**C868 – Software Capstone Project Summary**

**Task 2 – Section A**



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| **Capstone Proposal Project Name:** | Movie Rental Web Application |
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# **Business Problem**

**The Customer**

The customer is a movie rental business owner, name Jason Carter, who has a movie rental shop where customers come to rent movies temporarily to watch. Currently, the owner tracks all rental details spreadsheets on a regular PC in this shop in which the owner manually enters information into the system.

## **Business Case**

Currently the customers must come to the store not only to rent movies, but to check whether the movie is available or not and to sign up for a new membership. The owner has to manually enter in new customer information and also manually update all details regarding movie rental details for each customer and movie transaction that takes place. This waste much time and effort on both the part of the customer and the owner. The need for a centralized, web interface that will link to a robust database will benefit Jason by allowing each customer to register as a customer online, check movie availabilities and rent movies online to be picked up at store. The owner will not have to manually enter any information because the customer will complete all their transactions online. The owner can then use the system to complete the transactions by verifying the customer and their movie rental transaction. It will be much easier for the customer to use the web application to not only rent movies but also look through a list of movies; check whether they are available and complete most of the rental transaction online before heading to the store to pick up the movie. Overall, this should increase the business sales by increasing the number of customers while allowing the owner to handle the increase in customer sales.

## **Fulfillment**

The software application will be a web application stored on a cloud server that customers of the business will be able to use to fulfill their movie rental needs. The customers will enter the main page of the website through a web browser. On the main page there will be a header with a navigation bar, utility links, a login page link and a new user registration link. The navigation bar will provide drop down menus to a different set of sections throughout the website where customers can find what they are looking for. Customer information entered into the website will be stored into a SQL server database on cloud. Jason (owner) will have access to all customer information in the database through an admin privileged UI on the web application. The owner will be able to perform data analysis based on the information stored in the database such as number of customers, customers by location etc. Jason will have much more control, time and information over his business because of this web application.

# **Existing Gaps**

Currently there is no existing system. Jason is manually entering and tracking customer and movie rental information and transactions. The new system will be placed entirely on a cloud server. All the existing information must be migrated from the spread sheets into the new database. Once the existing information migrates to the new system, the web application will be up and running for Jason and his customers to use.

# **SDLC Methodology**

The SDLC Methodology utilized in this project is Waterfall because the Web application requirements is clearly understood to be a movie rental application that handles and stores customer and movie rental information and transaction. The phases will be followed in the following order:

1. Gathering requirements: The owner provided us with
2. Analysis of requirements: We will go through the list of requirements and analyze what is possible and what isn’t while trying to maintain as much of the necessary requirements as possible at the owners discretion.
3. Design: Once both sides have agreed upon on the requirements for the application, we will design the architecture of the software starting with a wire frame. After the wireframe has been approved or redesigned until approved, a prototype will be created. Once the prototype is approved or designed until approved, then we can move onto the implementation of the design
4. Coding: This will be the implementation of the design using an IDE and various software tools
5. Testing: This will be done at the development site and placed onto a secure server which the owner will have access to test until they are satisfied
6. Steps 4 and 5 will be repeated until the requirements have been satisfied and the product is functioning to agreed standards
7. Operations: Once the product is delivered, the site will be handed over with documentation and a maintenance time period guarantee for the site.

# **Deliverables**

## **Project Deliverables**

The following are the project deliverables agreed upon between the customer and project manager:

1. A project schedule with a strict timeline for each task based on the waterfall methodology
2. A Test plan fulfilling the agreed upon validation of the requirements and basic application functionality
3. A wireframe of the UI to be approved before building the prototype
4. A prototype of the web application functionality to be approved before building the final web application

## **Product Deliverables**

The product deliverables are the following:

1. An Implemented fully functioning movie rental web application attached to a database storage system.
2. A secure sign-in allowing for higher UI and functionality access within the application by registered customers and even higher access for site admins

# **Implementation**

The implementation of this application will be moved directly from the development environment into the cloud server production environment of Microsoft Azure. The cloud server will host the web application and the database server. The existing customer data on spread sheets will be migrated to the database server using a database management application. The customer’s users will be able to use the site as soon as the implementation and previous data migration has completed.

# **Validation and Verification**

The testing phase will cover all the agreed upon requirements and functionality with validation from automation testing combined with user testing. The user testing will be done by a subset the customers current user base on a temporary hosting server where the preproduction version of the web application will be available. Once the automation and user testing have reached acceptable levels, the web application will then be hosted on the cloud production server. Testing will continue for 1 week after the web application is placed into the production server for any other bugs. After that, the requirements and functionality of the website will be maintained and operated for a year before the operations of the website will be handed over to the owner or a different service agency.

# **Environments and Costs**

## **Programming Environment**

The programming environment that will be used is:

* Microsoft Visual Studio 2017
* Microsoft SQL Server 2016
* Microsoft SQL Server Management Studio 17
* 3 laptops
* Test Server Hosting PC
* Windows Server 2012
* Cloud Server Subscription

## **Environment Costs**

The environment cost is as follows:

* Software Tools: $0
* 3 Laptops: $4500
* Internet: $300 (100 per month \* 3 months)
* Test Server Hosting PC: $2000
* Windows Server 2012: $100
* Cloud Server Subscription: $300 (100 per month \* 3 months)
* **Total $6800**

## **Human Resource Requirements**

This project will be allocated the following human resources:

* Total hours required for project – 400 hours per employee
* 1 project manager – $70 per hour \* 400 hours = $28000
* 2 developers - $35 per hour \* 400 hours = $14000
* **Total Cost for Human Resources = $42000**

# **Project Timeline**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase | Milestone/Task | Deliverable | Description | Dates |
| Predevelopment | Task 1 | Customer Requirements | Meeting with customer and procedure review | 11/01/2018 – 11/03/2018 |
| Predevelopment | Task 2 | Requirements Analysis | Reviewing customer requirements | 11/03/2018 – 11/05/2018 |
| Predevelopment | Task 3 | Signed Requirements Agreement | Agreement between customer and vendor on requirements | 11/05/2018 –  11/07/2018 |
| Design | Task 4 | Wireframe | Create the UI that relates the look and feel of the project | 11/08/2018 – 11/16/2018 |
| Design | Task 5 | Prototype | Create a working application with basic functionality including database activity and all the sections of the site included | 11/16/2018 – 11/31/2018 |
| Testing | Task 6 | Test plan Approval | Test prototype until all aspects of the test plan requirements have been covered and fulfilled | 12/01/2018 – 12/16/2018 |
| Implementation | Task 7 | Full Functioning Web Application on Cloud server | Move the application from development to the cloud production server where the application and database will be hosted | 12/17/2018 – 12/28/2018 |
| Migration | Task 8 | Preexisting customer’s user data integrated into application database | Migration customer’s client information from spreadsheets to database | 12/29/2018 – 01/17/2018 |