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Written Assignment 1: Software Development Life Cycle (SDLC)

Name Omitted

MSIT5250 – Foundations of Software Engineering

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**Introduction**

For the purpose of this assignment, I am acting as an IT consultant and project manager who is assisting small businesses make the move online.

1. **What is the name of your store?**

The name of the store is “Dancing Days".

1. **Decide what type of store this is. Is it a clothing store or maybe an online bookstore? Include all this information in your submission.**

The store is a unique bohemian clothing store located in the Kensington Market district, Toronto, ON, Canada. The client is presently restricted to a physical location only but is looking to expand their business market by selling and shipping online. They are wanting to sell clothing that they presently house, but don’t have room to put out on the floor for sales (overstock).

1. **Decide and justify your SDLC approach(es).**

Since this project is smaller in nature, I chose the traditional waterfall method. This is because the client’s needs are relatively simple. The software implementation is not overly complex because it involves a single business location going online. The waterfall method is linear in methodology, as it successively progresses through defined stages through to project completion. The methodology is well suited to projects have “fixed, unchanging requirements, require specific documentation, and well understood technology” (Eye on Tech, 2022). This is a good description for the needs of this project. There is a single project sponsor for this project, which is the sole proprietor and owner of the establishment. The expectations are clear and simple in required functionality, which also simplifies expectations for a timeline.

1. **Apply the SDLC method(s) to this scenario.**

**I. Requirements**

Front end – Web server hosting a business site, as well as the functionality to work with database (server-side / back-end) data. The site will allow for users to shop online by presenting product details like description, price, and quantity in stock.

Back end – Databases will contain information such as customer account information (email, password, address), as well as product information to be presented on the front end (qty, product description).

The stakeholders for the proposed project include a sole proprietor and sole financial investor (owner) attempting to expand sales online. The owner has recruited a project manager as a consultant whose discretion shall be used to determine resource allocation. As the project manager, I have decided to recommend a timeline of one 6 weeks.

To complete the components of the project within the given time, I propose a senior developer oversee two contracted programmers with experience in full-stack development. The job requirements for one will be a programmer with some form of certification or experience with security since the business will have to handle sensitive information like payment information and customer data. This will mean that safeguards such as encryption will have to be used, and some relevant knowledge in security will be important. Due to the move online, security considerations will need to be taken to ensure the business remains functional, available, and secure. The other individual sought to be contracted will need to specialize more in presentation and graphics, as the sponsor wants the presentation of their business to be visually appealing and user friendly.

The senior developer will coordinate between contracted programmers, as well as troubleshooting if issues arise. Their role in the project is expected to be minimal, but their expertise is sought to ensure the project progresses smoothly. The sponsor has considered eventually moving the business onto a mobile app but wants to first test the success of the setup mentioned here before doing so.

The store will need the ability to update stock in the database, in the event that they need to move some of the overstock clothing onto the sales floor.

**II. Design**

The technical requirements for this project include the appropriate coding to be able to present product information to customers on the site, as well as the capability to integrate database information about products (i.e. quantity, description) into the website. To be able to do this effectively, market research is important to best ensure a successful implementation. This would include information about competitors, their pricing, and the comparability of products offered. This is a somewhat unique business with a very select market, so research is particularly important to be able to offer its products effectively and competitively.

**III. Implementation**

Programmer 1

* Design and code databases to be able to handle user registration, e-commerce transactions, and inventory.
* Program functionality for onsite business staff to be able to receive completing orders for shipping, and to be able to adjust inventory stocks in the event that items move from overstock onto the sales floor.

Programmer 2

* Acquire domain registration, and online hosting services for the website.
* Design an attractive website that can interact with backend programming and databases.
* Provide an interface for user registration, verification, and presentation of products for sale.

Senior programmer

* Check in occasionally with programmer 1 and 2.
* Act as expert consultant for the purposes of troubleshooting.
* Ensure final product is functional and secure, and that all business requirements have been met by testing and signing off on the final product.
* If necessary, facilitate integration between the two programmers.

**IV. Verification and testing**

Each programmer is responsible for ensuring the functionality of their respective components by routinely testing their individual code throughout development. The senior developer will oversee final testing and integration in final weeks, before presenting the final product to the customer.

**V. Deployment and maintenance**

Deployment will occur in the sixth and final week, at which point the product is expected to be fully operational. In terms of maintenance, services for thereafter will fall under the responsibility of the owner. The owner may contract continued services from this team or may choose others to provide various services (updates, security, patching).

1. **Decide which programming language(s) you are going to use.**

The languages used will be PHP, SQL, HTML, and CSS5 for online e-commerce. These languages are appropriate because the provide the functionality to be able to display an attractive webpage (HTML, CSS5), integrate database components (PHP), and access or alter components (SQL, PHP).

1. **List all the requirements you will need to meet your goal (scenario). For example, securing customer data (credit card information, shipping, and billing address, etc.), creating a mobile app, managing the retailer’s database, and so on.**

These were covered in [section I](#req) above.

1. **Your submission should include a screenshot of your GitHub account (created in a previous activity) and a document with your approach to this scenario.**

A screenshot of a computer

Description automatically generated

References

Adobe Communications Team. (2022). *Waterfall Methodology: A Complete Guide.* Adobe Experience Cloud Blog. <https://business.adobe.com/blog/basics/waterfall#common-stages-in-a-waterfall-process>

Eye on Tech. (2022, November 24). *What Is The Waterfall Method and How Does it Work?* [Video]. YouTube. <https://www.youtube.com/watch?v=bNLcRdrSQAU>

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