

Software Requirements Specification for Software Engineering: subtitle describing software

Team #2, Campus Connections

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Revision History

Date	Version	Notes
Date 1	1.0	Notes
Date 2	1.1	Notes

1 Purpose of the Project

1.1 User Business

Insert your content here.

1.2 Goals of the Project

Insert your content here.

2 Stakeholders

2.1 Client

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2.2 Customer

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2.3 Other Stakeholders

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2.4 Hands-On Users of the Project

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2.5 Personas

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2.6 Priorities Assigned to Users

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2.7 User Participation

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2.8 Maintenance Users and Service Technicians

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3 Mandated Constraints

3.1 Solution Constraints

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3.2 Implementation Environment of the Current System

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3.3 Partner or Collaborative Applications

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3.4 Off-the-Shelf Software

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3.6 Schedule Constraints

Insert your content here.

3.7 Budget Constraints

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3.8 Enterprise Constraints

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4 Naming Conventions and Terminology

4.1 Glossary of All Terms, Including Acronyms, Used by Stakeholders involved in the Project

Insert your content here.

5 Relevant Facts And Assumptions

5.1 Relevant Facts

Insert your content here.

5.2 Business Rules

Insert your content here.

5.3 Assumptions

Insert your content here.

6 The Scope of the Work

6.1 The Current Situation

Currently, students do not have effective ways to connect with peers of same interest and resources available on campus. One of the most accessible tools for students to utilize campus resources is Oscarplus. However it is for McMaster students and Alumni only, and does not support interactions between users – users cannot see if their friends and classmates are joining the events nor send/read comments from others.

As for room availability information, there is no official management system for visitors and students. Students always occupy empty rooms their

found to meet with friends and classmates. Due to poor management and messy process, it is usually very difficult to find an appropriate place for team discussion and club events.

