Strategic Marketing Simulator

Project team number

Requirements Document

Senior Project – CIS 4911

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**Abstract**

*Students of the FIU business school take marketing courses to give them a solid understanding of business activities as they relate to target markets, development of pricing models, the promotion of goods and services, the management of business relationships and consumer behavior. Much of the curriculum is theory as it pertains to marketing concepts, but there is something lacking. The subject application, Strategic Marketing Simulator, allows students and instructors to participate in a mockup of a hotel market, where the way a marketing budget is allocated and the state of the market has a direct impact on how the market trends during an interval of time, a period. Additionally, students gain an understanding on how political and social policy, force majeure, supply and demand etc., can affect one company's market share over another.*

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# 1. Introduction

Strategic Marketing Simulator is an educational website designed for marketing students. This website will have the students create a hotel with properties, such as hotel location as well hotel type (luxury or economical). Students will then compete amongst each other for control over the market place. Hotels will a Luxury type will attract more customers that are traveling for leisure, than for business. Similarly, a hotel with an Economical type, will attract more customers that are traveling for business rather than for leisure. The market of customers will then be divided amongst all the hotels based on pricing, advertising, and other parameters.

## Problem definition

University instructors need a means for having their students run simulations of a hotel room sales market to show the impact that different marketing budget allocations will have on the market. These allocations need to take the form of dollars spent on marketing personnel, advertising, and promotions; along with type of hotel and the location of the hotel. The way a student utilizes their budget will ultimately affect the market by either giving him or her competitors a market advantage. By the same token, these students need a means for interpreting the effects of budget allocations that other students have in the same market. Finally, instructors need a way to track these results over varying intervals of time.

## Scope of System

Project scope is the part of project planning that involves determining and documenting a list of specific project goals, [deliverables](http://whatis.techtarget.com/definition/deliverable), tasks, costs and deadlines.

The scope of this system is to design and implement the systems database, and

The system will allow Students to create a Student level user account.

Students will be able to log into the system with their @fiu.edu email and their set password.

Once their account is created and logged in, the system will display the student with a list of games they can join.

The system will allow students to setup the properties and parameters of their hotel.

The system will use these properties/parameters to calculate the performance of the student’s hotel at the end of a period.

The system will give an Instructor/Admin user will have full authority over this system. Admin users will log into the system similarly to student users but an Admin level account can only be created by an existing Instructor/Admin user.

The system will give Administrative user the capability of creating a game and providing which emails are capable to joining that game.

The system will provide a wildcard feature that will be applied to a current period. An Administrative users can set this modifier via the News page.

The system will allow Administrative users to set the lengths of each period.

The system will allow Administrative users to remove users and game entries from the database.

## Definitions, Acronyms, and Abbreviations

1.3.1 Definitions // --add header 3 - jc -- also put these in lex ord

**Actors:** A user of the system or a bot.

**Budget:** an estimate, often itemized, of expected income and expense for a given period in the future.

**Bot**: A program which simulates a student.

**Dashboard**: a panel which displays relevant information about other users hotels from the previous period.

**Decisions**: Budgetary allocations made by a user or bot which affect the market status.

**Game**: A finite number of periods encompassing the entire simulation.

Home page:

**Instructor:** An administrator of the system who can create actor accounts and other instructor accounts.

**Market:** a region in which goods and services are bought, sold, or used.

Metrics:

**Period:** a set length of time in-game.

Password recovery email

**Scoreboard**: a panel which displays all current information about a user's hotel for that period.

**Strategic Marketing Simulator:** Application which simulates the effect of marketing budgets on a hotel room sales market.

**Student:** A user of the system who makes decisions.

**Home**: Home is the page that will first display after a user or instructor logs in.

**Toolbar**: a panel with buttons that will always be visible for both user and instructor. Toolbar is used for navigating through Strategic Marketing Simulator.

1.3.2 Acronyms // add header 3 - jc

1.3.3 Abbreviations // add header 3 - jc

## Overview of document

The feasibility study and project plan document introduces the Strategic Marketing Simulator as a means for instructors to engage his or her students in a marketing simulation application. The Strategic Marketing Simulator is described in detail and is compared to other simulation systems in the market as a way of determining the feasibility of producing it over deploying an alternative systems or continuing use of the current system. Finally, a project plan is presented to show the organization of the project, what hardware and software will be used to develop the project and tasks and milestones required to complete it.

# 2. Current System

The current system of simulation is done through conversation and debate between students in a class setting.  The instructor poses scenarios about trends in the market and asks students for their input about how a marketing budget allocation might affect the market.  The system is limited by the subjective point of view of the instructor in that there is no mathematical formula being deployed to make a decision about how an allocation might affect market status and/or future trends.  This system takes a lot of time to implement and is difficult to continue the same conversation from one class period to another.

