PROPOSAL FOR NINASTEA WEBSITE UPGRADE

May 27, 2021

ABSTRACT

Proposal of upgrading current static website to dynamic, database driven website for NINAsTEA company.

Xiaojing Shi

shi-x@webmail.uwinnipeg.ca

Flash Web Design

Steve George

edu@pagerange.com

PHP Programming Capstone Project

Web Development Program

University of Winnipeg, PACE

Table of Contents

Proposal for NINAsTEA Website Upgrade

Introduction

NINAsTEA is a new local retailer based in Winnipeg, Manitoba selling teas. They are currently looking for a web development company to upgrade the current static website into a dynamic, database driven website in order to increase user experience and administrative management efficiency.

The main technology that will be used to make the upgrade are PHP and MySQL. First, we will create a database with MySQL with all data we need for the website organized and stored in different tables. Second, we will use PHP to convert all existing HTML pages into PHP pages with MVC(Model-View-Controller) pattern. This can better organized codes and make maintenance and changes easily. Third, with PHP and MySQL, we can get data from the database and dynamically render pages.

Features and Functions

The overall goal is to upgrade the current website to a dynamic and database driven website. The upgraded website should have the following features:

For customers
1. Search products. Customers can search products by keyword. Search bar is located on top of each page.
2. Sorted products. Customers can view products sorted by different categories.
3. Products list and detail information pages.
4. Make online orders. Customers can add products into shopping bag, edit quantities, view order subtotals, and make payment.
5. Add products to wish list. Customers can add products into wish list, as well as remove products from wish list. They can also save the list for later use.
6. Registration authentication. When a customer registers, the email provided will be verified and make sure it is unique in the database.
7. Log in and Log out authentication. Passwords entered will be encoded for website security.
8. After logging in, customers can view profile, wish lists, previous orders and make new orders.

For admin users
1. Log in and Log out authentication.
2. After logging in, admin users can view products, customers, orders and logs.

3. On view products page, admin users can view, edit, and delete a current product, add a new product, and update database accordingly.
4. On view customers page, admin users can view all current customers.
5. On view orders page, admin users can view all previous orders.
6. On view logs page, admin users can view administration daily logs.

Database

There are 5 tables in the database: customers table, teas table, orders table, order_tea table, and log table; including following data type: integer, varchar, decimal, enum, boolean, text, char, date, datetime.

1. For customers table, data is collected mainly though registration process. We are collecting user's name, email, password, age, phone, address, city, province, postal code, country from registration form. With email and password, customers can log in and view profile, previous orders, wish list and make an online order. Beside, an unique customer id will be generated in database automatically. In order to distinguish a regular user and an admin user, privilege level is added with default value 0 for regular user and 1 for admin user.

2. For teas table, data is collected from NINAsTea company. This table is the primary table for the website. It includes all information of all products: product id, name, price, weight, type, caffeine, origin, expire date, organic, ingredients, description, SKU number, image. Customers can view product list and product details; sort products by caffeine level, tea type; search product with keyword; Admin users can add, view, edit and delete products from back end admin page.

3. For orders and order_tea tables, data is collected from online order processes. After customers successfully make an online order, customer id, order date, subtotal, gst, pst and total amount will be stored in orders table with an auto-generated id. Tea ids, unite price, quantity and line price will be stored in order_tea table. These two tables can interact with same order id. Orders table and customers table can interact with same customer id. Teas table and order_tea table can interact with same tea id. In the end, we can use all these information to display a detailed order receipt.

4. For log table, data is collected when any user visit, view or interact with NINAsTea website. Every time an interaction occurred, it triggers the log function and file information of current date, request method, request uri, htto

status of the request, information about the user's browser to the log table in database. Only admin users are able to view it after logging in.

Use Cases

Unauthenticated users

An unauthenticated user can visit all five main pages (home,tea,rewards,shipment,contact) through the main menu, he/she can view product list and detailed information; search for a certain product; add products into shopping bag and wish list; view the shopping bag; edit products quantities and remove products. But he/sha can not view the wish list or proceed to check out to place an order.

Authenticated users

An unauthenticated user can register or log in to become an authenticated user. Once a customer registers or logs in successfully, he/she will land on profile page. From here, users can access to "My Orders" page to view all previous orders; "My Wish List" page to view products saved in the wish list. They can also remove products from wish list; add product to shopping bag directly from wish list; Proceed to check out and make an order.

