Software Requirements Specification

for

the Camp Voyager Class Rank & Sort System

Version 0.1 (draft)

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Team 2

02/09/2020

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Revision History

Name	Date	Reason For Changes	Version
Amir Jalili, Arun Sharma, Nicholas Lovdahl, and Taylor O'Neill	2/09/20	Completion of the initial draft of the SRS for CRSS.	0.1

1. Introduction

1.1 Purpose

The purpose of this document is to provide a detail of system and user requirements for The Camp Voyager Class Rank and Sort System (CRSS). CRSS is a system to assist with organizing camping activities at Camp Voyager. CRSS should ease the burden of organizing and scheduling classes at the camp for the staff of Camp Voyager. This will be done by allowing the system to organize camp sessions, class sections, and information about the users so that scheduling and administrative tasks can be automated and made available more freely.

1.2 Document Conventions

This document was created by following the IEEE format for System Requirement Specification documents. Currently, it is assumed that all system features have equal priority based on the degree to which they appear to interlock. Further elicitation with the client may reveal preferences or desires as to what is important in the system (relative to its components).

1.3 Intended Audience and Reading Suggestions

This document is primarily intended for the developers of the project team working on the CRSS system; Its contents should inform as to what the project is and what the desires of the client are. However, the contents of this document should also be able to demonstrate to the client that their desires have been understood correctly and in their entirety. As such, this document outlines the functional and non-functional requirements for the CRSS, its interfaces, and the conditions that it can be used in. The writing should be understandable to those outside of the immediate development of CRSS.

This document is not meant to detail the implementation of CRSS, only the specifications to which it must conform. Separate documentation should be prepared alongside the development of CRSS pertaining to both its implementation and operation for users.

1.4 Product Scope

CRSS is a software that allows the campers of the Camp Voyager to log in and rank the classes that they prefer to take. After the completion of class registration period, camp directors (administrators) run the software to place the campers in the classes based on their rankings. Campers can then view their class schedules online for a given session. Instructors also can view the classes that they will be teaching as well as the class information. After the completion of the registration period, the system goes on a lock down and does not allow the campers to create rankings anymore. Only the camp directors will be given permission to manually edit class lists and add / remove campers from classes.

1.5 References

- IEEE Template for System Requirement Specification Documents - This template was developed by Karl Wiegers in 1999.

2. Overall Description

2.1 Product Perspective

CRSS was commissioned by Camp Voyager to facilitate the organization of camp activities. Camp Voyager is a Summer Camp that offers fun and educational opportunities to the students.
The main objective of CRSS is to assist camp directors with registration and scheduling of classes that the campers would attend in a camp session. The system ensures that each camper is assigned to classes that they are most interested in. This is done by a ranking system that each camper should fill out before the registration period is over.

2.2 Product Functions

- Ranking: Campers can log in and rank the classes that they want to attend in the camp.
- Sorting and scheduling: After the the registration period is over, camp directors can log in and run the software to place to schedule all the campers and place them in different classes. The software should also schedule instructors for different classes.
- Class information Input: Camp directors can login at any point to add/edit the class information.
- Displaying the schedules: After the scheduling is done, campers can login and view their class schedule, they can also print the schedule. Instructors can also login and view/print a report of the current class list. Instructors can also see a camper's schedule online.
- Manual Entry: Only the camp directors have access to manually edit class lists and add/remove campers from classes after the registration period is over.

2.3 User Classes and Characteristics

CRSS has three anticipated classes of users: administrators, instructors, and attendees. These different user groups have differing levels of access to the capabilities of the system - some system features may be usable / exposed to one user group but not to another. However, all user groups share some commonalities. Upon a successful log in to the system, all users are directed to a main menu page which has different functionalities depending on the class of users.

Attendees will be the primary users (in terms of numbers) of CRSS. They can log into the system to view different class information and rank the classes they would like to participate in. After the completion of the scheduling process, attendees can view their class schedule online or print them.

Instructors have additional features of the system available to them. They can view their own schedule, class information as well as each campers class schedule.

