TITLE

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CST-451 Capstone Project Proposal

Grand Canyon University

Instructor: Professor Mark Reha

Revision: 1

Date: March 3, 2024

**ABSTRACT**

Summarize the entire project in 2-3 paragraphs, about 15-20 lines. The abstract should be enough for one to get an idea of what this project is about, what was the task, and what you accomplished. Briefly provide the broader context. Write this section only after the entire project is complete.

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| History and Signoff Sheet |

**Change Record**

|  |  |  |
| --- | --- | --- |
| **Date** | **Author** | **Revision Notes** |
|  |  | Initial draft for review/discussion |
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| **Overall Instructor Feedback/Comments** |

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| **Overall Instructor Feedback/Comments** |

**Integrated Instructor Feedback into Project Documentation**

Yes  No

**Project Approval**

Professor Mark Reha

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Project Overview and Project Objectives

**State the Problem and Background**

A previous project from a prior documentation class that was nowhere near being completed will be used as far as documentation. I will take this documentation and adjust it to write a full stack ecommerce page. The application will be built using React, JavaScript, HTML, and CSS for the frontend, ensuring a user-friendly interface and seamless user experience. The backend will be powered by Spring Boot and Spring Boot Security, providing robust, secure, and scalable server-side operations. MySQL will be used for database management, ensuring efficient data storage and retrieval. The purpose of this project is to expand the reach of a fictional company to its customers globally, adapting to the shopping habits of its customers in the digital age.

The company has been in business for hundreds of years, offering medieval weapons for both defensive and offensive combat. Over the years, it has built a reputation for quality and authenticity. However, with changing times and the rise of digital commerce, the company has found it increasingly difficult to reach customers.

The proposed web application will allow users to view items, read weapon descriptions, and see the prices of the items. It will also offer an online shopping cart where customers can add, remove, and edit the quantity of products. This digital transformation aims to make shopping more convenient for customers and expand the company’s customer base.

By addressing these needs, the company hopes to continue its tradition of excellence while adapting to the modern marketplace.

**Christian Worldview**

As applicable to this project, discuss the Christian worldview perspective and what aspects of the CWV you are addressing/relating/incorporating – ethical, spiritual, legal, historical, social, etc. Provide references to relevant Christian sources. Explain how you approached this project differently as you are guided by a Christian worldview.

**Project Objectives**

For this Ecommerce web ap to be able to be deployed successfully in working condition, the following user stories must be addressed:

As a user, I want to be able to login with admin privilege in order to add, update, or delete products.

As a user, I want to be able to view a list of products so I can see what products are offered/available.

As an admin, I want to be able to create a new product so I can add new products into the inventory.

As an admin, I want to be able to edit an existing product in the inventory so that I can keep the product information up to date.

As an admin, I want to be able to delete a product so that I can remove items that are no longer available.

As a user, I want to be able to view a list of categories so that I can see how the products are organized.

As a user, I want to be able to create a new category so that I can group products based on their similarities and characteristics.

As a user, I want to be able to edit an existing category so that I can edit its properties if needed.

As a user, I want to be able to delete a category if no longer needed.

As a user, I want to be able to view the product details, including the properties and associated category.

As a user, I want to be able to view details of the categories including its properties and the list of associated products.

**Challenges**

List the known challenges that will be used to measure project success.

**Benefits and Opportunities**

Describe the benefits or opportunities resulting from project implementation.

Provide references as necessary.

***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).***

Project Scope

1. Give a clear, concise statement that states the scope of the project. This should also include items that are to be out of scope.

The project to be built is an online Medieval arms and armor store, with the added ability of purchasing the items in which the users have selected. The website will include pages for each of these core details/features: home/root, about us, registration, login, profile, products browsing, favorites managing, and checkout. Users will sign up for an account using a basic email/password authentication scheme, after which they will be allowed to use the full site’s functionality. Users may browse for records on a dedicated page (/arms), then either add an item to a Favorites tab (just a collection of items they like and want to buy in the future) and a shopping cart. Users view their profile information and update their personal data, even deleting their account if they’d like. Users can have as many items in their favorites for their account as they’d like, then add them to their cart whenever they’d like. I’ll have to design the data scheme to account for this kind of scalable nature.