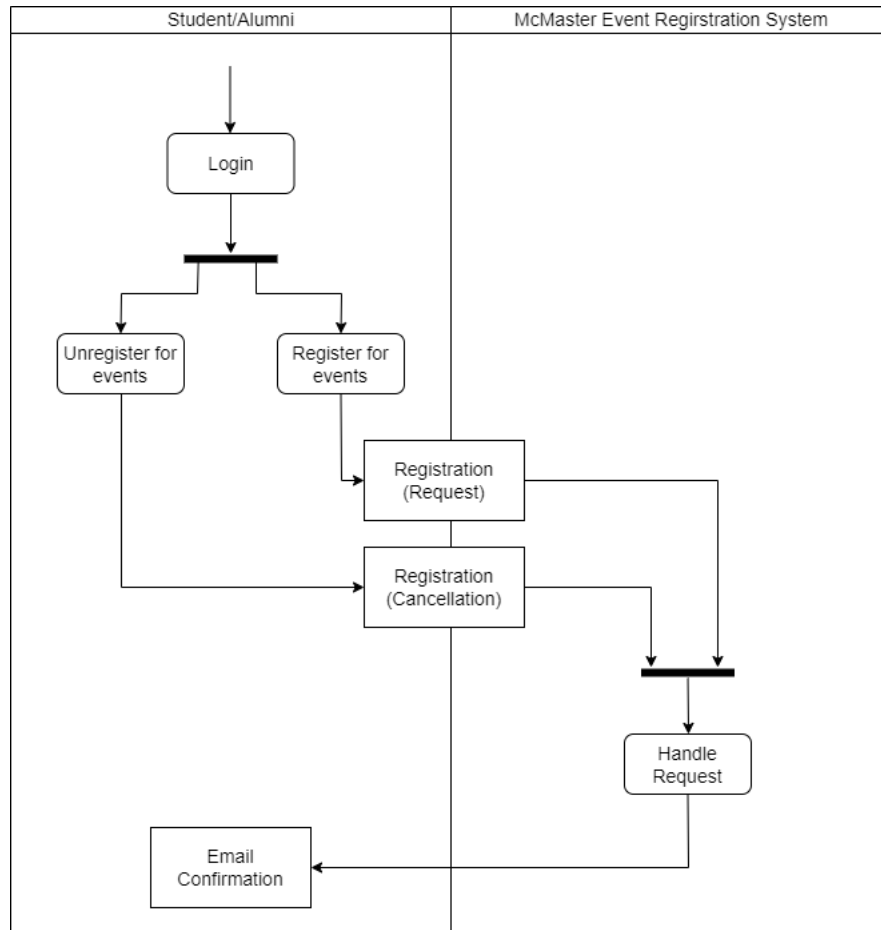


Figure 1: Context Diagram

6.2 The Context of the Work

The context diagram depicted below illustrates the interactions of the system with adjacent external systems and services.

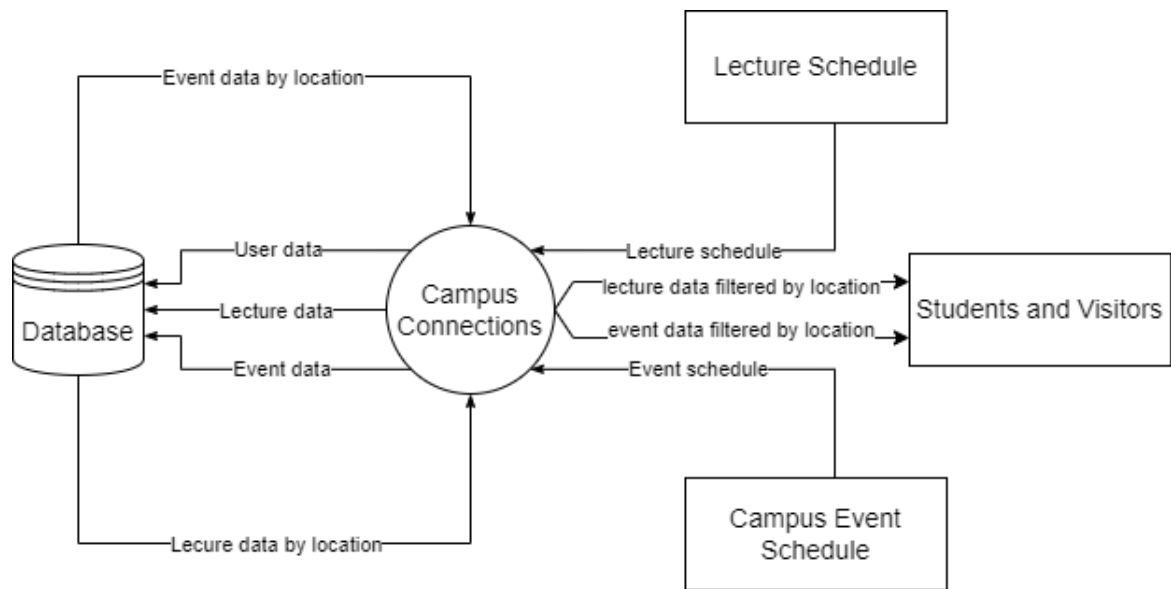


Figure 2: Current Event Registration Situation

6.3 Work Partitioning

Table 1: Business Event List

Event Name	Input/Output	Summary
Provide lecture schedule	IN: Lecture schedule	Give schedule of lectures when there is an update and after every semester
Provide event schedule	IN: Event schedule	Give schedule of campus events periodically and when there is an update
Record user data	OUT: User data	Record user related data, including user settings, user friends and registered events
Record lecture data	OUT: Event data	Record lecture data, including lecture name, time, duration and location
Record event data	OUT: Event data	Record event data, including event name, time, duration and location
Display event schedule	IN: event data, OUT: event data filtered by location	Display events that are going to be held in in a given building
Display lecture schedule	IN: lecture data, OUT: lecture data filtered by location	Display lectures that are going to be held in in a given building

6.4 Specifying a Business Use Case (BUC)

The following is an activity diagram for the Display event schedule process. The trigger of this business user case will be user interaction, and input will

be campus event data from database. What will be displayed is a schedule of events held inside a specific building with detailed event information.