Administrators have the greatest degree of access relative to any user group. They have access to delete/add a camp session, class sections and their information and create new profiles for each new user. Administrators are also allowed to manually edit class lists and add/remove campers from classes after the system scheduling is completed.

2.4 Operating Environment

The operating environment for CRSS has not yet been thoroughly established and requires further elicitation from the client. Refer to the questions at the end of the section.

2.5 Design and Implementation Constraints

Constraints related to policy and or hardware / software available to the client have not yet been thoroughly established and require eliciation from the client. Refer to the questions at the end of the section.

2.6 User Documentation

Documentation related to the maintenance and operation of CRSS should be prepared alongside its development. This documentation should be understandable to the client (do not assume technical expertise, explain operations, avoid buzzwords).

Since there are three distinct user groups (Campers, Instructors, and Administrators), documentation informing users of how to use the software should be made available as either three separate documents for their appropriate user groups, or as one document divided into three parts. This should allow users to more easily access documentation which is relevant to them.

2.7 Assumptions and Dependencies

No details about any preexisting system, dependencies, or requirements have been established yet. Further elicitation with the client should provide clarification about what, if any, exists already in Camp Voyager and whether it can or should be used with CRSS.

3. External Interface Requirements

3.1 User Interfaces

The system will support easy to understand interfaces that will allow users to clearly execute each use case described in Section 5. The following interface types will be supported:

- A “login” screen - This interface will prompt the user to insert their respective login information.

- A “Course Management” screen - This interface to the software will allow validated personnel to create camp sessions and the various courses that will be offered during the section. Once a class is created, the interface will clearly display the course name, instructor, date and time offered. If the user clicks on the course, a drop down window will open that will allow users to add or remove a camper from a course, view course statistics, and remove the course.
    - Adding/Removing a student from a course - If this option is selected, an interface will be provided that shows the current students enrolled in the course. The interface will also have an add button that will be used to add students to the course.
    - View course statistics - A window will pop up that will display the name of the course, the instructor, the session it is offered, the date and time of the course, the location, its current enrollment, its max capacity, and and an area for notes. If the user is a camp director, they will be allowed to modify course attributes.
    - Removing a course - If this option is selected, a pop up window will be displayed that will verify if the user wants to execute this action
- A “rank” screen - When a student logs in before the registration period has closed, they will be shown a list of all of the courses that are available in the current session. A text box will be placed under each course that users will fill in with their rank for that course. There will be a “submit” button at the bottom of the screen that will allow students to submit their rankings.
- A “class schedule” screen for students and instructors - When students or instructors want to access their schedule, the interface will display a Monday through Friday calendar for each session. Under each day of the week, the users schedule will be displayed, showing the name of the course, the instructor, the location, special instructions, and the time of the course. The top right of the screen will display a “print” button.
- A “view student schedule” screen - This interface will display a list of all of the students names. Clicking on a students name will bring the user to a screen that shows the students Monday-Friday schedule for each camp session.
- A main screen for the camp director - If a camp director logs into the system, they will be brought to a home screen that displays a list of options. The options shown will be “Perform Scheduling”, “Lock Rankings”, “Course Management”, and “View Student Schedules”.
    - Perform Scheduling - If this option is selected, a window will pop up and verify if the user wants to execute this action.
    - Lock Rankings - If this option is selected, a window will pop up and verify if the user wants to execute this action.
    - Course Management - This option will bring the user to the “course management” interface described in this section.
    - View Student Schedules - This option will bring the user to the “view student schedule” interface described in this section.

3.2 Hardware Interfaces

The system will be a stand alone software and will contain no interface with particular hardware devices. This may change pending further elicitation with the client.

3.3 Software Interfaces

The system will interface with a database that stores user information and information about the available camp sessions and class sections. Upon login, the system will extract user information from the database. The information extracted will dictate what the user has access to while using the system.

3.4 Communications Interfaces

The exact mechanisms to be used by CRSS for communication have not yet been thoroughly established. Further elicition with the client is required. Exactly how the users are to interact with the system and what environment CRSS will be operating in will change the needs of the client and likewise the approach to addressing those needs.

