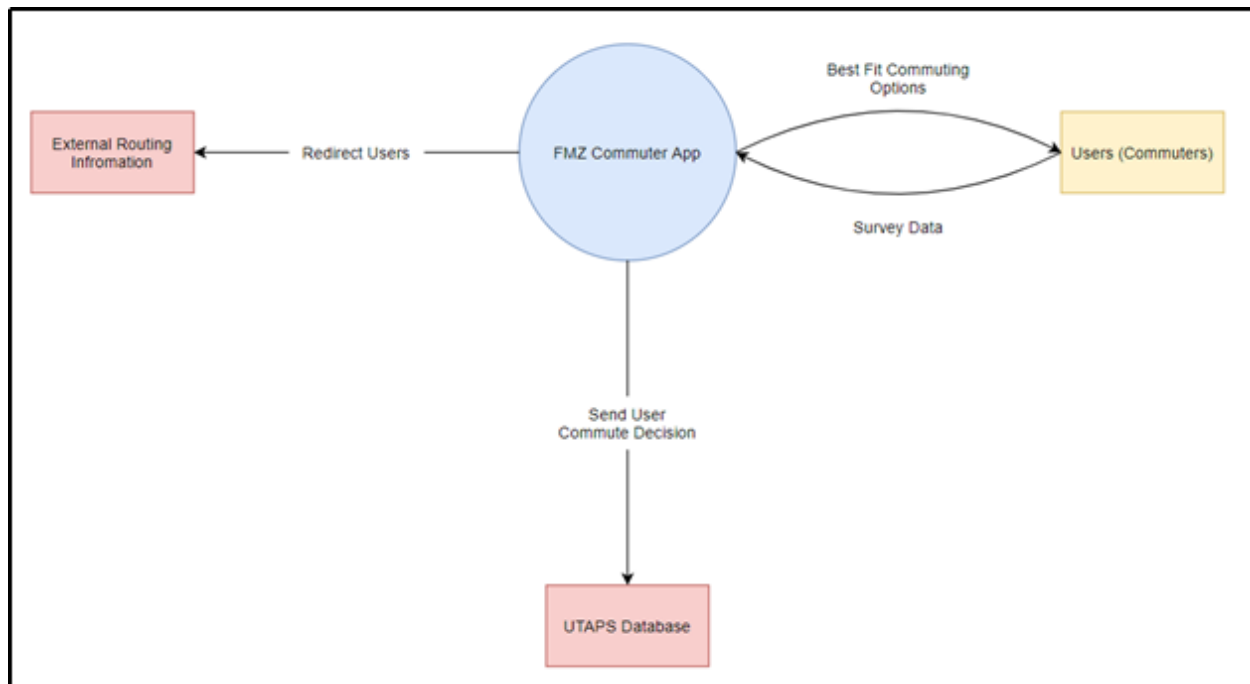
University Transportation & Parking Services (UTAPS) - Wants to create a new app or website for commuters that can be used to inform them of alternate and possibly new transportation options to and from CSUS.

## **2.3. User Characteristics**

Sac State students - Average Sac state student or student incoming from orientation

