**Capstone: Milestone 1**

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Master of Science in Software Development Capstone Project Proposal

Grand Canyon University

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**ABSTRACT**

This capstone project involves the development of a web/mobile application to connect individuals seeking assistance with those who are offering services. The services cover tasks such as relocating, cleaning, running errands, and addressing immediate needs. The motivation for this project stems from the pandemic-induced decline in services that were easily accessible. This project intends to recreate the ease of finding immediate assistance that was available before the pandemic. This application will make it easier to connect with others which will enable users to efficiently fulfill their urgent needs or seek immediate income. The ambition for this project is to bridge the gap created by the pandemic by providing a convenient online platform. With an emphasis on covering both frontend and backend development skills, the project aims to deliver a solution that addresses a vital post-pandemic need while providing valuable learning opportunities.

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| --- |
| **HISTORY AND SIGN-OFF SHEET** |

**Change Record**

|  |  |  |
| --- | --- | --- |
| **Date** | **Author** | **Revision Notes** |
|  |  | Initial draft for review/discussion |
|  |  |  |
|  |  |  |

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| --- |
| **Overall Instructor Feedback/Comments** |

|  |
| --- |
| **Overall Instructor Feedback/Comments** |

**Integrated Instructor Feedback into Project Documentation**

Yes  No

**Project Approval**

*<Insert name of instructor here>*

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Project Overview and Project Objectives

**State the Problem and Background**

Purpose:

The purpose of this project is to develop an application that can connect individuals seeking assistance with those offering services. This will cover a wide range of tasks. The application addresses the challenges created by the pandemic-induced decline in services that were easily accessible. This application will provide a platform for swift and efficient connections to meet urgent needs or seek immediate income.

Background:

The motivation for this project stems from the impact that the pandemic has had on services that were easily accessible and are now difficult to access. The ease of finding assistance for tasks such as moving or handy work has decreased since the pandemic. This resulted in the identification of the need to move such services online. This project creates an opportunity to develop an application that addresses these needs. The emphasis is on both addressing essential post-pandemic needs and improving my front-end and back-end development skills. I intend to use tools such as HTML, JavaScript, CSS, PHP, and MySQL to lower costs until transitioning to a serverless architecture. The key features of the application will enable users to post job descriptions, specify job duration, set pay rates, exchange contact information, create user accounts, and log in. These features collectively contribute to the smooth functioning of the platform which will enable users to connect and fulfill their immediate needs or offer services efficiently.

**Christian Worldview**

My project fits into the Christian worldview perspective when it comes to aspects such as ethical, spiritual, legal, historical, and social considerations. Ethical Consideration: The application aims to fill a void created by the pandemic by addressing a vital need in society. The Christian worldview sheds light on significance of compassion, promoting community involvement, and helping people in time of need. Spiritual Consideration: The project is an epitome of the Christian value of loving your neighbors. This application offers a platform for individuals to help one another, which embodies the Christian principle of being selfless and serving people. Legal Consideration: This project aligns with ethical business practices and protection of user data which adheres to Christian values of honesty and integrity. The application further addresses historical and social considerations by taking the initiative to recreate the pre-pandemic ease of getting access to services. This will have a positive impact on the well-being of the community members. (Johnson & Smith, 2021). This project is using a Christian worldview approach by embodying principles of fairness, compassion, and understanding that the goal of the application is beyond profit making and primarily aims to assist those who are in need. The project stresses the significance of providing a platform to address practical needs and promote support and unity within the community. This application will uphold Christian values by reflecting ethical principles when it comes to decision-making and interactions with users (Branch, 2022). Top of Form

**Project Objectives**

Below is the list of objectives that will be used to measure the success of the project.

* Will develop a web/mobile application that can connect individuals seeking assistance with those offering services.
* The application will be user-friendly and easily accessible, enabling users to easily post job descriptions, specify job durations, set pay rates, and exchange contact information.
* The application will cover a wide range of tasks, including but not limited to relocating, cleaning, running errands, and addressing immediate needs.
* The project will help improve both my frontend and backend development skills.
* Will successfully use HTML, JavaScript, CSS, PHP, and MySQL to reduce costs during the development phase till it’s time to transition to a serverless architecture. This will help ensure that the project stays within budget constraints.