4. System Features

4.1 Add Camp Session

Name	Add Camp Session.
ID	UC_01
Description	Before creating a class section, a camp session must be created for the section to reference to.
Actors	Users in the Administration Group.
Organizational Benefits	A camp session keeps the information used for the organization of classes such as the blocks of times that classes take place.
Frequency of Use	Once per camp session. There will be at least four camp sessions each summer.
Triggers	A user in the Administration Group chooses to add a camp session.
Preconditions	User is logged in and is in the Administration Group.
Postconditions	A new camp session is created.
Main Course	1. System prompts the user to enter information about the new camp session: the year of the session, the session's number for that year, and the times for the blocks for the session.

	2. System verifies that the information given by the user is valid and well-formed (see EX1). 3. System verifies that no other session exists with the same year and session number (see EX2). 4. System asks for confirmation from the user to create the given session and that the information given is correct (see AC3). 5. System creates an entry for the camp session using the given information that may then be referenced within the system.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits attempt to create a new session. 1. System discards any information which was entered but not submitted. AC3: User does not confirm that the session should be created. 1. System returns the user to Main Course step 1, saving the information which was previously entered.
Exceptions	EX1: Information entered is invalid or not well-formed. 1. Inform the user which information is invalid or not well-formed. 2. System returns the user to Main Course step 1, saving the information which was previously entered. EX2: A camp session already exists with the same year and session number. 1. Inform the user that the session with the desired year and session number already exists. 2. System returns the user to Main Course step 1, saving the information which was previously entered.

4.2 Create Class Section

Name	Create Class Section.
ID	UC_02
Description	A camp section is created in the context of a camp session. The camp section is for a class and has its own time block, instructor, and other details associated with that particular section.
Actors	Users in the Administration Group.
Organizational Benefits	A class section keeps the information used for the organization of individual class sections offered.
Frequency of Use	This use case will be invoked as each section for classes offered at camp will need to be created. It can be expected that this shall occur often when a new camp session is being prepared for.

Triggers	A user in the Administration Group chooses to add a class section.
Preconditions	User is logged in and is in the Administration Group. There exists a camp session for the class section to be in. There exists users in the Instructor Group to teach the class section.
Postconditions	A new camp section is created.
Main Course	1. System prompts the user to select which camp session the new class section is in. 2. System prompts the user to select which time block the new class section will be in. 3. System prompts the user to select which Instructors will be teaching the new class section. 4. System verifies that the same Instructor is not teaching a different class during the selected time block (see EX1). 5. System prompts the user to enter information about the new class section: the class' title, the location of the class, the enrollment capacity of the class, and notes about the class. 6. System verifies that the information given by the user is valid and well-formed (see EX2). 7. System asks for confirmation from the user to create the given class section and that the information given is correct (see AC3). 8. System creates an entry for the class section using the given information that may then be referenced within the system.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits attempt to create a new class section. 1. System discards any information which was entered but not submitted. AC3: User does not confirm that the class section should be created. 1. System returns the user to Main Course step 1, saving the information which was previously entered.
Exceptions	EX1: The Instructor is teaching a different class during the same time block. 1. Inform the user that the selected Instructor is already teaching a class during the selected time block. 2. System returns the user to Main Course step 2, saving the information which was previously entered. EX2: Information entered is invalid or not well-formed. 1. Inform the user which information is invalid or not well-formed. 2. System returns the user to Main Course step 4, saving the information which was previously entered.

4.3 Remove Class Section

Name	Remove Class Section.
ID	UC_03
Description	An existing class section is removed from the system.
Actors	Users in the Administration Group.
Organizational Benefits	The ability to remove class sections allows Administrators to remove class offerings, possibly to fix mistakes or respond to a change in plans.
Frequency of Use	This use case will be invoked whenever a class section must be removed. It can be expected that this may occur several times when a new camp session is being prepared for, although it may also occur during a camp session.
Triggers	A user in the Administration Group chooses to remove a class section.
Preconditions	User is logged in and is in the Administration Group. A class section exists to be removed.
Postconditions	A selected class section is removed from the system.
Main Course	1. System prompts the user to select which camp session the class section to be removed is in. 2. System prompts the user to select which class section in the given camp session should be removed. 3. System asks for confirmation from the user to remove the given class section (see AC3). 4. System removes all references from the class section to be removed. 5. System removes the class section so it can no longer be referenced.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits attempt to remove class section. 1. System discards any information which was entered but not submitted. AC3: User does not confirm that the class section should be removed. 1. System returns the user to Main Course step 1, saving the information which was previously entered.
Exceptions	N/A

