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# Overview

## Project Summary

### Purpose, Scope, and Objectives

The purpose of this plan is to completely outline the project requirements to build the Martian Motel website and reservation database. The reservation database will be used to track room and activity reservations for customers. It will also track whether a customer has paid to hold a reservation. This plan applies to the CMSC 495 Martian Group.

The objective is to encode a reliable reservation system with reasonable development cost, timely delivery, software quality, and functionality.

### Assumptions and Constraints

This plan assumes the user has one of the following browsers installed:

* Chrome 54+
* Firefox 49+
* Safari 10+
* Internet explorer 9+

The plan must be completed within 6 weeks.

### 1.1.3 Project Deliverables

Software Requirements Specifications

Software Design Descriptions

Software Test Documentation

Reservation/Customer Database System

Reservation System User Manual

Hotel Digital Art and Graphics

Hotel Customer Website Interface

Administrative Web Interface

Hotel Web Server

### 1.1.4 Schedule

The project will begin following the finalization of these plans by 6 November 2016. It will be completed by 18 December

# References

None

# Definitions

Reservation/Customer Database System: The database built in MongoDB to track customer and reservation information. The database will also keep a record of payments based on paid reservations.

Hotel Customer Website Interface: This portion of the website will be accessible to the public. It will allow the customer to enter his or her information and make a reservations based on availability.

Administrative Web Interface: This portion of the website will only be accessible to administrators. It will have the ability show which customer has what room/activity reserved for a certain day/week/month.

Hotel Web Server: The server will host the web interfaces and reservation database enabling them to communicate. It will be built on Node.js and include a payment verification module which will either modify the reservation

# Project Organization

## External Interfaces

Project deliverables will be sent to Professor Duchon for grading.

## Internal Structure

Each member will participate in all aspects of this project, however, some members will take the lead on specific roles. The following table lists all members and what they will take lead on.

| **Group Members** | **Roles** | **Coding Team** |
| --- | --- | --- |
| Robert Carle | Project - Planning | Back End |
| Justin Hobbs | Definition and Requirements | TBD |
| Glenisha Smith | Testing/Quality Assurance | TBD |
| Jordan Fournier | Web Design/System Architecture | TBD |
| James Moore | Lead Front End Developer | Front End |
| Daniel Steele | Lead Back End Developer | Back End |
| Carlton Wilson | Documentation | TBD |
| Jeremy Fish | Graphic Design | Graphics |

## Roles and Responsibilities

Project Planning: Responsible for creating the project plan, milestones, schedule, tasks, and teams.

Definitions and Requirements: Responsible for creating requirements specification and defining systems/modules.

Testing/Quality Assurance: Responsible for creating and performing test cases. Determines if a milestone has been met.

Documentation: Reviews documentation/comments within code. Reviews and edits documents submitted by other teams.

Web Design/System Architecture: Determines overall website layout/design and database structure.

Graphic Design: Leads graphic design team. Responsible for designing hotel structure and rooms. Provides front end development team with images.

Lead Front End Developer: Leads front end development team. Responsible for developing code for the customer and administrative web interfaces.

Lead Back End Developer: Leads back end development team. Responsible for developing code for the reservation database and server. Produces interface for front end development team.

# Managerial Process Plans

## Work Plan

### Work Activities

### Develop Software Requirements Specification and System Specification (Due 6 Nov)

The Definition and Requirements lead will work with all members to develop the SRS.

* + - * 1. Draw Architectural Context Diagram (4 Nov)

The group will draw an architectural context diagram. This should be a very basic overview of the system.

* + - * 1. Draw Data Flow Diagram Level 0 (4 Nov)

The group will draw a data flow diagram that depicts subsystems and processes needed to fulfill the system requirements.

* + - * 1. Create Class Diagrams (5 Nov)

Using the DFD and ACD, the group can define classes that must be created based on the subsystems and process defined earlier.

* + - * 1. Develop Use Cases (5 Nov)

The group will look at the system theory they have designed and create at least 2 use case scenarios that a user might go through.

* + - * 1. SRS Review (6 Nov)

The Documentation lead will review the SRS. Once complete everyone will submit the SRS and this plan to Professor Duchon.

### Develop Software Test Specification (Due 13 Nov)

The Testing/Quality Assurance lead will work with all members to develop a software test specification.

* + - * 1. Test Cases (7-12 Nov)

This specification will make use of test cases. The front end and back end coding teams will develop at least 2 white box test cases each for their respective systems. The Testing/Quality Assurance lead will work with the graphic design team to develop at least 2 black box test cases for the entire system.