1. Use the template to list all known stakeholders and contacts, if applicable, including self (for some projects self may be the only name listed)

|  |  |  |
| --- | --- | --- |
| Stakeholder Name | Role(s) | Responsibilities |
|  |  |  |
|  |  |  |

1. List the work breakdown required to satisfy the project objectives. Identify teams and other resources that may be required to successfully complete the project.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Work Breakdown Structure | | | | | | | | | | |
| ID | Task | Dependencies | Status | Effort Hours | Cost | Start Date | Planned Completion | Estimate to Completion | Actual Completion | Resource |
| 1 |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |

Project Success Measures

1. Describe what measures will be used to calculate project success.
2. Use the template to list the project completion criteria.

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| --- |
| Project Completion Criteria |
| 1 - |
| 2 - |

1. Use the template to list the project assumptions and constraints, if applicable. An assumption is an educated guess that a likely condition or circumstance is presumed to be true. A constraint is a limiting condition or circumstance that defines the project boundaries. Assumptions allow the project to succeed. Constraints restrict or limit the project execution.

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| --- | --- | --- | --- | --- | --- |
| Assumptions and Constraints | | | | | |
| ID | Description | Comments | Type | Status | Date Entered |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |

Project High-Level Solution

**Introduction**

Describe in detail the nature of the topic or challenge addressed. Adjust the title of this section accordingly. Be very clear when you describe what is given/known, what is the objective, and what are the characteristics of the solution/answer sought. Include diagrams and illustrations to clarify your narrative. Include a detailed description and examples of the data/input to this project. State any assumptions you made and explain why.

**Solution**

Describe in detail the nature of your solution, both in theoretical terms (principles, concepts) as well technical terms (UML, flowcharts, pseudocode, code snippets). If the project is entirely theoretical/mathematical, prove every point you make and anchor in external references. If the solution is code or another type of software, provide an architecture of the solution (diagram), clearly labeling and explaining the function and operation of each component. Detail the type of input, output, and the nature of data/information processing. Provide screenshots of correct execution of your code. Include key code snippets and comment on their role and approach to implementation. Detail and reference any external resources used. Summarize this section with a reminder of how your answer/approach/solution addresses the objectives.

Project Controls

1. Use the template to define the risk and list the steps to prevent the risk from occurring or the steps to minimize the chances of it happening. The contingency plan describes alternative solutions to reduce the impact of the risk. An example of a contingency plan is to provide the customer a temporary web server if there are delays in delivery/completion. If the risk has already happened then provide an entry in the issue log.

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| Risk Management | | | | |
|  | **Risk Probability** | **Risk Impact** |  |  |
| **Event Risk** | **(high, medium, low)** | **Risk Mitigation** | **Contingency Plan** |
| What is the risk? | What is the probability? | What is the impact if the risk occurs? | What can be done to minimize the risk? | What can be done to minimize the impact of the risk? |
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| Issues Log | | | | | | | | |
| **ID** | **Description** | **Project Impact** | **Action Plan/Resolution** | **Owner** | **Importance** | **Date Entered** | **Date to Review** | **Date Resolved** |
| 1 | What is the issue? | How will this impact scope, schedule & cost? | How do you intend to deal with this issue? | Who manages this issue? |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |

1. All projects have either anticipated and planned or unexpected changes. Describe any issues in management or change management due to the anticipated and planned or unexpected changes. Use the template to list anticipated and planned or unexpected changes.

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| Change Control Log | | | | | | | | | |
| **ID** | **Change Description** | **Priority** | **Originator** | **Date Entered** | **Date Assigned** | **Evaluator** | **Status** | **Date of Decision** | **Included in Rev. #** |
| 1 |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |

1. Use the template to describe how the end user is involved in the software development, if applicable. Include relevant information about meetings, reviews, presentations, etc.

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| Roles and Responsibilities | | | |
| Name | Team | Project Role | Responsibility |
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Project Cost and Schedule

1. Create a spreadsheet of costs related to the scope of the project, with all necessary material and elements required to accomplish it effectively, and the allocated resources. Note: If the project being designed will not require any cost calculations, please state that here.
2. Create a project schedule after all project tasks have been defined and prioritized.
3. Set a programming schedule by implementing work breakdown and task time estimates. Create a timeline with dates for completion of key components of the project.

Appendix A – References

*List all references using APA style*

Appendix B – Copyright Compliance

For each external technical tool or code used, provide a reference to its copyright policy, clearly showing your right to use it. For each external technical tool or code used, detail how you used it, how you adapted it, how you modified it (if permitted), and why did you use it as opposed to write your own. Only a small portion of your project may rely on external code. When code libraries/packages are used, explain why this was necessary/required/recommended. Seek instructor approval for using external resources prior to beginning to work on the project.