4.4 Create Profile

Name	Create Profile.
ID	UC_04
Description	A profile for a new user is created on the system.
Actors	Users in the Administration Group.
Organizational Benefits	The creation of profiles allows new users to interact with the system. This means that new attendees, instructors, and administrators can be introduced.
Frequency of Use	This use case will be invoked when a new user must be introduced to the system. This will probably occur when preparing for a new camp session as new attendees and instructors are entered into the system.
Triggers	A user in the Administration Group chooses to add a new user.
Preconditions	User is logged in and is in the Administration Group.
Postconditions	A new profile is created with a username and password.
Main Course	1. System prompts the user to enter information about the new camp session. Exactly what information is collected as this point requires elicitation from the client. 2. System verifies that the information given by the user is valid and well-formed (see EX1). 3. System verifies that no other user exists with the same distinguishing information (see EX2). Exactly what information must be unique requires elicitation from the client. 4. System prompts the user to select which user group the new profile belongs to. 5. System asks for confirmation from the user to create the profile and that the information given is correct (see AC3). 6. System generates a username and password for the profile. 7. System creates the profile with the given information that may then be referenced within the system. 8. System gives the username and password for the new profile.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits attempt to create profile. 1. System discards any information which was entered but not submitted. AC3: User does not confirm that the profile should be created. 1. System returns the user to Main Course step 1, saving the information which was previously entered.

Exceptions	EX1: Information entered is invalid or not well-formed. 1. Inform the user which information is invalid or not well-formed. 2. System returns the user to Main Course step 1, saving the information which was previously entered. EX2: A profile already exists with the same distinguishing information. 1. Inform the user that a profile with the same distinguishing information already exists. 2. System returns the user to Main Course step 1, saving the information which was previously entered.

4.5 Login

Name	Login.
ID	UC_05
Description	A user logs into the system with a username and password to interact with it.
Actors	All Users.
Organizational Benefits	A login allows for only authorized users to interact with the system. Furthermore, it allows for the system to restrict access to different parts and actions within the system to just the users with the appropriate rights.
Frequency of Use	This use case will be invoked whenever a user interacts with the system.
Triggers	A user attempts to log in or otherwise access some part of the system.
Preconditions	A profile for the user has already been created with the system.
Postconditions	The user is logged into the system and is given access to its parts for which the user has rights to (determined by user group).
Main Course	1. System prompts the user for their username and password. 2. System verifies that a profile with that matching username and password exists (see EX1). 3. System gives access to the user under the respective profile.
Alternate Courses	AC1: The user is already logged in. 1. System returns the user to Main Course step 3.
Exceptions	EX1: There is no profile with a matching username and password. 1. System informs the user that they have not entered a matching

	username and password. 2. System returns the user to Main Course step 1.

4.6 Logout

Name	Logout.
ID	UC_06
Description	A user that is currently logged into the system logs out.
Actors	All users.
Organizational Benefits	Logging out allows for a user to keep their access to themselves when they are done using the system - the system cannot be accessed by a user unless they have logged in.
Frequency of Use	This will (eventually) occur every time a user logs into the system.
Triggers	The user chooses to log out of the system or their connection is otherwise terminated.
Preconditions	The user is logged into the system.
Postconditions	The user is logged out of the system.
Main Course	1. System logs out the user such that further attempts to access the system will require the user to log back in.
Alternate Courses	N/A
Exceptions	N/A

4.7 Rank Classes

Name	Rank Classes.

