**Department of Information Technology, Northeastern University**

**ITC4850 Information Tech Project**

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**January 19, 2025**

**Project Title:**

**Design and Development of an E-Commerce Website for a Family-Owned Plant Business**

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**Design and Development of an E-Commerce Website for a Family-Owned Plant Business**

Project Overview: This project focuses on developing a comprehensive e-commerce platform for a family-owned plant business that specializes in selling a wide range of indoor and outdoor plants, gardening supplies, and accessories. The website will not only serve as an online store but will also include additional customer-centric features such as educational content (plant care guides, blogs), an intuitive product catalog, secure payment options, and order tracking. The goal is to create a modern, user-friendly website that enhances operational efficiency, expands the business’s online presence, and improves customer engagement.

Project Sponsor: The project sponsor is Plant Haven, a family-owned plant business that specializes in offering a variety of plants, gardening tools, and accessories. The sponsor will provide insights into the product catalog, customer base, specific requirements for the website, and desired functionality. The sponsor will also act as a point of feedback throughout the project to ensure the site meets its vision.

Project Objectives:

1. E-Commerce Platform Development:
   * Design and develop a fully functional, responsive e-commerce website that can be accessed seamlessly across desktops, tablets, and mobile devices.
   * Secure user logins, shopping carts, product catalog with filters (e.g., plant type, size, price), checkout process, and secure payment gateways.
2. Backend Functionality (Inventory & Order Management):
   * Create a backend system to manage inventory, update product availability, and handle customer orders.
   * Inventory tracking, automatic stock updates, order management, and real-time order tracking for customers.

**Objects/ DB Design:**

1. Products (id pk, cat\_id fk, product\_name, description, price, qoh)
2. Product Category (id pk, type, description, image(s))
3. Customer (id pk, last\_name, first\_name, email, password, phone, address)
4. Orders (id pk, customer\_id fk, order\_date, total\_amount, status, paid\_date)
5. Order Detail (id pk, order\_id fk, product\_id fk, quantity, price)
6. Customer Engagement Features:
   * Design interactive and informative sections that engage customers, encourage return visits, and build a community.
   * Plant care guides, FAQs, gardening tips, a blog section, and a newsletter sign-up option for promotions and updates.

**Pages:**

* + - 1. Login (post /login)
      2. Register (post /register)
      3. Products (get /products)
      4. Add To Cart (post /add2cart)
      5. View Cart (get /cart)
      6. Check out (post /checkout)
      7. Inventory Management (update description, price, qoh)
         1. Get and post.

1. SEO & Marketing Integration
   * Increase online visibility through proper SEO strategies to attract organic traffic.
   * SEO optimization for product pages, blog posts, and site content. Integration with social media platforms and email marketing tools to facilitate customer engagement and promotions.

Learning Goals:

1. Web and App Development:
   * Gain hands-on experience building and deploying a full-stack web application.
   * Learn to implement best practices for e-commerce website development, ensuring a secure and scalable platform.
2. Database and Inventory Management:
   * Develop a strong understanding of database design and management, specifically for inventory systems and order tracking.
   * Learn how to integrate backend systems to dynamically update stock levels and manage customer transactions.
3. UX/UI Design:
   * Design a visually appealing, user-friendly interface that makes it easy for customers to browse, shop, and engage with content.
   * Implement responsive design to ensure compatibility across different screen sizes and devices.
4. Project Management:
   * Enhance project management skills, particularly in the areas of timeline management, task delegation, and client communication.
   * Experience in working collaboratively on a team to deliver a working product on time.