Upon transition to a serverless architecture, the following will be assessed and evaluated over time:

* The application will make it easier to find immediate assistance.
* The project will provide a solution that addresses an important post-pandemic need.
* The application will make it easier for users to connect, enabling them to fulfill urgent needs or seek immediate income efficiently.

**Challenges**

Below is the list of potential challenges that will be used to measure the success of the project.

* Challenge: Making sure that both frontend and backend are reliable and functional.
  + Measurement of Success: The application should be free of bugs, smooth user experience, and regular testing of software.
* Challenge: Designing the system so that it can manage a growing number of users and job postings.
  + Measurement of success: The performance of the system stays stable with an increased number of users and postings.
* Challenge: Keeping costs as low as possible during the project.
  + Measurement of Success: Adhering to budget throughout the project.
* Challenge: Develop an intuitive and user-friendly interface for job posters and service providers.
  + Measurement of Success: Receiving positive feedback on the usability and design of the application.
* Challenge: Understanding local regulations and legal requirements concerning the project.
  + Measurement of Success: Legal or regulatory aspects are understood.
* Challenge: Successful transition from the current tools (HTML, JavaScript, CSS, PHP, MySQL) to serverless architecture.
  + Measurement of Success: Successful migration with improved performance.
* Challenge: Guaranteeing that user data is secure and private.
  + Measurement of success: Implementing strong security measures and having no security issues.

**Benefits and Opportunities**

There are many benefits or opportunities that could result from the implementation of this project. The development of a web/mobile application that connects individuals who are seeking assistance with those who are providing services could present many benefits and opportunities. The application provides opportunities to resolve post-pandemic issues by offering a convenient online platform that makes it easier for users to connect. This application can help users fulfill urgent needs or seek immediate income without enduring long delays. This application provides a wide range of assistance to users such as relocating, cleaning, running errands, and addressing immediate needs. This application offers tremendous benefits. For example, it can help users save time and money in that it provides them with a fast and easy way to find assistance for their needs. It can also aid users in getting help for tasks that they may not be able to perform themselves, like relocating or cleaning. Furthermore, the application can assist users in finding immediate or urgent work opportunities during economic uncertainty. Additionally, the implementation of this project can provide great learning opportunities for developers. By improving both frontend and backend development skills, one can become more well-rounded in building complex web/mobile applications. The experience gained from this project can be utilized in building more sophisticated and user-friendly applications.

***[NOTE: If necessary, you may add subsections to the ones listed in order to match the requirements in the assignment description. However, do not remove any top-level sections, those that are listed in the Table of Contents.]***

Project Scope

The project scope consists of the development of a web/mobile application that enables users to connect and accomplish many tasks. The in-scope features involve users posting job descriptions, specifying job duration and pay rates, exchanging contact information, creating user accounts, and logging in. The out-of-scope aspects include real-time features, complex reporting, extensive data manipulation, non-screen-based features, and advanced security management in the initial phase of development. The project primarily involves a screen-based interface, obtaining information directly from users, storing data securely using MySQL, and executing basic security measures. HTML, JavaScript, CSS, PHP, and MySQL will be used during this project to lower costs and will transition to serverless architecture upon project completion.

In Scope Features:

* Post Job Description: Users can post descriptions of tasks or jobs they need assistance with.
* Job Duration: Users can specify the timeframe for completing the posted jobs.
* Pay Rate: Users can make known how much money they offer for the services they are seeking.
* Ability to Exchange Contact Information: Users can exchange contact information which allows for communication between those seeking assistance and those providing services.
* Create a User Account: Users can register and create personal accounts on the web/mobile application.
* Log In: Registered users can log into their accounts to access and utilize the features of the application.