ID	UC_07
Description	The user ranks up to 10 classes that they would like to take.
Actors	Users in the Attendees Group.
Organizational Benefits	Allows the campers to participate in the classes that they are most interested in - leading to having a better experience in the camp.
Frequency of Use	Campers are encouraged to submit their rankings, but it is not guaranteed that they will. Whether or not campers may submit more than one ranking (to update their preferences) is not known. Further elicitation from the client is required.
Triggers	A user in the Attendees Group logs chooses to submit a ranking of classes.
Preconditions	The user must be logged into the system and is in the Attendees Group. The latest camp session must not be locked, and it must have at least ten different classes to rank.
Postconditions	The rankings of different classes for the user are submitted.
Main Course	1. System verifies that the latest camp session has not been locked (see EX1). 2. System prompts the user to select up to 10 classes to rank. 3. System asks for confirmation from the user to submit their rankings and that they are sure the provided rankings are correct (see AC3). 4. System verifies that no two classes have the same ranking and that no class has more than one ranking (see EX2). 5. System submits the rankings which may then be used when the system generates schedules.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits attempt to submit rankings. 1. System discards any information which was entered but not submitted. AC3: User does not confirm that they want to submit rankings. 1. System returns the user to Main Course step 2, saving the information which was previously entered.
Exceptions	EX1: User tries to access the ranking form after the registration period is over. 1. System informs the user that the current camp session is locked and no rankings may be submitted. 2. System redirects the user away from the ranking form (to a homepage or the equivalent to a homepage in the system). EX2: User ranks classes in an invalid way. 1. System informs the user that their class ranking is invalid. 2. System returns the user to Main Course Step 2, saving the information

	which was previously entered.

4.8 Lock Rankings

Name	Lock Rankings.
ID	UC_08
Description	The latest session which is not locked is locked so that no additional class rankings can be submitted by campers.
Actors	Users in the Administration Group.
Organizational Benefits	After locking down the system, administrators can run the system to do the scheduling for all the campers and instructors.
Frequency of Use	Once per camp session.
Triggers	A user in the Administration Group chooses to lock a camp session.
Preconditions	User is logged in and is in the Administration Group. There exists a camp session which has not yet been locked.
Postconditions	The lastest camp session which was not locked becomes locked.
Main Course	1. System asks for confirmation from the user to lock rankings (see AC3). 2. System locks rankings for the latest camp session.
Alternate Courses	AC1: User logs out. 1. System does nothing. AC2: User quits attempt to lock rankings. 1. System does nothing. AC3: User does not confirm that they want to lock rankings. 1. System returns the user to Main Course step 1.
Exceptions	N/A

4.9 Run Scheduling

Name	Run Scheduling.
ID	UC_09
Description	System assigns classes to all the campers based on their class rankings. Preference is given on a first-come, first-served basis.
Actors	Users in the Administration Group.
Organizational Benefits	System takes care of scheduling all the campers and instructors to different classes, saving time for the administrators compared to if the scheduling were done manually at all times.
Frequency of Use	Once per camp session.
Triggers	A user in the Administration Group chooses to run scheduling.
Preconditions	The use is logged in and is in the Administrators Group. There exists a camp session which has not already run any scheduling.
Postconditions	Schedules are created for all campers by the system based on submitted class rankings (where possible).
Main Course	1. System prompts the user to select a camp session to create schedules for. 2. System verifies that the selected camp session has been locked (see EX1). 3. System verifies that the selected camp session has not already run any scheduling (see EX2). 4. System asks for confirmation from the user to create schedules (see AC3). 5. System creates schedules for all campers. Campers that have submitted rankings first are prioritized and the system tries to honor rankings as best it can. 6. System adds any campers who have not submitted rankings or whose rankings cannot be honored into classes based on availability. 7. System creates an entry that scheduling has been run for this camp session. No future scheduling will be possible for the selected camp session except for manual changes by Administrators.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted.

