One Clean Dude Detailing

Dakoda Meade

CST-452 Capstone Project Requirements Document

Grand Canyon University

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Revision:

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**ABSTRACT**

The mobile automotive detailing company web application project aims to create a comprehensive, user-friendly platform that streamlines various aspects of the business. The application will host an online appointment booking, service reviews(hardcoded for now), and administrative tasks. The primary objective for this project is to enhance the user experience by providing a convenient way to schedule appointments and access services while enabling the company to manage operations more efficiently. This project is being undertaken as a favor for a friend, adding a personal commitment to deliver a high-quality application in a short amount of time. However, there will be more features added after the deadline is met for this class to ensure all the features promised for this class are done on time.

The web application will be developed using ASP.NET for the backend and MySQL for the database, ensuring a robust and scalable system. Following the Model-View-Controller (MVC) architecture, separating application business logic from the front-end logic. The User entity, with attributes such as role to differentiate between admins and customers, ensures proper access control and functionality tailored to different user types. The database schema includes tables for Users, Roles, Services, Appointments, and Appointment Statuses, essential for capturing all necessary data. The project's success will be measured by its functionality, user-friendly UI, and meeting the deadline. By integrating a Christian worldview, the project emphasizes ethical practices and community service, aligning goals with a commitment to moral values.

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| History and Signoff Sheet |

**Change Record**

|  |  |  |
| --- | --- | --- |
| **Date** | **Author** | **Revision Notes** |
| 7/22/2024 | Dakoda Meade | Initial draft for review/discussion |
| 8/31/2024 | Dakoda Meade | Final Review |
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| **Overall Instructor Feedback/Comments** |

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| **Overall Instructor Feedback/Comments** |

**Integrated Instructor Feedback into Project Documentation**

Yes  No

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Functional Requirements

**Use Cases**

Describe the sequence of functional actions a project performs with either textual Use Cases, UML Use Case diagrams, or if using Scrum, provide a link to the User Stories (see template included in course materials).

**The functional requirements are done on the Functional Requirements tab of the excel document Sprint Backlog.xlsx.**

NOTE: Once the functional requirements have been completed, there may be situations where Use Cases or User Stories may need to be taken out of scope, possibly due to technical challenges or timeline challenges. Any Use Cases or User Stories that are taken out of scope once the project development has started must be approved by the mentor and instructor with justification as to why the functionality is being removed from the project. The following must be updated if any Use Cases or User Stories are taken out of scope:

|  |  |  |
| --- | --- | --- |
| **Use Case or User Story** | **Approval Date** | **Justification** |
|  |  |  |

***NOTE: If necessary, you may add subsections to those listed in order to match the requirements in the assignment description. Do not remove any top-level sections (those that are listed in the Table of Contents). As required by your project, you may add additional top-level sections (please update the Table of Contents).***

Non-Functional Requirements

**Use Cases**

Describe the sequence of non-functional actions a project performs with either textual Use Cases, UML Use Case diagrams, or if using Scrum, provide a link to the User Stories (see template included in course materials).

**The non-functional requirements are done on the Non-Functional Requirements tab of the excel document Sprint Backlog.xlsx.**

NOTE: Once the non-functional requirements have been completed, there may be situations where Use Cases or User Stories may need to be taken out of scope, possibly due to technical challenges or timeline challenges. Any Use Cases or User Stories that are taken out of scope once the project development has started must be approved by the mentor and instructor with justification as to why the functionality is being removed from the project. The following must be updated if any Use Cases or User Stories are taken out of scope:

|  |  |  |
| --- | --- | --- |
| **Use Case or User Story** | **Approval Date** | **Justification** |
|  |  |  |

Technical Requirements

**Use Cases**

Describe the tools and technologies used in the project.