## 

# 3. Project Plan (This deliverable only)

Introduce the project plan section (one or two paragraphs)

## 3.1. Project Organization

Product owner: Joseph Cilli

Scrum master: Jeffrey Carman

Development team: Javier Andrial, Jeffrey Carman

Mentor: Masoud

### 3.1.1. Project Personnel Organization

### 3.1.2. Hardware and Software Resources

Windows Server <Insert Version with specs> - wait for dev env

Windows SQL <Insert Version>

Windows <Insert Version with specs> -

Visual Studio

## 3.2. Identification of Tasks, Milestones and Deliverables (work breakdown)

# 4. Proposed System Requirements

# Introduce the chapter (1-2 paragraphs)

## 4.1. Functional Requirements

1. **The System shall allow Student users to create a Student level user account**
   1. This requirement should be intuitive and executes quickly.
   2. Email for account needs to be a valid email
2. **The System shall allow Administrative and Student users to log in**
   1. This function should perform efficiently
3. **The System shall function and appear identical across the major web browsers**
   1. appearance of webpages should be appealing and well colored
4. **The System shall logout the user upon user request**
5. **The System shall reject a user if a login email or password do not match in the database**
   1. If a login is reject. it should be visible apparent that their attempt was rejected
6. **The System shall allow Students to commit strategic decisions to the database once per period**
7. **The System shall allow Users to reset password via the Forgot password functionality**
   1. email response time should be quick
   2. passwords should be random enough to never have duplicates
8. **The System shall allow Students to join an existing game**
   1. this function should be easy, intuitive, and informative
9. **The System shall show Students a sudo news article in the News Tab**
   1. this function should display the text in an appropriate font and font size
10. **The System shall allow Students to view stats for the current period on the metrics page**
11. **The System shall allow Students to view their position amongst the other Students on the homepage**
    1. this function should catch the users attention
12. **The System shall allow Users to navigate through buttons on the toolbar**
    1. this function should be intuitive and appealing
13. **The System shall allow Administrative users to create an Administrative account**
    1. this function should be easy and intuitive
14. **The System shall allow Administrative users to create a Game**
    1. this function should be easy and intuitive
15. **The System shall allow Administrative users to remove entries (Users, Games, Groups) from the database**
    1. this function should scale well for removal of mid-large amounts of entries
16. **The System shall allow Administrative users to add a modifier(wildcard) to a period**
    1. This function should not be confusing to the Administrator
17. **The System shall simulate a market and calculate the performs of each Group for a Game**
    1. this function should be efficient
18. **The System shall store each Games, Groups, and Users on the Database** 
    1. Sensitive data such as passwords and emails should not be stored in memory and should be secure

## 4.2. Analysis of System Requirements

Analysis models – contains the complete functional specification and is mainly for the designers and programmers. This section describes the diagrams in the Appendices B - D and validates the models against the use cases.

**4.2.1. Scenarios**

**Scenario 1 – Student creates an account in the system**

A student in a fiu marketing course, George, is told by his professor to create an account in the system for tonight’s homework. George goes home from class and accesses the Strategic Marketing Simulator webpage. George does not have an account and selects ‘Create an Account’ on the login page. George enters in his FIU.edu email and a password for his account and enters his person information (full name and panther ID). George receives a confirmation email and was successfully able to create his Student user account.

**Scenario 2 – Admin views users that have joined his game**

Professor Joseph Cilli, wants to see how many students in his course have already created an account and joined his game. Professor Cilli, navigates to the Strategic Marketing Simulator webpage, enters his Login email and his account password. Professor is successfully logged in. He navigates to the Manage page by pressing the manage button on his homepage. Then he selects the game he created and selects ‘view users’. Professor Cilli, is then shown all the users currently registered to his game and their account details.

**Scenario 3 - Student user commits their changes**

Student George has already created an account, joined an active game, and is currently logged into the system. George has reviewed the market information and news for the current period and is ready to make his strategic decisions. George navigates to the Strategic Decision page via the “Strategic Decision” button on the toolbar. George enters his inputs and is ready to commit his decisions for the period. George presses the Commit button at the bottom of the page and is prompted to type in a short paragraph behind his reasoning. George is nervous and writes several pages about his decisions in deep detail. George, presses ‘Commit Changes’ at the bottom of the prompt. Prompt closes and he is locked from altering any other strategic decisions until next period.