	AC2: User quits attempt to run scheduling. 1. System discards any information which was entered but not submitted. AC3: User does not confirm running scheduling. 1. System returns the user to Main Course step 1, saving the information which was previously entered.
Exceptions	EX1: The selected camp session has not been locked. 1. Inform the user that the selected camp session has not been locked and scheduling cannot be done yet. 2. System returns the user to Main Course step 1, saving the information which was previously entered. EX2: Scheduling has already been run on the selected camp session. 1. Inform the user that the selected camp session has already been run and any changes must be done manually. 2. System returns the user to Main Course step 1, saving the information which was previously entered.

4.10 Add Camper to Class

Name	Add Camper to Class.
ID	UC_10
Description	A camper is manually enrolled in a given class section.
Actors	Users in the Administration Group.
Organizational Benefits	Campers can be manually added to classes so that changes can be made to the schedule outside of the automated scheduling done by the system, allowing more flexibility for the client.
Frequency of Use	This use case will be invoked whenever an Administrator the new camper enrolled or request to change a particular class or camp session. It can be expected that this shall occur often when a new camp session is being prepared for.
Triggers	A user in the Administration Group chooses to add a camper to a class section.
Preconditions	User is logged in and is in the Administration Group. There exists a profile in the Attendees Group for the camper being added. There exists a class section in the system.
Postconditions	The camper is enrolled in the selected class section.
Main Course	1. System prompts the user to select which camp session the class

	section that the camper will be added to is in. 2. System prompts the user to select the class section in the given camp session that the camper will be added to. 3. System prompts the user to select the profile of the camper to add to the given class section. 4. System asks for confirmation from the user to add the camper to the given class section (see AC3). 5. System verifies that adding the camper to the class section will not put that class section at over-capacity (see EX1). 6. System enrolls the camper to the selected class section.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits attempt to add camper to class section. 1. System discards any information which was entered but not submitted. AC3: User does not confirm that the camper should be added to the class. 1. System returns the user to Main Course step 1, saving the information which was previously entered.
Exceptions	EX1: Adding the camper to the class would put it at over-capacity. 1. System informs the user that adding the camper to the selected class section would put the class at over-capacity and so cannot be done. 2. System returns the user to Main Course step 1, saving the information which was previously entered.

4.11 Remove Camper from Class

Name	Remove Camper from Class.
ID	UC_11
Description	A camper is manually unenrolled in a given class section.
Actors	Users in the Administration Group.
Organizational Benefits	Campers can be manually removed from classes so that changes can be made to the schedule outside of the automated scheduling done by the system, allowing more flexibility for the client.
Frequency of Use	This use case will be invoked whenever an Administrator the new camper enrolled or request to change a particular class or camp session. It can be expected that this shall occur often when a new camp session is being prepared for.
Triggers	A user in the Administration Group chooses to remove a camper from a class

	section.
Preconditions	User is logged in and is in the Administration Group. There exists a class section in the system with at least one enrolled camper.
Postconditions	The camper is unenrolled in the selected class section.
Main Course	1. System prompts the user to select which camp session the class section that the camper will be removed from is in. 2. System prompts the user to select the class section in the given camp session that the camper will be removed from. 3. System prompts the user to select the profile of the camper to be unenrolled from the given class section from a list of campers enrolled in that section. 4. System asks for confirmation from the user to remove the camper from the given class section (see AC3). 5. System un-enrolls the camper from the selected class section.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits attempt to add camper to class section. 1. System discards any information which was entered but not submitted. AC3: User does not confirm that the camper should be added to the class. 1. System returns the user to Main Course step 1, saving the information which was previously entered.
Exceptions	N/A

4.12 View Camper's Schedule

Name	View Camper's Schedule.
ID	UC_12
Description	A user views their schedule online.
Actors	All users.
Organizational Benefits	Class schedules can be read, including relevant information about that class (location, notes, etc.).
Frequency of Use	This use case will be invoked whenever the user goes to view the schedule. This can happen multiple times over the course of the camp session.
Triggers	A user chooses to view the schedule.