Out of Scope Features:

* Real-Time System: Features like instant messaging or live updates, are out of scope for the initial development.
* Reports Production: Complex reporting functionalities are out of scope; the primary focus is on the core features for connecting users.
* Data Storage Manipulation: Extensive data manipulation is out of scope. The emphasis is on connecting users instead of sophisticated data manipulation.
* Non-Screen-Based Features: Non-screen-based features like integration with hardware devices are out of scope for this project.
* Advanced Security Management: This project involves security measures. However, advanced security management features like multi-factor authentication will be implemented in future phases but are currently out of scope.

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Work Breakdown Structure | | | | | | | | | | |
| ID | Task | Dependencies | Status | Effort Hours | Cost | Start Date | Planned Completion | Estimate to Completion | Actual Completion | Resource |
| 1 | Research and select technologies (HTML, JavaScript, CSS, PHP, MySQL) | Project Initiation | Done | 80 | None | 01/18/24 | 03/06/24 | 03/06/24 | 03/06/24 | Technology Research Team (Self) |
| 2 | Design user interface (UI) mockups | Technology Research and Selection | Not started | 80 | None | 03/14/24 | 04/01/24 |  |  | UI/UX Designers |
| 3 | Develop frontend using HTML, JavaScript, and CSS | Design Phase | Not started | 160 | None | 04/02/24 | 05/02/24 |  |  | Frontend Development Team (Self) |
| 4 | Set up the backend server using PHP, implement MySQL database | Technology Research and Selection, Frontend Development | Not started | 180 | None | 05/03/24 | 06/20/24 |  |  | Backend Development Team (Self) |
| 5 | Integrate frontend and backend components | Frontend Development, Backend Development | Not started | 160 | None | 06/21/24 | 07/20/24 |  |  | Integration Team (Self) |
| 6 | Conduct unit and integration testing, address bugs | Integration | Not started | 180 | None | 07/21/24 | 08/13/24 |  |  | Quality Assurance Team (Self/Others) |
| 7 | Develop user account creation and login functionality | Backend Development | Not started | 60 | None | 08/14/24 | 09/07/24 |  |  | Backend Development Team (Self) |
| 8 | Document codebase, and API documentation | Integration, Testing | Not started | 60 | None | 09/08/24 | 09/24/24 |  |  | Documentation Team (Self) |
| 9 | Review project progress, optimize for performance and cost | Testing, Documentation | Not started | 60 | None | 09/25/24 | 10/10/24 |  |  | Optimization Team (Self) |
| 10 | Conduct final project review, deploy the application | Project Review and Optimization | Not started | 60 | Unknown | 10/25/24 | 11/10/24 |  |  | Deployment Team (Self/) |

Project Success Measures

[Describe what measures will be used to calculate project success. Use the template below to list the project completion criteria.]

|  |
| --- |
| Project Completion Criteria |
| 1. Developed within the time allocated. |
| 2. Meets the desired performance/technology level. |
| 3. Post Job Description: Users can post descriptions of tasks or jobs they need assistance with. |
| 4. Job Duration: Users can specify the timeframe for completing the posted jobs. |
| 5. Pay Rate: Users can make known how much money they offer for the services they are seeking. |
| 6. Ability to Exchange Contact Information: Users can exchange contact information, which allows for communication between those seeking assistance and those providing services. |
| 7. Create a User Account: Users can register and create personal accounts on the web/mobile application. |
| 8. Login: Registered users can log into their accounts to access and utilize the features of the application. |
| 9. Transition to serverless architecture |