* + - * 1. Write scripts for test cases (As needed)

Some test cases might require scripts to perform. The coding teams will write these scripts as needed.

* + - * 1. Review STS (13 Nov)

The Testing/Quality Assurance and Documentation leads will review the STS at this time. All members will submit the final STS to Professor Duchon.

### Develop Software Design Description (Due 20 Nov)

Following the SRS, the Web Design/System Architecture lead will work with the group to design the software.

* + - * 1. Design Customer and Administrative Website Interfaces (14-19 Nov)

The website concept must be designed at this stage. The Web Design/System Architecture lead will work with the front end coding team to design the layout. The team may use software such as Lucidchart or Visio to design the layout. All system capabilities must be reachable within one of the interfaces. Once complete, the Documentation lead will review the layout.

* + - * 1. Design Database Structure (14-19 Nov)

The database structure will also be defined. The Web Design/System Architecture lead will work with the back end coding team to create an Entity Relationship Diagram (ERD). Additionally, they will define how the front end can interface with the database. The interface definition will be delivered to the Lead Front End Developer. The Documentation lead will review the ERD.

* + - * 1. Design Hotel Graphics (14-19 Nov)

The Graphic Design lead will work with the graphics team to produce conceptual imagery that may be used on the website. This imagery will be delivered to the Lead Front End Developer.

* + - * 1. Draw DFD L1/L2 (19 Nov)

The Project Planning Lead will work with the group to update the DFD to L1 or L2. The Documentation Lead will review prior to submitting.

* + - * 1. Update ACD (19 Nov)

The new software descriptions might change the system architecture, so the Project Planning Lead must update the ACD. The Documentation Lead will review prior to submitting.

* + - * 1. Review SDD (20 Nov)

The Documentation Lead will perform a final review along with all other members. All members will submit the final SDD to Professor Duchon.

### Phase I Coding (Due 27 Nov)

* + - * 1. Front End Development

Front end development team will produce a skeleton website with all required pages and a functioning navigation system. Testing/Quality Assurance lead will approve this milestone.

* + - * 1. Back End Development

Back end development team will be able to manipulate the database with direct function calls. Testing/Quality Assurance lead will approve this milestone.

* + - * 1. Graphic Design

Graphic design team will have designed a skeleton structure representing at least all desired buildings and rooms. Testing/Quality Assurance lead will approve this milestone.

### Phase II Coding (Due 4 Dec)

* + - * 1. Front End Development

Front end development team will have all buttons and input fields added. They are not required to be functional at this time. Testing/Quality Assurance lead will approve this milestone.

* + - * 1. Back End Development

Back end development team will be able to manipulate all required data in the database via http requests. Testing/Quality Assurance lead will approve this milestone.

* + - * 1. Graphic Design

Graphic design team will have completed placement of windows, doors, furniture, and connecting all buildings. Testing/Quality Assurance lead will approve this milestone.

### Phase III Coding (Due 11 Dec)

* + - * 1. Front/Back End Development

The front end will be able to manipulate and read all required data in the database with the buttons and forms on the website. Both front end and back end teams will work to together to achieve this goal. Testing/Quality Assurance lead will approve this milestone.

* + - * 1. Graphic Design

Final textures and colors will be applied to the buildings and interior. Graphical images will be given to the front end development team to add on the website. Any image shortfalls can be obtained from copyright free images at this point. Testing/Quality Assurance lead will approve this milestone.

### Phase IV Coding (Due 17 Dec)

* + - * 1. System Test (12 Dec)

Back/front end development team will perform their white box test cases. Additionally, they will perform the black box test cases created for them. Results will be sent to the Testing/Quality Assurance lead.

* + - * 1. Debug (13-16)

Testing/Quality Assurance lead will determine what corrections need to be made. Any available member will work on fixing the bugs.

### Final Review (17 Dec)

Testing/Quality Assurance lead will perform a review of the system’s performance. Documentation lead will perform a review of the source code comments and final report.

### Final Code Corrections (17 Dec)

Any final corrections will be applied.

### Deliver Product (18 Dec)

Send source code to Professor Duchon.

### Schedule Allocation



### Resource Allocation

Planning

Project Manager 1

System Design 1

Documentation 1

Definition/Requirements 1

Testing/Quality Assurance

QA Controller 1

Programming

Front End, Lead 1

Back End, Lead 1

Software Technicians 3

Graphic Design

Graphic Design, Lead 1

Graphic Designers 2

# Technical Process Plans

## Process Model

A Linear-Sequential process will be followed for the project.

## Methods, Tools, and Techniques

The website will be designed using a MEAN (MongoDB, Express, AngularJS, Node.js) stack.