Preconditions	The user must logged into the system. Schedules must have already been generated by the system for the latest camp session.
Postconditions	The user is shown the schedule for the latest camp session.
Main Course	1. System determines which user group the user is in (see AC1, AC2). 2. System shows the relevant schedule to the user for the latest camp session.
Alternate Courses	AC1: The user is in the Attendees Group. 1. System selects the class schedule for only the attendee as the relevant schedule. No other users' schedules can be seen. AC2: The user is in the Instructor or Administration Group. 1. System prompts the user to select the profile of the user whose schedule they wish to view. 2. System prompts the user to select which schedule for the given user they wish to view (schedules for different camp sessions). 3. System selects the chosen class schedule for the selected user for the selected camp session as the relevant schedule. AC3: User logs out. 1. System discards any information which was entered but not submitted. AC4: User quits attempt to view schedule. 1. System discards any information which was entered but not submitted.
Exceptions	N/A

4.13 View Class Statistics

Name	View Class Statistics.
ID	UC_13
Description	A user views information related to a particular class section: the class' title, the location of the class, enrollment capacity, notes about the class, campers currently enrolled in the section, etc.
Actors	Users in the Instructor Group or Administration Group.
Organizational Benefits	The instructor can check and evaluate the overall class statistics to provide better instruction and operation.
Frequency of Use	This use case can be invoked whenever an instructor or administrator ngoes to view class statistics. This can happen multiple times over the course of the camp session.

Triggers	A user in the Instructors or Administration Group chooses to view class statistics.
Preconditions	The user must logged into the system and is either in the Instructors Group of the Administrators Group. There exists a class section to view statistics of.
Postconditions	The user is shown the class statistics of a particular class section for a given camp session.
Main Course	1. System prompts the user to select which camp session the class section to be viewed is in. 2. System prompts the user to select the class section in the given camp session to be viewed. 3. System shows the class statistics for the selected class section in the given camp session.
Alternate Courses	AC1: User logs out after selecting class section. 1. System discards any information which was entered but not submitted. AC2: User quits while attempting to print camper's schedule. 1. System discards any information which was entered but not submitted.
Exceptions	N/A

4.14 Print Camper's Schedule

Name	Print Camper's Schedule.
ID	UC_14
Description	The user can print out a copy of the schedule that they are currently viewing.
Actors	All users.
Organizational Benefits	Printing out a copy of a schedule allows users to reference that schedule without needing to access the system every time.
Frequency of Use	This use case will invoke whenever the user wants to print a schedule. This can happen multiple times over the course of a camp session.
Triggers	A user chooses to print a schedule that they are currently viewing.
Preconditions	The user must logged into the system. The user must be viewing a schedule (see the "View Camper's Schedule" use case).
Postconditions	The user gets a printed copy of the schedule they were viewing.

Main Course	1. System prints out a copy of the schedule that the user is currently viewing.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits while attempting to print camper's schedule . 1. System discards any information which was entered but not submitted.
Exceptions	N/A

4.15 Print Class List

Name	Print Class List.
ID	UC_15
Description	A user prints out a current class list for a given class section.
Actors	Users in the Instructor Group or Administration Group.
Organizational Benefits	Printing out a copy of a class list lets instructors understand who is taking their classes, along with any other relevant information.
Frequency of Use	This use case will invoke whenever the user wants to print the class list. This can happen multiple times over the course of the camp session.
Triggers	Users in the Instructor or Administration Group choose to print a class list.
Preconditions	The user must logged into the system and is either in the Instructors Group of the Administrators Group. There exists a class section to print a class list for.
Postconditions	The user gets a printed copy of the class list they selected.
Main Course	1. System prompts the user to select which camp session the class section to print a class list for is in. 2. System prompts the user to select the class section in the given camp session to print a class list for. 3. System prints out a copy of the class list for the selected class section in the given camp session.
Alternate Courses	AC1: User logs out. 1. System discards any information which was entered but not submitted. AC2: User quits while attempting to print class list. 1. System discards any information which was entered but not submitted.
Exceptions	N/A

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Performance of the software depends upon the ability to interact with other components such as front end, back-end, databases etc. The software should be scalable and should be able to handle large workloads with minimum response time (response should happen in real time for multiple users). Furthermore, there will be some minimum and recommended system requirements that are needed to leverage this performance. However, the exact requirements are unknown at the time. Specific details of the performance require client elicitation.