* **Visual Studio:** Visual studio is the IDE I am going to be using to create the web application. Not only is it my favorite IDE, it has all the tools for coding, debugging, testing, and deploying my application. It also has integrated SQL servers that I will not actually be using for this project. It also supports GitHub integration.
* **GitHub:** This will be used for my version control system and tracking changes in code during development. Also making it easier to work on multiple devices seamlessly.
* **Draw.io:** Draw.io is a web-based graph drawing software and will be used to create all the diagrams for this project.
* **MySQL and MySQL Workbench:** MySQL is used as the database backend for the application. It will be used to store all the data including, user, appointment, and service information.
* **Bootstrap:** Bootstrap is used to design the front end of the application. This will ensure it is visually appealing.
* **ASP.NET:** ASP.NET is the web application framework I am going to be using for this application. It supports Model-View-Controller architecture allowing a clear separation of logic and application flow through controllers.
* **Razor/JavaScript:** Razor and JavaScript will be utilized to leverage the strengths of server side and client-side front end technologies. These will be used to create a dynamic and interactive user interface and experience.
* **Microsoft Azure:** Used for its robust security, scalability, and support for both Microsoft and open-source technologies make it versatile for various business needs. Additionally, Azure's continuous innovation ensures it remains a future-proof solution for cloud infrastructure.

NOTE: Once the technical requirements have been completed, there may be situations where technologies or tools may need to be taken out of scope or changed, possibly due to technical challenges or timeline challenges. Any technologies or tools that are taken out of scope or changed once the project development has started must be approved by the mentor and instructor with justification as to why the functionality is being removed from the project. The following must be updated if any technologies or tools are taken out of scope or changed:

|  |  |  |
| --- | --- | --- |
| **Technology or Tool** | **Approval Date** | **Justification** |
|  |  |  |

Logical System Design

Provide a diagram of the logical architecture of the system.

**A diagram of a flowchart

Description automatically generated**

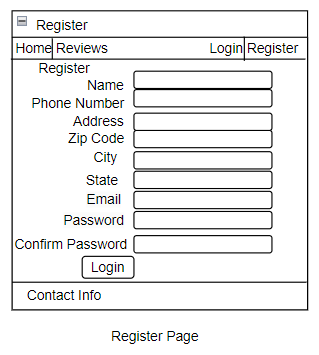
User Interface Design

Provide a sitemap and user interface design diagram for each user interface screen in the application, if not applicable, define the components of the project as described in the handbook.

A screenshot of a computer screen

Description automatically generatedA screenshot of a computer

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A screenshot of a login form

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A screenshot of a login form

Description automatically generatedA screenshot of a calendar

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A screenshot of a computer

Description automatically generatedA screenshot of a computer

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A screenshot of a computer program

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Reports Design

Provide a listing of the reports that the system will provide, if applicable. If not, state that the system does not produce any reports and provide additional documentation as described in the handbook.

|  |  |  |  |
| --- | --- | --- | --- |
| **Report** | **Description** | **Details** | **Usage** |
| Appointment Summary Report | Provides a summary of all appointments within a time frame. There will be an admin version that shows all and upcoming appointments from the last year for all users), a user that only shows that users from the last year(The upcoming appointments will not be a report. | Includes appointment dates, customer names, services booked, and appointment statuses. Able to filter by name with search bar, radio button for status, date, and radio button for services booked . | Used to manage appointments by sorting and filtering them with ease. |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Appointment Summary Report** | | |
| **Display Value** | **Variable or Field** | **Format Notes** |
| Appointment ID | AppointmentID | “xxx” |
| Date | AppointmentDate | “xx/xx/xxxx” |
| Time | AppointmentTime | “xx:xx” |
| Service | ServiceName | String |
| Customer | UserName | String |
| Status | AppointmentStatus | String |

**Security**

Discuss the security issues relevant to the system. If there are no security issues, explain why. Provide a matrix that illustrates the permissions/access rights of different types of users on the system.

Helpful Hint: If there are no immediately evident security issues, it does not mean there are not any. An often-overlooked security issue is badly designed software that is exploited by hackers to penetrate a system even if the hacking objective is a different component of that system.

Ensure that you are properly addressing the security issues or the absence of security issues. Overall, explain the nature of security issues that may impact the project or why there will be no such impact.

|  |  |  |  |
| --- | --- | --- | --- |
| **Security Matrix** |  | **Admin** | **Customer** |
| Create Account |  | X | X |
| Book Appointment |  | X | X |
| View Appointments |  | X | X |
| Cancel Appointments |  | X | X |
| View Profile |  | X | X |
| Edit Profile |  | X | X |
| View Admin Dashboard |  | X |  |
| Add/Delete/Edit Services |  | X |  |
| Complete Appointments |  | X |  |
| View all appointments |  | X |  |