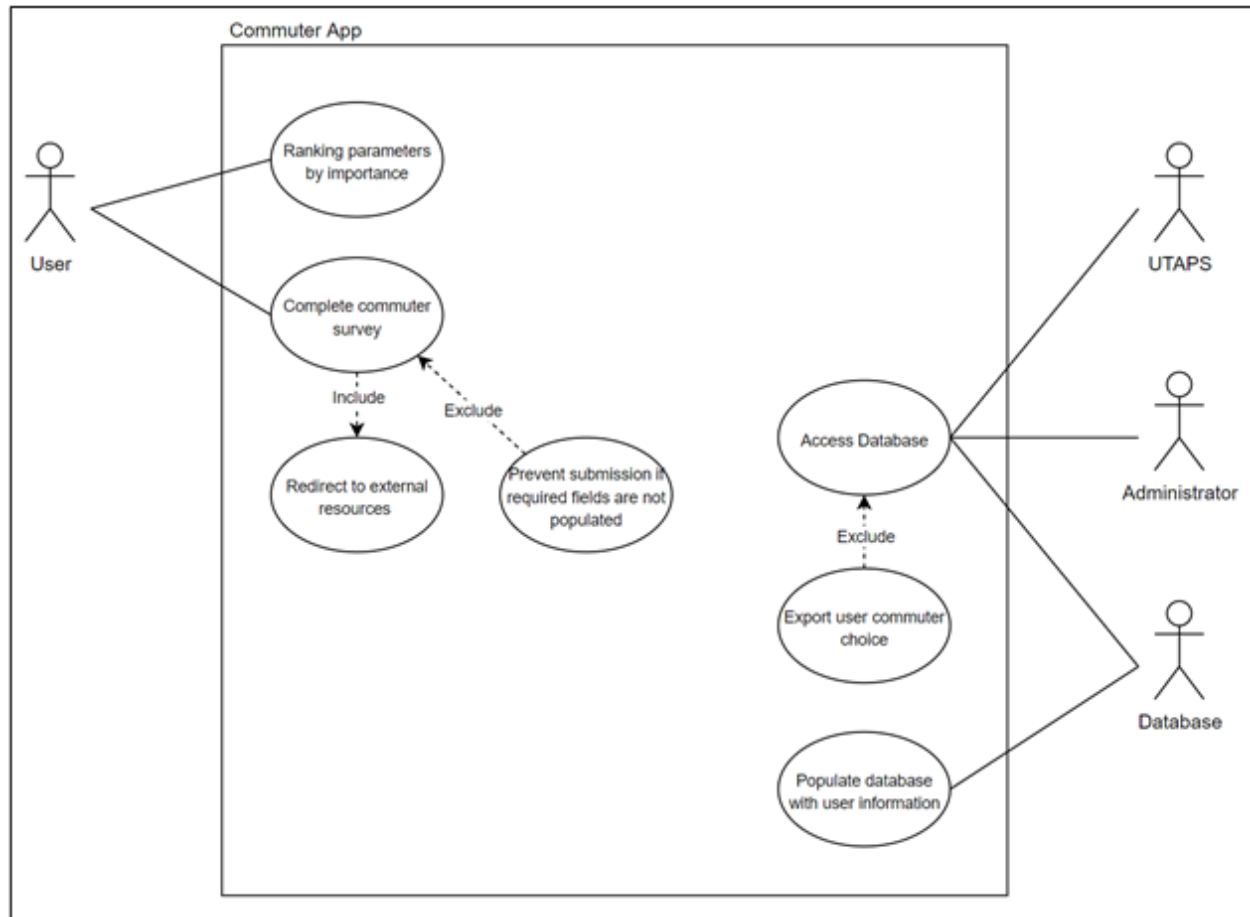
Visitors - People who are visiting the Sac State campus who are not coming regularly

## 2.4. Product Perspective



**System Context Diagram for the FMZ Commuter Website**

### 3. Object Oriented Analysis (OOA)



#### 3.1.1. Use Case Model for the FMZ Commuter Website

#### 3.1.2. Use Case Description

Use Case Name: Ranking Parameter by Importance

Use Case Number: UC1

Authors: Andersen Huey, Baljinder Saini, Justin Lieu, Seth Albrecht

Actors: Users/Commuters (includes students and visitors)

Overview: This Use Case involves the Commuters ranking what they find most important when traveling to CSUS.

References: FR2

Related Use Cases: UC2

Typical Flow (basic flow) Description: Users are met with a homepage that provides a brief description of the website and then are guided to the Ranking by Importance section of the website. They will rank what they find most important to least based on

the parameters that are given to them which will affect the best-fit option given to them at the end of the completing the survey.