5.2 Safety Requirements

The software must handle exceptions related to preserving the integrity of the information in the system. For instance, if the system shuts down abruptly, it should be able to recover with as little loss of information as possible to ensure such an event does not inhibit the client's operations. The conditions under which CRSS will be operating will change the requirements of what the system will need to be able to tolerate and how to address the problem that might arise. As such, further elicitation from the client is required.

5.3 Security Requirements

The system will have different levels of access available to users to restrict inappropriate use of the system and to keep information safe. Administrators have the privilege to view profiles of the instructor and the campers, Instructors have the privilege to view campers information enrolled in the assigned class section, and Campers can view their own class schedule and the other classes but cannot view neither administrator nor instructor profile.

The system should have client certificate authentication when the user tries to log in to their respective profile, preventing unauthorized usage of the system, which could damage the integrity of the system and inhibit the operations of the client, or lead to the breach of personal information stored in the system. However, detailed descriptions of the type of certification require client elicitation and further technical development.

5.4 Software Quality Attributes

Software quality ensures availability, usability, and effectiveness of the software which can vary from client to client in terms of user satisfaction. Hence in terms of expected standards, we need client elicitation for these requirements.

5.5 Business Rules

This requirement needs client elicitation since we do not know whether it's a profit or non-profit organization. It is also unknown where Camp Voyager is located and what laws (Federal, State, and local) would apply. Further elicitation from the client as well as legal advice will be required.

6. Other Requirements

There are no additional requirements for CRSS which are currently known. Future elicitation with the client may change this.

Appendix A: Glossary

This section contains a list of terms used in the document which may require further explanation.

- CRSS: The acronym for “Class Rank and Sort System”, the name of the product being developed.
- SRS: The acronym for “Software Requirements and Specifications”, a document which lays out the requirements and specifications that a software product should conform to. In the context of this project, that refers to this document.

Appendix B: To Be Determined List

The following is a list of topics which require further elicitation from the client in order to clarify their desires and specify exactly how CRSS should operate.

1. What information does the system take when creating a profile for new users? Does it need their first and last names, contact information, etc.? Which pieces of information are required for the creation of a profile and which (if any) are optional?
2. How should the system generate usernames? Should it use the information given in their profiles to generate usernames?
3. Can campers submit more than one ranking, or are they limited to a single ranking submission per camp session?
4. Do Instructors have a registration period? Do they get locked out from making changes at some point?
5. If a class is altered / removed, should the system be responsible for notifying the users affected by the change? If so, how should this be done?
6. If a manual change would cause problems, should the change override those requirements? For example, can an administrator be able to add a camper to a full class?
7. Should the system be responsible for notifying the users affected by manual changes?

8. What is meant by administrators analyzing “student needs (empty blocks/duplicates/etc.)”? Exactly what information is entailed by this? Is this the same as the administrator viewing class statistics?
9. In what context will users be able to access this system? Will it be through a web browser? If so, which web browsers (and versions) are supported? Which protocol will be used to access the system?
10. In the initial requests, no mention of previous systems related to the tasks carried out by CRSS were mentioned. It is assumed that CRSS will be developed as an entirely new, stand-alone system. Is this the case or does the client have any existing systems that they wish to be used?
11. Where is Camp Voyager? What laws and conditions will apply to the system?
12. Under what conditions will users be interacting with CRSS under? Does Camp Voyager have Internet access available for users? Does it have facilities / equipment for users to interact with the system? Will users be expected to use their own devices prior to arrival at the camp?
13. Will the software be running on specific lab machines in the camp or is it a website that users login and use it? Is it both?
14. If the software is going to run on specific lab machines, do all machines have the same operating system and the version, or do they run on different operating systems?
15. Are certain parts of features more or less important to the client? What do they want and how do they intend to use different parts of the system?
16. Does the client have an idea of how frequently certain parts of the system will be used? Would it be possible to infer this from the client’s past history?
17. What is the overall business model of Camp Voyager? Is there any business driven motivation for setting up the summer camp? If so, does CRSS help to maximize the profit ?