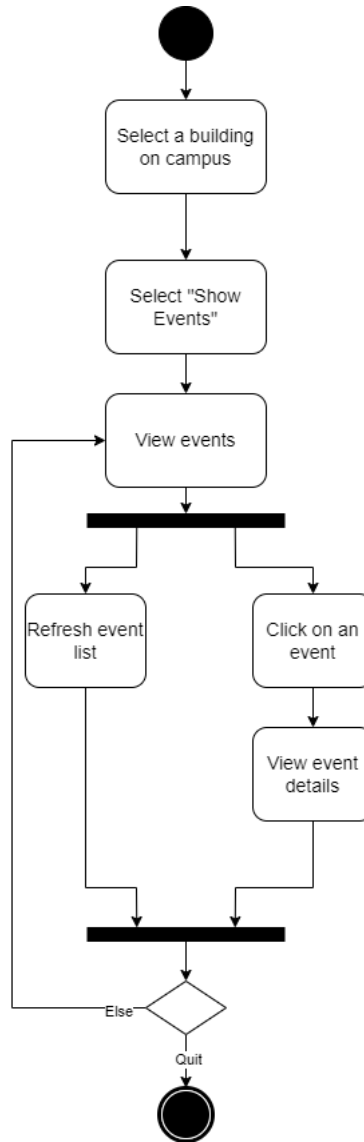


Figure 3: Activity diagram for Display Event Schedule Process

7 Business Data Model and Data Dictionary

7.1 Business Data Model

The following UML class diagram shows all types of business data that will be used in this project.

All the classes represent corresponding business data, all these entries and their attributes will be defined and explained in the data dictionary. class are defined in the data dictionary.

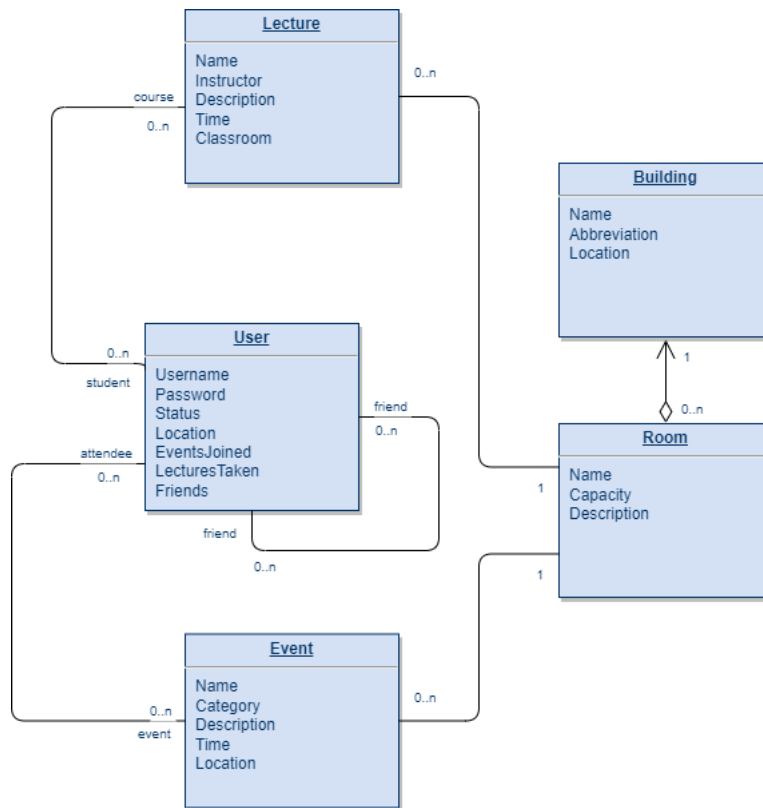


Figure 4: UML class model

7.2 Data Dictionary

This section will include definition of all classes in UML class model and their attributes. Some self-explanatory attributes like name will be ignored.