**Scenario 4 - Professor removes a user from the database**

A student drops from Professor Cilli’s course. Professor Cilli does not want these inactive accounts to affect the markets for the active students. Professor Cilli navigates to the Strategic Marketing Simulator webpage and logs into the system with his email and password for his account. Professor navigates to the Manage page via the toolbar and selects his game. He is shown all the users registered to that game. Professor Cilli, looks for the user accounts of the students that dropped the course. Professor Cilli, selects their account and presses the Delete Entry button. The User account will then be made inactive and will no longer be displayed or allowed to login.

**Scenario 5 - Professor add a news article and Modifier**

Professor Cilli, is already logged into the system. Professor Cilli navigates to the News page via the News button on the toolbar. The professor’s account is able to view and access the Edit News Article button. Professor Cilli, presses this button and types in a realistic article about a hurricane coming. Professor Cilli, then modifies the Modifiers so that sales for hotel locations on the Waterfront locations will be lower. Professor Cilli is happy with these changes and hits the Save button at the bottom of the page to commit his changes.

**Scenario 6 - Professor add Entries to the database (bot, game, admin)**

Professor Cilli will be teaching a course that will be using the Strategic Marketing Simulator in a few days. Professors Cilli notice that the course has very few students and decides to keep the class consistent, he will be to add Bot users to the course’s Game. The Course will also have a teaching assist named Sarah, and Professor Cilli will have to create an Administrative account for her.

Professor Cilli logs into the System with his account email and password. Professor Cilli navigates to the Manage page via the manage button on the toolbar and selects Add a Game button. Professor Cilli fills out the required information and proceeds to add a new game to the database. Professor Cilli returns back to the Manage page, selects the newly created game and proceeds to add new Bot users to that game via the Add Users button. Professor Cilli fills out the required information for each Bot user and adds them to the database.

Professor Cilli then navigates to the View All Users page by selecting View All Users button via the toolbar. On this page, the professor is able to few all the active users in the database. Professor Cilli, selects add a new Administrative User entry. He is prompted to fill out the new accounts information, such as name, and login email address. Professor Cilli, presses Create and an email is sent to Sarah, that her administrative account in System has been created.

**Scenario 7 - User forgets their password and is unable to log in**

Student George is told that a new period has started and wants to log into the System to view the Leaderboard to compare his performance for last period amongst his peers. George navigates to the Strategic Marketing Simulator website and attempts to login. The System tells him that his email and password do not match. George knows his email is correct because it is his fiu.edu email address and selects forgot password. He is prompted to enter the email or panther id of his account. George enters his FIU email address and hits Send reset password. The System looks up his email, finds it, resets his password with a random string, emails that string to his email account, and flags his account. George sees the email in his fiu email account and now tries to log into the Strategic Marketing Simulator with his randomized password. George is successfully able to login and is prompted to assign his account with a new password. George types in a password he will remember twice and the Apply button becomes active. George presses the Apply button and is not logged into the System and is able to see his placement on the leaderboard.

**Scenario 8 -**

4.2.2. Use case model

**Use Case 1 – Student creates an account in the system**

**Actor:**

Student

**Pre-Conditions:**

Student does not currently have an account

**Normal Course:**

* + - 1. Student hits create an account button
      2. Student fills out required information
      3. An email is sent to students preferred email
      4. Student receives the email and verifies that email
      5. Student click link in email and is asked to enter a new password

**Alternative Course:**

**Email never received**

If in Step 4, the Student never receives the confirmation email then

* + - * 1. Student must repeat entire process from step 1

**Syntax Error Personal Information**

If in step 2 the Student enters their personal information wrong then

1. The Student will be ask to correct their input before being able to proceed

**New Password is not valid**

If in step 5 the Student enters their password incorrectly then

1. The Student will be ask to correct their input before being able to proceed

**Post Conditions:**

**Student has successfully created an account**

The Student is viewing the homepage

**Student was unable to create an account**

Student must repeat the entire process again

**Use Case 2 – Admin views users that have joined his game**

**Actor:**

Administrator/Instructor

**Pre-Conditions:**

The Administrator has a created account

The Administrator has created a Game

**Normal Course:**

1. The Administrator logs in with their credentials
2. The Administrator navigates to the Manage page
3. Administrator selects the game in question
4. Administrator selects View Users button
5. Administrator is able to view all users registered to that game

**Alternative Course:**

**Login Credentials were incorrect**

If in Step 1, the Administrator types their credentials incorrectly

* + - * 1. The administrator will me prompted email/password do not match
        2. Administrator will have to repeat step 1 until able to login
        3. Continue at Normal Step 2

