Library App

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CST-452 Capstone Project Proposal

Grand Canyon University

Instructor: Professor Donna Jackson

Revision: 1.0

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**ABSTRACT**

The Books application is a library book management application. Using basic CRUD operations Users will be able to manage books that are available within a library. This application will be to allow users to add books to the libraries inventory, get a list of books based on different search criteria, and remove books from the inventory when books are checked out. The goal of this application is to help libraries maintain its inventory and to allow users to see what book are available.

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| History and Signoff Sheet |

**Change Record**

|  |  |  |
| --- | --- | --- |
| **Date** | **Author** | **Revision Notes** |
| 7/17/2023 | Kekoa Kubli | 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**

The problem is that some libraries need new and more updated versions of checking out books. This new library application can take advantage of newer technologies to create lightweight programs that have all the same functionality of older outdated programs used. This library application is versatile and easy to use by anyone, in any environment.

**Christian Worldview**

In the Programming/Software development space, the Christian Worldview does not have a direct correlation to the outcome of the work. As a Christian we are to be a representation of Christ on Earth. Therefore, everything we do, we do in excellence so that it can be glorifying to God. **Colossians 3:23 - Whatever you do, do your work heartily, as for the Lord rather than for men.** My approach to any project or work is to do great work with honesty and effort so that I can be a representation of Christ.

**Project Objectives**

* Create planning Wireframes, mockups and UML Diagrams
* Create Database schema to represent
* Building out the application (Frontend, Backend, API)
* Testing application and performing revisions
* Deploy project to repositories
* Deploy to cloud platforms

**Challenges**

* Finish building out application
* Deploying to a cloud service
* Test and Revise application
* Bug testing and Security breach clean up

**Benefits and Opportunities**

Describe the benefits or opportunities resulting from project implementation.

Provide references as necessary.

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 scope of the project is set to complete the Library Application, test for bugs and potential security breaches, and to deploy the project to accessible location on a cloud platform. Certain cloud testing would be outside of the project scope for additional financial costs required.

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 |
| Self | All | All |
|  |  |  |

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 | API Development | Express.js | Pending | 8 | 0 | 7/23/2023 | *7/28/2023* |  |  |  |
| 2 | Database development | MySQL | Pending | 4 | 0 | 7/23/2023 | *7/28/2023* |  |  |  |
| 3 | Front End development | React.js | Pending | 30 | 0 | 7/23/2023 | *8/25/2023* |  |  |  |
| 4 | Github Repository | Github | Pending | 4 | 0 | 7/23/2023 | *7/28/2023* |  |  |  |
| 5 | Cloud Deployment | Undecided | Pending | 30 | 0 | 7/23/2023 | *9/3/2023* |  |  |  |

Project Success Measures

1. Describe what measures will be used to calculate project success.

* The measure of a successful project will be a library application that can add, update, read, and delete books from its own inventory. Book inventory should also be searchable by several different criteria input by the users. This application will also need to be deployed to a cloud provider and accessible remotely and not run locally from a computer. The final working product should also be free of obvious security bugs.

1. Use the template to list the project completion criteria.

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| Project Completion Criteria |
| 1 – Developed on allotted timeframe |
| 2 – Developed free (no costs) |
| 3 – Developed available on local machines and deployed to a cloud environment |
| 4 – Final product performs as intended from planning phase |

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 | There might be some limiting factors that would allow this project to get deployed to different cloud providers. | There are free options available when attempting to deploy applications to a cloud | Constraint | Pending | 7/23/2023 |
| 2 |  |  |  |  |  |

Project High-Level Solution

**Introduction**

The nature of the library app to streamline the checkout process of libraries book checkout program with newer lightweight and GUI friendly web application. This application will allow user to maintain their inventory by making additions to collection, searching available books by different criteria, and removing books.

**Solution**

My solution provides users to maintain their book inventory from more than one workstation. Using cloud deployment, this web application will be accessible from anywhere increase accessibility and not just one computer/location.

**UML Diagrams**

Search Page:

A screenshot of a computer

Description automatically generated with low confidence

Add new book:  
A screenshot of a computer

Description automatically generated with medium confidence

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? |
| Full deployment to cloud. | low | Project would not be fully deployed and accessible from any location. | Attempt to deploy do different cloud platforms. | Use a cloud database. That why data is available from any location, but application would need to get installed on a machine. |
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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.

* Will not require any cost calculations

1. Create a project schedule after all project tasks have been defined and prioritized.
2. 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.

|  |  |  |
| --- | --- | --- |
| Task | Start | Project Completion |
| API Development | 7/23/2023 | 7/28/2023 |
| Database development | 7/23/2023 | 7/28/2023 |
| Front End development | 7/23/2023 | 8/25/2023 |
| Github Repository | 7/23/2023 | 7/28/2023 |
| Cloud Deployment | 7/23/2023 | 9/3/2023 |

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.