Table 2: Data Dictionary

Name	Content	Type
Lecture	McMaster course data	Class
Lecture.Instructor	Course instructor	Attribute
Lecture.Time	Course schedule	*HH/MM/SS 24 hour clock*
Lecture.Classroom	Course location	Room
Event	McMaster on-campus event data	Class
Event.Category	Held by which department	Attribute
Event.Time	Event time	*HH/MM/SS 24 hour clock*
Lecture.Location	Event location	Room
User	User account data, friends data, location, event & lecture attendance	Class
User.Location	Geographic location	Attribute
User.Status	Online or not	Boolean, Attribute
User.EventsJoined	List of event	Event, Attribute
User.LecturesTaken	List of lecture	Lecture, Attribute
User.Friends	List of friends	User , Attribute
Building	McMaster main campus building	Class
Building.Abbreviation	Abbreviation of building name	Attribute
Building.Location	Geographic location	Attribute
Room	Room inside a building	Class
Room.Capacity	Room capacity	Number, Attribute

8 The Scope of the Product

8.1 Product Boundary

The use case diagram depicted below identifies the boundaries between the users and the product.

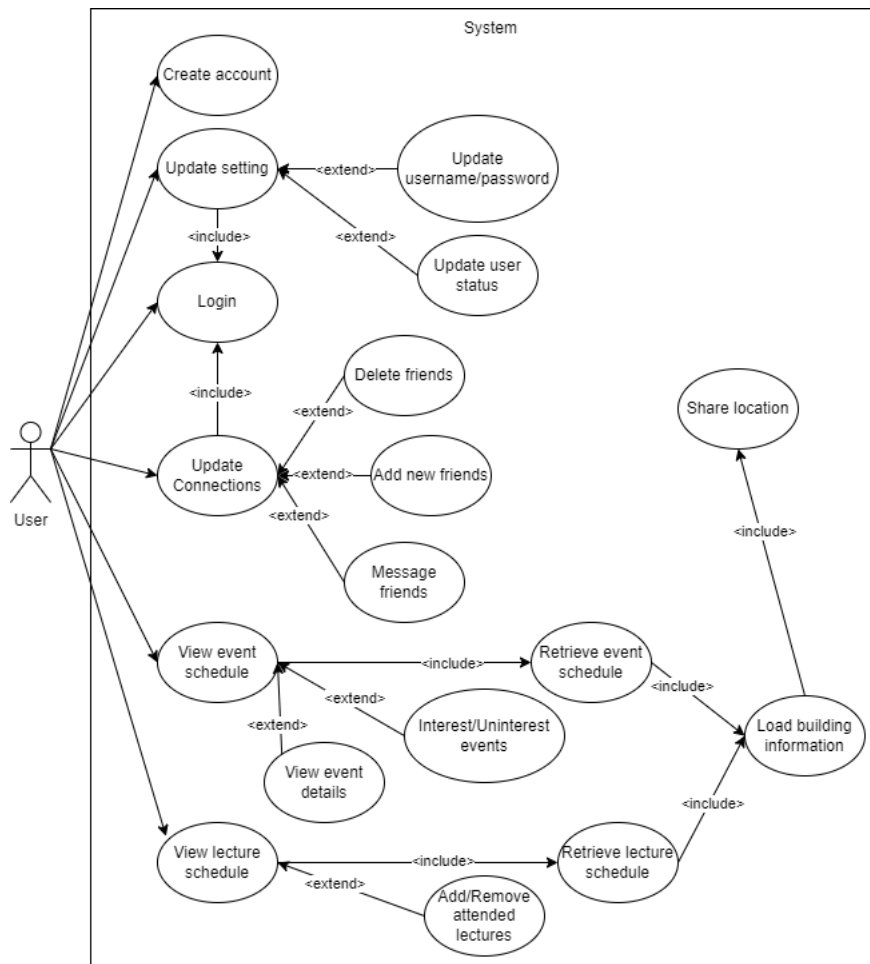


Figure 5: Use Case Diagram

8.2 Product Use Case Table

Table 3: Product Use Case

PUC No	PUC Name	Actor/s	Input & Output
1	Create Account	User	Username & Password (in)
2	Update Password	User	Username & New Password (in)
3	Update User Status	User	New Status (in)
4	Login	User	Username & Password (in), Login Response (out)
5	Add New Friend	User	Friend Username (in), Friend Request (out)
6	Delete Friend	User	Friend Username (in), Confirmation Message (out)
7	Message Friend	User	Message Content (in), Message Sent Notification (out)
8	View Event Details	User	User Interaction (in), Event Information (out)
9	Interest/Disinterest Event	User	User Interaction & Event Name (in)
10	Add/Remove attended lecture	User	User Interaction & Lecture Name (in)
11	Retrieve Event Schedule	System	New Schedule (out)
12	Retrieve Lecture Schedule	System	New Schedule (out)
13	Load Building Information	System	Location & Sensor data (in), Building Name (out)