Alternative Flow Description (When things don't go as expected): If the user tries to move on without ranking the parameters, they will be redirected back to the beginning of the Ranking by Importance section with a message stating that they cannot move on until the com

Use Case Name: Complete Survey

Use Case Number: UC2

Authors: Andersen Huey, Baljinder Saini, Justin Lieu, Seth Albrecht

Actors: Users, Database

Overview: This Use Case is for the user to complete a survey about their form of transportation to CSUS.

References: FR3, FR4, FR6

Related Use Cases: UC1 and UC3

Typical Flow (basic flow) Description: After ranking the parameters based on importance, users will be guided to the survey which asks about their form of transportation. The information will be stored into a database that collects user decisions. Users will also be redirected to external resources that will guide them to better transportation options.

Alternative Flow Description (When things don't go as expected): All questions on survey will be required before the user can move on so they will be provided the best transportation options.

Use Case Name: Access Database

Use Case Number: UC3

Authors: Andersen Huey, Baljinder Saini, Justin Lieu, Seth Albrecht

Actors: Admin, UTAPS

Overview: This use case is for UTAPS to be able to collect data about user commuting choices.

References: FR6

Related Use Cases: UC2

Typical Flow (basic flow) Description: Admin or UTAPS wants to access data collected from surveys so they login to a secure external database controlled by UTAPS and retrieve the information they want. The user will not go through our system.

Alternative Flow Description (When things don't go as expected): The alternative flow is the same as the typical flow as it is externally accessed and depends on the server that UTAPS chooses.

## **4. System Functional Requirements**

- FR1** - Accessible to anyone visiting
- FR2** - Ranking priorities from a given list
- FR3** - Taking a survey
- FR4** - Give best option based on individual's needs
- FR5** - Provides information for transportation methods
- FR6** - Data collection
- FR7** - Color scheme should be in line with CSUS websites'

## **5. General Constraints and Assumptions**

The system will be web-based and accessible from any device that supports web browsing.

## **6. User View of Product Use**

When the User enters the website, they will be greeted with a homepage that briefly describes the website's purpose along with what they will be doing on it and what they can expect from it. There will be a button that will initiate the Rating Parameters by Importance section of the website which involves the user rating 3 given parameters. Once done with that, they will move onto the Survey section of the website where they will be answering a quick survey that will be used in determining the best-fit option based on their answers from the Ranking and the current section. After completing the Survey, they will be given their best-fit option at the top and the others below.





SACRAMENTO STATE



University  
Transportation &  
Parking Services  
California State University, Sacramento

### FMZ Commuter App

The FMZ Commuter App is an online web tool that'll help you determine the best means of transportation to get to Sac State. Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum Lorem Ipsum.

Begin Survey

### Other Helpful Links

Google Maps  
Uber  
Lorem Ipsum  
Lorem Ipsum

Transportation Option Survey	
Time of Travel:    HR: <input type="text"/> Mins: <input type="text"/>	
Are you driving a car?	
Yes <input type="radio"/>	No <input type="radio"/>
▼ If Yes	
Type of Car	MPG
<div><div>Sedan</div><div>Coupe</div><div>Van</div><div>Truck</div><div>etc.</div></div>	<input type="text"/>
Available for Carpool?	
Yes <input type="radio"/>	No <input type="radio"/>
Distance from Campus	
<input type="text"/> Miles	
<input type="button" value="Submit"/>	

Based off your survey data here are your ranked travel options:

Travel Option:	Travel Time:
Car/Uber	15 Min
Public Transportation	30 Min
Bike	35 Min
Carpool	15 Min

If you would like to take the survey again Please:

[Click Here](#)

## 7. Specification (Detailed Description of Functional Requirements)

### 7.1. Describing functional requirements

#### FR1 - Accessible to anyone visiting

Purpose: Allows for a wide population of people to access the website.

Inputs: User's input from a mouse, keyboard, or touch screen through a web page.

Processing: Web page shows users a description about what the app does along with other helpful links that the user may use. A button will be presented for the user to begin a survey on the app.