Project Deliverables:

1. Project Requirements Document:
   * A detailed document that outlines the business requirements, target audience, project scope, desired features, and specific functionalities for the website.
2. Wireframes and Site Map:
   * Visual representations of the website’s layout, structure, and user navigation flow. This will help the team and sponsor align on the initial design and user experience.
3. Fully Functional E-Commerce Website:
   * The final website will include:
     + Product listings with detailed descriptions, images, and pricing.
     + User accounts, a shopping cart, and secure checkout.
     + Backend functionality for inventory tracking and order management.
     + SEO-optimized content for better visibility on search engines.
     + Engaging customer-facing content such as blogs, plant care tips, and a newsletter section.
4. Content Creation:
   * Educational content, including plant care guides, gardening tips, and blog posts, to engage customers and provide value beyond shopping.
5. Testing and QA Report:
   * The detailed report documenting the testing process, issues found, and the final results of testing to ensure the website works smoothly across all devices and platforms.
6. Final Presentation:
   * A polished presentation that demonstrates the fully functional website and highlights the key features implemented, accompanied by a walkthrough for the sponsor.

Timeline and Milestones:

* Weeks 1-2:
  + Tasks: Project kick-off, gathering requirements from the sponsor, and finalizing project scope.
  + Outcome: Completed project requirements document.
* Weeks 3-5:
  + Tasks: Front-end development and website layout design, including wireframes and UI/UX design.
  + Outcome: Initial website mockups and wireframes. Development of the product catalog interface.
* Weeks 6-8:
  + Tasks: Backend development for inventory management, order processing, and database integration.
  + Outcome: A functional database and backend system that supports inventory updates and order processing.
* Weeks 9-10:
  + Tasks: Add customer engagement features such as plant care guides, blogs, and FAQs.
  + Outcome: Fully integrated customer-facing content and blog section.
* Weeks 11-12:
  + Tasks: Perform user testing, identify and fix any bugs or usability issues, and refine design for responsiveness.
  + Outcome: Fully tested and responsive website, ready for review.
* Weeks 13-14:
  + Tasks: Final content optimization (SEO) and integration with social media/email marketing tools.
  + Outcome: Optimized website with content updates, SEO, and marketing features in place.
* Week 15:
  + Tasks: Final review and delivery to sponsor, including project documentation and presentation.
  + Outcome: Complete website with all features fully functional and documented.

Team Members & Roles:

1. Daniel Murphy (Front-End Developer):

* Design the website’s layout and ensure it is visually appealing and user-friendly.
* Implement responsive web design to ensure compatibility with different devices.
* Develop product catalog pages and integrate user-facing features such as the shopping cart.

1. Matheus Paterno (Back-End Developer):

* Design and implement the backend database for inventory and order management.
* Integrate the website with payment gateways for secure transactions.
* Ensure that the website’s back-end is functional and efficient, allowing seamless data flow and updates.

1. Sumaya Noushin (Project Manager):

* Oversee the overall project and ensure that tasks are completed on time.
* Act as the point of contact for the sponsor and ensure that their needs and feedback are incorporated.
* Manage the team’s collaboration and ensure smooth communication

Team Charter:

Mission Statement:

Our mission is to collaboratively create a high-quality e-commerce website for a family-owned plant business. By utilizing our collective skills in web development, UX/UI design, and project management, we will help the sponsor expand their business online and engage with customers effectively.

Communication Plan:

* Weekly Team Meetings: Virtual meetings to track progress, discuss challenges, and coordinate tasks.
* Tools: Slack for communication, Trello for task management, and Zoom for meetings.
* Sponsor Updates: Bi-weekly updates via email or video call to ensure alignment with the sponsor’s expectations.

Conflict Resolution:

* Open and respectful communication to address challenges as they arise.
* If necessary, the Project Manager will mediate conflicts to ensure project success.

Why This Project Fits:

1. Relevant Skill Development: The project offers hands-on experience in web development, database management, UX/UI design, and project management, making it an excellent fit for the course.
2. Real-World Application: The project addresses the real-world need of a family-owned business to modernize and expand its customer base through an online platform.
3. Achievable Within Timeframe: With a clear timeline and well-defined tasks, the project can be completed within 15 weeks.
4. Team Collaboration: The project allows for active collaboration among team members, leveraging each individual’s strengths.