8.3 Individual Product Use Cases (PUC's)

Use case #1: Create Account

Precondition: None

Trigger: The user clicks on create account button

Outcome

1. User provides the required information
2. System verifies all required information has been provided
3. System securely registers user information
4. Player is redirected back to the Home page

Postcondition: The user has successfully created an account and account information is stored and secured in a database.

Use case #2: Update Password

Precondition: The user has already created an account

Trigger: The user clicks on change password button

Outcome

1. User navigates to change password page
2. User provides old password
3. User provides new password
4. System verifies old password is correct and new password is valid
5. System updates password of current user in the database
6. User is redirected back to the Home page

Postcondition: The user has successfully changed the password.

Use case #3: Update User Status

Precondition: The user has already created an account

Trigger: The user clicks on change status button

Outcome

1. User navigates to change status page

2. User updates status to a new status
3. System updates user status and redirects back to the Home page

Postcondition: The user status has been changed successfully.

Use case #4: Login

Precondition: The user has already created an account

Trigger: The user clicks on login button on the home page

Outcome

1. User navigates to login page
2. System verifies all required information has been provided and matches the database record
3. User is redirected to the home page as a logged-in user

Postcondition: The user has successfully logged in to the created account with all settings and connections loaded from the database.

Use case #5: Add New Friend

Precondition: The user has already logged in

Trigger: The user searches for another user and sends a friend request

Outcome

1. User searches for another user
2. User sends a friend request
3. System sends the request and user information to the destined user
4. Destined user accepts/rejects the request
5. User receives a notification

Postcondition: The user gets a new connection in their friends list.

Postcondition 2: The user is rejected and gets a notification about that.

Use case #6: Delete Friend

Precondition: The user has already logged in and has at least one friend

Trigger: The user clicks delete button on friend page

Outcome

1. User searches for a friend
2. User deletes the friend
3. System sends a confirmation prompt
4. User continues to delete
5. User receives a notification

Postcondition: The friend is deleted from user's friends list.

Use case #7: Message Friend

Precondition: The user has already logged in and has at least one friend

Trigger: The user texts a friend on friend page

Outcome

1. User searches for a friend
2. User start to text the friend
3. System sends message to the destined friend

Postcondition: The friend receives a message from the user.

Use case #8: View Event Details

Precondition: The user has already logged in and necessary sensors are working properly

Trigger: The user clicks on an event

Outcome

1. User moves the device to target a building on campus
2. User finds a list of events
3. User clicks on one of the event
4. System displays more information about the event

Postcondition: The content, time and location of the event are displayed.

Use case #9: Interest/Disinterest Event

Precondition: The user has already logged in and had a target building

Trigger: The user clicks on interest/disinterest button

Outcome

1. User browses the event list of the target
2. User navigates to an event detail page with a specific name
3. User clicks on the corresponding button
4. System sends the request to the database
5. System displays the new state of the event

Postcondition: The user event list in the database is updated and the UI changes correspondingly.

Use case #10: Add/Remove Attended lecture

Precondition: The user has already logged in and had a target building

Trigger: The user clicks on add/remove button

Outcome

1. User browses the lecture list of the target
2. User navigates to a lecture detail page with a specific course code
3. User clicks on the corresponding button
4. System sends the request to the database
5. System displays the new state of the lecture

Postcondition: The user lecture list in the database is updated and the UI changes correspondingly.