[Use the table below 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.]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Assumptions and Constraints | | | | | |
| ID | Description | Comments | Type | Status | Date Entered |
| 1 | Users will readily adopt the new web/mobile application. | The assumption is based on the perceived need for the service and the convenience offered by the application. | External | Accepted |  |
| 2 | The chosen technologies (HTML, JavaScript, CSS, PHP, MySQL) are suitable for project requirements. | The assumption is made based on the cost-effectiveness and skill development goals. | Internal | Accepted |  |
| 3 | Users will have consistent and reliable internet connectivity. | The success of the application depends on users being able to connect seamlessly. | External | Accepted |  |
| 4 | Individuals offering services will be motivated to use the platform. | The assumption is crucial for the availability of service providers on the platform. | External | Accepted |  |
| 5 | The application will effectively address urgent needs. | Swift fulfillment of immediate requirements is a key success factor. | Internal | Accepted |  |
| 6 | The project will serve as a valuable learning opportunity for skill enhancement. | Personal skill development is an additional motivator for the project. | Internal | Accepted |  |
| 7 | Limited time available for project completion due to academic deadlines. | The project must adhere to strict timelines to meet academic requirements. | External | Acknowledged |  |
| 8 | Limited budget for the project, especially during the initial phases. | Decisions related to tools and resources should consider budget constraints. | External | Acknowledged |  |
| 9 | Limited availability of human resources, including project team members. | Resource optimization and workload management are critical. | External | Acknowledged |  |
| 10 | Unforeseen challenges and obstacles during project development. | A contingency plan is necessary to address unexpected issues. | External | Acknowledged |  |
| 11 | The project plans to transition to a serverless architecture at a later stage. | Initial development should consider future serverless requirements. | Internal | Acknowledged |  |
| 12 | Limited control over user acceptance and adoption rates. | Success relies on external factors such as user preferences and market dynamics. | External | Acknowledged |  |
|  |  |  |  |  |  |
| 13 | Ongoing uncertainties related to the pandemic may impact user behavior. | Adaptability to changing circumstances is crucial. | External | Acknowledged |  |
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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 the objective is, and what the characteristics of the solution/answer sought are. 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) and 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 High-Level Solution Introduction**

This capstone project responds to the post-pandemic challenges by developing a comprehensive web/mobile application. Its purpose is to seamlessly connect individuals seeking assistance with those offering services, covering tasks like relocating, cleaning, running errands, and addressing immediate needs. The project addresses the decline in accessible services caused by the pandemic, aiming to recreate pre-pandemic ease in finding immediate assistance.

**Objective and Characteristics:** The primary goal is to bridge the gap left by the pandemic, providing a convenient online platform for swift connections. Users can efficiently fulfill urgent needs or seek immediate income. The application's dual focus on frontend and backend development aims to deliver a holistic solution, offering valuable learning opportunities.

Solution

In response to the identified need for a web/mobile application connecting individuals seeking assistance with service providers, the proposed solution aims to deliver a user-friendly, efficient platform. The solution aligns with frontend and backend development, utilizing HTML, JavaScript, CSS, PHP, and MySQL, with future plans for serverless architecture.

Architecture: The solution follows a client-server architecture, where the client is the user interface, and the server handles data processing and storage. Below is a simplified diagram of the system:

A diagram of a computer

Description automatically generated

Components:

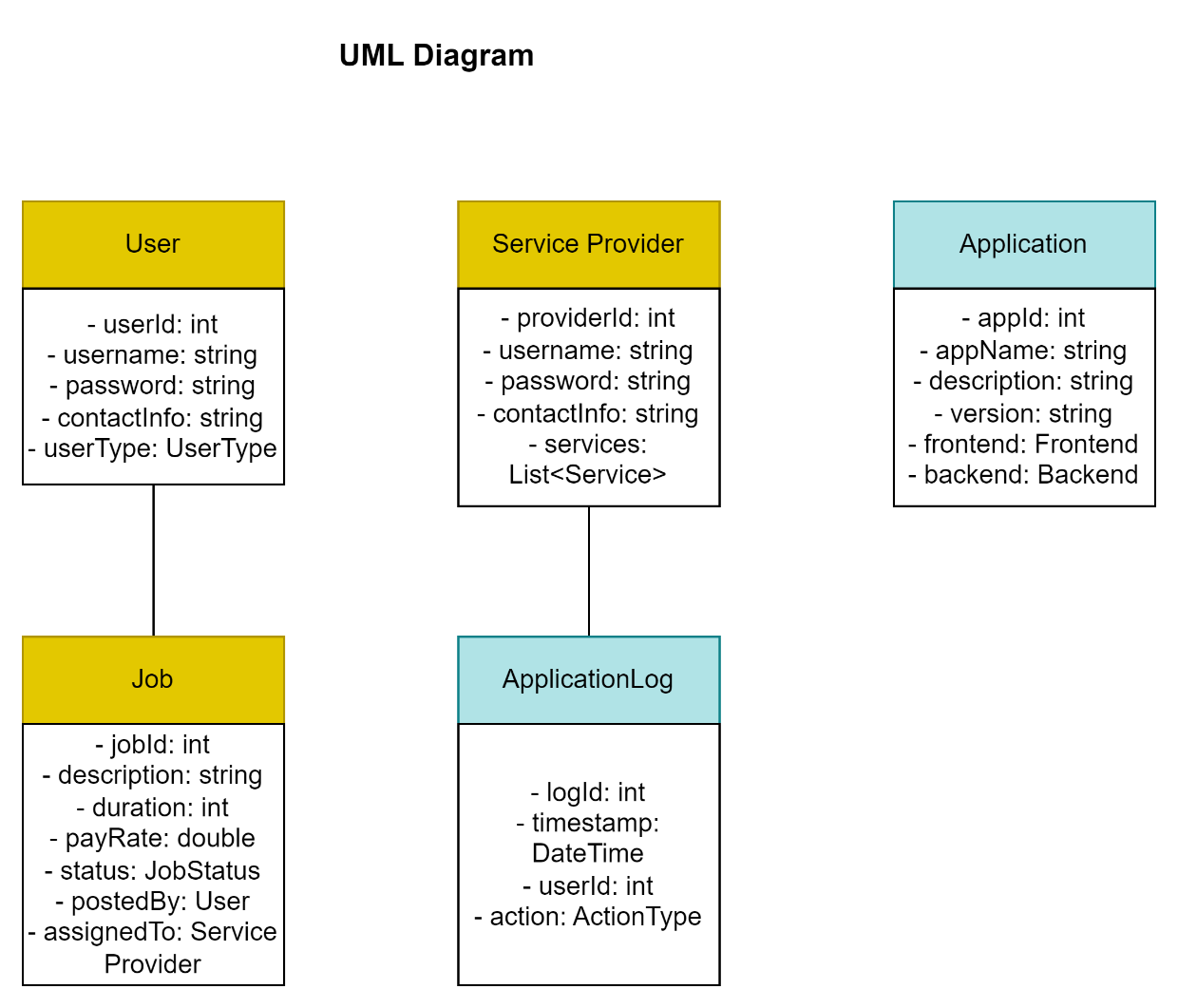
1. Frontend (HTML, JavaScript, CSS):
   * The user interacts with a responsive and intuitive interface designed using HTML, enhanced with dynamic behavior through JavaScript and styled with CSS.
2. Backend (PHP):
   * PHP scripts handle server-side logic, including user authentication, job posting, and data retrieval.
   * The server communicates with the MySQL database for data storage and retrieval.
3. Database (MySQL):
   * Stores user account information, job details, and other relevant data.
   * Ensures data integrity and allows efficient retrieval.

Functionality:

1. User Registration/Login:
   * Users can create accounts, providing necessary information.
   * Login functionality secures user access.
2. Job Posting:
   * Users can post job descriptions, including details such as job duration, pay rate, and contact information.
   * Data is securely stored in the MySQL database.
3. Job Search:
   * A search functionality enables users to find relevant jobs based on criteria.
   * Results are displayed in a user-friendly manner.
4. Communication:
   * Users can exchange contact information securely through the application.
   * Ensures direct and efficient communication between parties.

A computer screen shot of a code

Description automatically generated



Assumptions and Challenges: Assuming a basic understanding of PHP, MySQL, HTML, JavaScript, and CSS, the solution anticipates challenges in ensuring data security, seamless communication, and an intuitive user experience. Regular testing and updates will be crucial.