If in Step 1, Administrator forgets their password

1. Administrator will press the Forgot Password button
2. Administrator provides his account email address
3. Received a recovery email from the System
4. Logs into the system with account email and new password
5. Is asked to set a new password
6. Continue at Normal Step 2

**Post Conditions:**

**Administrator was successful**

The View Users page will display all users registered to his game

**Administrator was unsuccessful**

The Administrator will have to repeat step 1

**Use Case 3 - Student user commits their changes**

**Actor:**

Student

**Pre-Conditions:**

1. Student has an account
2. Student is registered in a game
3. Student has logged into the System

**Normal Course:**

1. Student navigates to the Strategic Decision page via the Strategic Decision button
2. Student applies his strategic decisions for advertising, hiring personnel, room pricing, and room allocation for third party online vendors.
3. Student is happy with his changes and presses the Commit button to save his Strategic Decisions for the period
4. Student is prompted to enter his reasoning for his Strategic Decisions
5. Student types in his reasoning and presses Commit Changes

**Alternative Course:**

**Strategic Decisions incorrect parameters**

If in Step 2, the student inputs incorrect values for pricing or room allocations

1. The System will notify the Student to correct the values before being able to processed
2. Student will repeat Step 2

**Post Conditions:**

**Student was Successful**

* 1. Student was able to commit their decisions to the database
  2. The System will lock them out from committing any more decisions to the database

**Student was unsuccessful**

1. Student was unable to commit changes to the database
2. Students will have to repeat Step 1 through 5

**Exceptions:**

**The Student didn’t not commit any changes for the period**

The Student’s hotel will use the previous period values or default values if no previous period exist

**Use Case 4 - Professor removes a user from the database**

**Actor:**

Administrator/Instructor

**Pre-Conditions:**

The Administrator has a created account

There are Users in the Database

The Administrator is logged into the System

**Normal Course:**

1. Administrator navigates to the Manage page
2. Administrator navigates to the View All Users page
3. Administrator selects the user they wish to deactivate in the database
4. Administrator presses the

**Alternative Course:**

**Login Credentials were incorrect**

If in Step 1, the Administrator types their credentials incorrectly

* + - * 1. The administrator will me prompted email/password do not match
        2. Administrator will have to repeat step 1 until able to login
        3. Continue at Normal Step 2

If in Step 1, Administrator forgets their password

1. Administrator will press the Forgot Password button
2. Administrator provides his account email address
3. Received a recovery email from the System
4. Logs into the system with account email and new password
5. Is asked to set a new password
6. Continue at Normal Step 2

**Post Conditions:**

**Administrator was successful**

The View Users page will display all users registered to his game

**Administrator was unsuccessful**

The Administrator will have to repeat step 1

**Exceptions:**

**Use Case 5 - Professor add a news article and Modifier**

**Actor:**

**Pre-Conditions:**

**Normal Course:**

**Alternative Course:**

**Post Conditions:**

**Exceptions:**

**Use Case 6 - Professor add Entries to the database (bot, game, admin)**

**Actor:**

**Pre-Conditions:**

**Normal Course:**

**Alternative Course:**

**Post Conditions:**

**Exceptions:**

**Use Case 7 - User forgets their password and is unable to log in**

**Actor:**

**Pre-Conditions:**

**Normal Course:**

**Alternative Course:**

**Post Conditions:**

**Exceptions:**

**Use Case 8 – Forgot my password**

**Actor:**

Student

**Pre-Conditions:**

Student forgets his or her password

**Normal Course:**

1.      Student navigates to forgot my password page

2.      Student enters email or PID in text box

3.      Use clicks on “find my account” button

4.      The user then answers the security question

5. Student enters new password in text box

6. Student presses “change my password” button

7.      Students Password has been changed

**Alternative Course:**

**Student email did not match**

Student will have to repeat step 2

**Student secret Answer did not match**

Student will have to repeat from step 1

**Student did not enter a valid password**

Student will have to repeat step 5

**Post Conditions:**

**Student was successful**

            Student has a new pass word and can log into the system.

**Student was unsuccessful**

The Student will have to repeat from step 1

4.2.3. Static model e.g., object diagrams, class diagram

4.2.4. Dynamic model e.g., sequence diagrams or state machines

# 5. Glossary – define terms used in documents, especially domain specific terms

# 6. Appendix

## 6.1. Appendix A - Complete use cases

## 6.2. Appendix B - Use case diagram using UML

## 6.3. Appendix C - Static UML diagram

## 6.4. Appendix D - Dynamic UML diagrams

## 6.5. Appendix E - User Interface designs.

## 6.6. Appendix F - Diary of meeting and tasks.

# 7. References