Outputs: Once the button is pressed, the user will be guided to a list of priorities that they will have to rank from highest to lowest.

#### FR2 - Ranking priorities from a given list

Purpose: Allows users to rank the importance of each given choice which will affect the "best" choice commuting option for them.

Inputs: Mouse and keyboard from users and choosing from given options.

Processing: Users will rank the three options and if any invalid/blank inputs are provided the survey will notify users of their mistakes while barring them from continuing.

Outputs: Rankings will be remembered as a factor for choosing the “best” commuting option. The user will then be redirected to the survey.

### **FR3 - Taking a survey**

Purpose: To help determine which option would suit the user’s needs and will be used in determining which option is best for them

Inputs: Mouse, keyboard, and touch-inputs from users and choosing from given options

Processing: Users will fill out a survey that will help in determining what their best-fit option would be based on their answers along with their rankings of the priorities. If a user tries to move on without completing the survey, they would be given an error message stating that they need to complete the survey before moving on

Outputs: After completing the survey, users would be given their best-fit option on the website

### **FR4 - Give best option based on individual’s needs**

Purpose: To provide the user with the optimal travel option so they can know what way they should travel according to their preferences.

Inputs: Survey results

Processing: The website itself will take the results from the survey data and from that information it will decide what the best option is and output it to a screen to be displayed.

Outputs: The best option will be at the top of a list of travel options with different time breakdowns for each.

### **FR5 - Provides information for transportation methods**

Purpose: Gives the user a list of links that will provide them information about their preferred transportation methods.

Inputs: User input from mouse or touch screen on the web page.

Processing: Users will have their top transportation options along with useful links provided to them to help get a more precise decision.

Outputs: Links will provide users specific information such as time and cost on their top transportation options.

### **FR6 - Data collection**

Purpose: To help UTAPS determine which options are being recommended to students

Inputs: Storing the best-fit option after users complete the survey

Processing: After users are given their best-fit option, a database will store away what their option was and keep it so that UTAPS can look at the data if they want to see what the website is recommending for students to do.

Outputs: Storing the best-fit options that users are getting as a result and sending that data over to UTAPS.

**FR7** - Color scheme should be in line with CSUS websites'

Purpose: Color scheme should adhere to the university brand.

Inputs: CSUS brand color numbers.

Processing: When the website is designed, the colors for the backgrounds will all be selected from the CSUS brand.

Outputs: The website is already designed under the CSUS color scheme so there will not be any outputs.

## 7.2 Data Dictionary

Data dictionary provides information such as data items, data types, how data is used  
Partial list is sufficient (**TBD later on**)

## 8. Non-Functional Requirements

- Availability - Website should be accessible 24/7
- Reliability - Capable of handling substantial amount of traffic (i.e. orientation, events)
- Performance - Reasonable load times
- Usability - User friendly UI, simple, hassle free
- Maintainability - easy to update, clean and commented code

## 9. Remarks or Comments

N/A

## 10. References/ Resources Used

- Lecture PowerPoint Slides
- <http://www.agilemodeling.com/artifacts/useCaseDiagram.htm>
- <https://online.visual-paradigm.com/knowledge/system-context-diagram/what-is-system-context-diagram/>

## 11. Team Members' Roles and Approval

### 11.1. Briefly describe each team member role

Andersen Huey - Team Member

- Contributed to each part of the SRS.

Baljinder Saini - Team Lead

- Responsible for organizing team meetings and presentations

Justin Lieu - Team Member

- Contribute in the completion for each portion of the SRS.

Seth Albrecht - Team Member

- Helped in the design of web page mockups, and completed a share of the work for each section of the SRS.

### 11.2. Add team member name, signature and date signed

Andersen Huey - *ANDERSEN HUEY 10/14/2020*



Baljinder Saini -  Baljinder Saini 10/07/2020

Justin Lieu - *Justin Lieu 10/14/2020*

Seth Albrecht - *Seth Albrecht 10/14/2020*