Use case #11: Retrieve Event Schedule

Precondition: None

Trigger: A request to update schedule is sent or trigger by the system timer

Outcome

1. System sends a request to the on-campus schedule interface
2. System gets the up-to-date schedule
3. System stores the new schedule to the database

Postcondition: The new schedule is stored in the database and will be utilized later.

Use case #12: Retrieve Lecture Schedule

Precondition: None

Trigger: A request to update schedule is sent or trigger by the system timer

Outcome

1. System sends a request to lecture schedule interface
2. System gets the up-to-date schedule
3. System stores the new schedule to the database

Postcondition: The new schedule is stored in the database and will be utilized later.

Use case #13: Load Building Information

Precondition: None

Trigger: Location Share is allowed and sensors are working properly

Outcome

1. System gets geographic location and sensor data from the device
2. System finds the most likely building on campus
3. System displays building information

Postcondition: The system provides information of the building the user locates now.

9 Functional Requirements

9.1 Functional Requirements

Insert your content here.

10 Look and Feel Requirements

10.1 Appearance Requirements

Insert your content here.

10.2 Style Requirements

Insert your content here.

11 Usability and Humanity Requirements

11.1 Ease of Use Requirements

Insert your content here.

11.2 Personalization and Internationalization Requirements

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11.3 Learning Requirements

Insert your content here.

11.4 Understandability and Politeness Requirements

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12 Performance Requirements

12.1 Speed and Latency Requirements

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13 Operational and Environmental Requirements

13.1 Expected Physical Environment

Insert your content here.

13.2 Wider Environment Requirements

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13.3 Requirements for Interfacing with Adjacent Systems

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13.4 Productization Requirements

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13.5 Release Requirements

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14 Maintainability and Support Requirements

14.1 Maintenance Requirements

Insert your content here.

14.2 Supportability Requirements

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14.3 Adaptability Requirements

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15 Security Requirements

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18 Open Issues

Insert your content here.

19 Off-the-Shelf Solutions

19.1 Ready-Made Products

Insert your content here.

19.2 Reusable Components

Insert your content here.

19.3 Products That Can Be Copied

Insert your content here.

20 New Problems

20.1 Effects on the Current Environment

This application will help students improve certain processes they use to follow and these changes will impact the users. However, the application will not take place of any existing official tools.

Expand Networking

Students will be able to expand networking even more when registering events and attending lectures through this application.

Event Registration

Students will be able to get more information about the events they want to join from peers and alumni, which will allow them find events and clubs of their interest more effectively.

Available Room Management

Student can facilitate this application to get information about available empty rooms while youth visiting the campus can find lectures they'd like to attend on the other hand.

20.2 Effects on the Installed Systems

The application will be completely stand alone and will not be interfacing with any existing systems. As described in the previous section, this appli-

cation should not affect or take place of any existing system.

20.3 Potential User Problems

Any potential adverse reactions related to using the device in which application is being launched on (mobile device or tablet) would extend to the use of this application. Any adverse reactions of Virtual Reality and Augment Reality, like nausea, dizziness and disorientation would be introduced to the use of the application as well.

20.4 Limitations in the Anticipated Implementation Environment That May Inhibit the New Product

Insert your content here.

20.5 Follow-Up Problems

Insert your content here.

21 Tasks

21.1 Project Planning

Insert your content here.

21.2 Planning of the Development Phases

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22 Migration to the New Product

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23 Costs

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24 User Documentation and Training

24.1 User Documentation Requirements

Insert your content here.

24.2 Training Requirements

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25 Waiting Room

Insert your content here.

26 Ideas for Solution

Insert your content here.

Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Lifelong Learning. Please answer the following questions:

1. What knowledge and skills will the team collectively need to acquire to successfully complete this capstone project? Examples of possible knowledge to acquire include domain specific knowledge from the domain of your application, or software engineering knowledge, mechatronics knowledge or computer science knowledge. Skills may be related to technology, or writing, or presentation, or team management, etc. You should look to identify at least one item for each team member.
2. For each of the knowledge areas and skills identified in the previous question, what are at least two approaches to acquiring the knowledge or mastering the skill? Of the identified approaches, which will each team member pursue, and why did they make this choice?