Conclusion: This solution addresses the post-pandemic need by providing an accessible online platform for connecting individuals in need with service providers. With a robust architecture, user-friendly interface, and key features, the application aims to bridge the gap left by the pandemic, offering a valuable solution and a platform for skill development in mobile application development.

Project Controls

[Use the tables below to define the risks, then list the steps to prevent the risks 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.]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RISK MANAGEMENT | | | | |
| **Event Risk** | **Risk Probability**  **(high, medium, low)** | **Risk Impact** | **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? |
| Technical challenges in web/mobile application development, leading to delays in the development process. | Medium | The impact will be high. | Conduct thorough research and planning before starting the development. Break down the project into smaller tasks and milestones. Regularly update skills and knowledge related to web/mobile application development. | Collaborate with experienced developers or seek assistance from online communities. |
| Delays in project timeline due to unforeseen challenges. | Medium | The impact will be medium. | Develop a detailed project plan with realistic timelines. Regularly monitor progress and identify potential challenges early. Have contingency plans for critical path items. | Allocate additional resources to critical tasks if delays occur. |
| Inadequate user adoption or interest. | Medium | The impact will be medium. | Conduct market research to understand the target audience. Implement user feedback loops during development. Develop a marketing and outreach strategy to generate interest in the application. | If user adoption is lower than expected, analyze feedback and make necessary adjustments to improve the application's appeal. Consider additional marketing efforts or partnerships to boost adoption. |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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, and cost? | How do you intend to deal with this issue? | Who manages this issue? |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |

[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 below to list anticipated and planned or unexpected changes.]

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CHANGE CONTROL LOG | | | | | | | | | |
| **ID** | **Change Description** | **Priority** | **Originator** | **Date Entered** | **Date Assigned** | **Evaluator** | **Status** | **Date of Decision** | **Included in Rev. #** |
| 1 | Expansion of features to enhance user engagement. | Medium | Self |  |  | Self |  |  | 1 |
| 2 | Modification of the user interface to address early feedback. | High | Self |  |  | Self |  |  | 1 |
| 3 | Inclusion of additional security measures to safeguard user data. | High | Self |  |  | Self |  |  | 1 |
| 4 | Integration of a new payment gateway for improved transaction processing. | High | Self |  |  | Self |  |  | 1 |
|  | Delay in project timeline due to unforeseen technical challenges. | High | Self |  |  | Self |  |  | 1 |
| 5 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

Project Cost and Schedule

[Create a spreadsheet of costs related to the scope of the project, with all necessary materials 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. Then, create a project schedule/timeline with dates for completion of key components of the project after all project tasks have been defined and prioritized. Finally, set a programming schedule by implementing work breakdown and task time estimates.]

This project will not require any cost calculations because I plan on using free open-source languages/resources. Below is an estimate of the project schedule/timeline for my capstone project.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Project Schedule/Timeline** | | | **Week** | **Start Date** | **End Date** |
| **Project Planning and Research** |  |  | (1-3) | **2/7/2024** | **2/28/2024** |
| Define project scope and objectives. |  |  |  |  |  |
| Research similar applications. |  |  |  |  |  |
| Identify potential challenges and risks. |  |  |  |  |  |
| **Requirement Gathering and Documentation** |  |  | (4-7) | 2/29/2024 | 3/13/2024 |
| Detail project requirements. |  |  |  |  |  |
| Define key features and functionalities. |  |  |  |  |  |
| Create user stories. | | |  |  |  |
| **Design Phase** | | | (8-11) | 3/14/2024 | 4/4/2024 |
| Create wireframes and mockups. |  |  |  |  |  |
| Design user interface. |  |  |  |  |  |
| Finalize database schema. |  |  |  |  |  |
| **Frontend Development** |  |  | (12-16) | 4/5/2024 | 5/3/2024 |
| Set up HTML, CSS, and JavaScript environment. |  |  |  |  |  |
| Develop user registration and login functionality. |  |  |  |  |  |
| Implement post job description feature. |  |  |  |  |  |
| **Backend Development** |  |  | (17-21) | 5/4/2024 | 5/29/2024 |
| Set up server environment (using PHP) |  |  |  |  |  |
| Implement database functionalities (MySQL) |  |  |  |  |  |
| Develop job duration and pay rate features. |  |  |  |  |  |
| **Integration and Testing** |  |  | (22-25) | 5/30/2024 | 6/20/2024 |
| Integrate frontend and backend. |  |  |  |  |  |
| Conduct unit testing. |  |  |  |  |  |
| Identify and fix bugs. |  |  |  |  |  |
| **User Account Management** |  |  | (26-29) | 6/21/2024 | 7/12/2024 |
| Enhance user registration and login. |  |  |  |  |  |
| Implement user account features. |  |  |  |  |  |
| Allow users to exchange contact information. |  |  |  |  |  |
| **Finalize Features and User Interface** |  |  | (30-33) | 7/13/2024 | 7/31/2024 |
| Refine UI/UX based on feedback. |  |  |  |  |  |
| Ensure all key features are working seamlessly. |  |  |  |  |  |
| **Testing and Quality Assurance** |  |  | (34-37) | 8/1/2024 | 8/22/2024 |
| Conduct thorough testing. |  |  |  |  |  |
| Address any remaining issues or bugs. |  |  |  |  |  |
| Optimize performance. |  |  |  |  |  |
| **Documentation and Training Materials** |  |  | (38-39) | 8/23/2024 | 8/29/2024 |
| Document the project. |  |  |  |  |  |
| Prepare user guides. |  |  |  |  |  |
| Create training materials. |  |  |  |  |  |
| **Deployment** | | | (40-41) | 8/30/2024 | 9/4/2024 |
| Prepare for deployment. |  |  |  |  |  |
| Deploy the application to a testing environment. |  |  |  |  |  |
| Ensure server and hosting configurations are optimized. |  |  |  |  |  |
| **User Acceptance Testing** |  |  | (42-43) | 9/5/2024 | 9/11/2024 |
| Gather feedback from users. |  |  |  |  |  |
| Make any final adjustments based on feedback. |  |  |  |  |  |
| **Launch** | | | Week 44 | 9/12/2024 | 9/18/2024 |
| Deploy the application to the production environment. |  |  |  |  |  |
| Announce the launch to users. |  |  |  |  |  |
| **Post-Launch Monitoring and Support** |  |  | (45-49) | 9/19/2024 | 10/16/2024 |
| Monitor application performance. |  |  |  |  |  |
| Provide support for any issues. |  |  |  |  |  |
| Plan for future updates and improvements. |  |  |  |  |  |

**Programming Schedule with Work Breakdown and Task Time Estimates:**

Below is an estimate of the programming schedule with the implementation of the work breakdown and task time estimates.

* HTML, CSS, and JavaScript Setup: 2 weeks
* Frontend Development: 7 weeks
* PHP and MySQL Setup: 3 weeks
* Backend Development: 9 weeks
* Integration and Testing: 4 weeks
* User Account Management: 3 weeks
* Finalize Features and UI: 3 weeks.
* Testing and QA: 3 weeks
* Documentation and Training Materials: 2 weeks
* Deployment: 2 weeks
* User Acceptance Testing: 2 weeks
* Launch: 1 week
* Post-Launch Monitoring and Support: 4 weeks

Appendix A – References

[*List all references using APA style.*]

**References**

Johnson, B., & Smith, J. (2021, June). Towards ethical data-driven software: filling the gaps in ethics research & practice. In *2021 IEEE/ACM 2nd International Workshop on Ethics in Software Engineering Research and Practice (SEthics)* (pp. 18-25). IEEE. <https://ieeexplore.ieee.org/abstract/document/9474816>

Branch, J. A. (2022, January 27). Thinking ethically as a Christian. Lexham Press. <https://blog.lexhampress.com/2022/01/27/thinking-ethically-as-a-christian/>

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.]