Admin users

Admin users can access the backend admin site. Once an admin user signs in successfully, he/she will land on the admin dashboard. From here, the admin user can view, add, edit, remove, and search products from "View Products" page; view all customers sorted by created time from the "View Customers" page; view all orders sorted by created time from the "View Orders" page; and view most recent 10 logs from the "View Logs" page.

Security

XSS protection

Cross site script injections are prevented by using PHP built-in htmlentities() function to sanitize data. This makes sure that all data get sanitized before getting used throughout the website.

CSRF protection

Cross-site request forgery attacks are prevented by adding CSRF tokens to forms and session. Tokens are random and encoded values. When submitting, the token will be verified, and the form will be submitted only if the token matches the setting.

SQL injection protection

SQL injections are prevented by using prepared statements. When interacting with database, to avoid the input be taken as part of SQL command, we bind parameter and thus force the input to be handled as parameters.

A Sample Form Submission

Post

When user click submit button, the registration form is submitted to the server through an HTTP POST request.

Redirect

The server responds to the POST request by directing users to different locations. If the form does not pass the validation, the server redirects back to the registration form page with error messages; if the form pass the validation, server redirect to profile page with a flash message fading on the top of the page.

Get

Once the server redirects users to the profile page, it retrieve data from the database and renders the profile page. And now users can see their profile information (not including password).

You have successfully Registered!

NINAsTEA

Home   Teas   Rewards   Shipment   Contacts

Account Info
My Profile
My Orders
My Wish List

Your Profile

Name: Nina

Email: test3@gmail.com

Phone: 2041231234

Address: Test Ave

City: Winnipeg
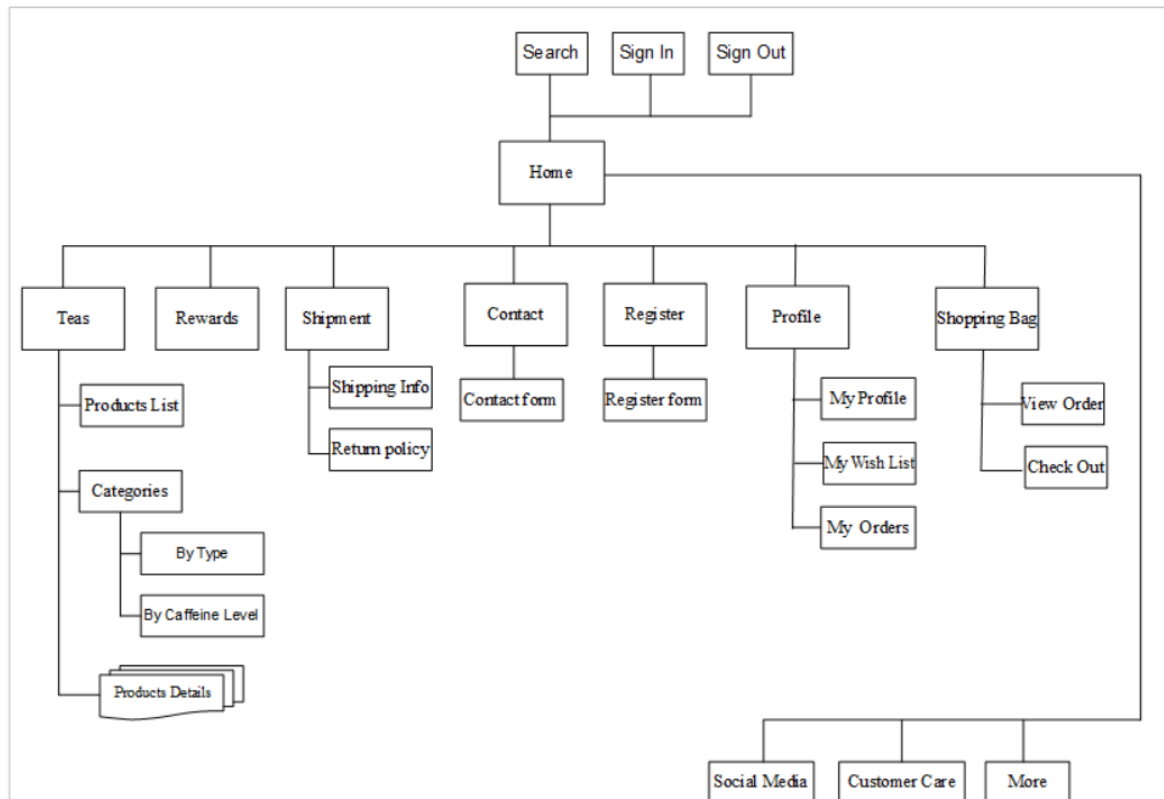
Province: MB

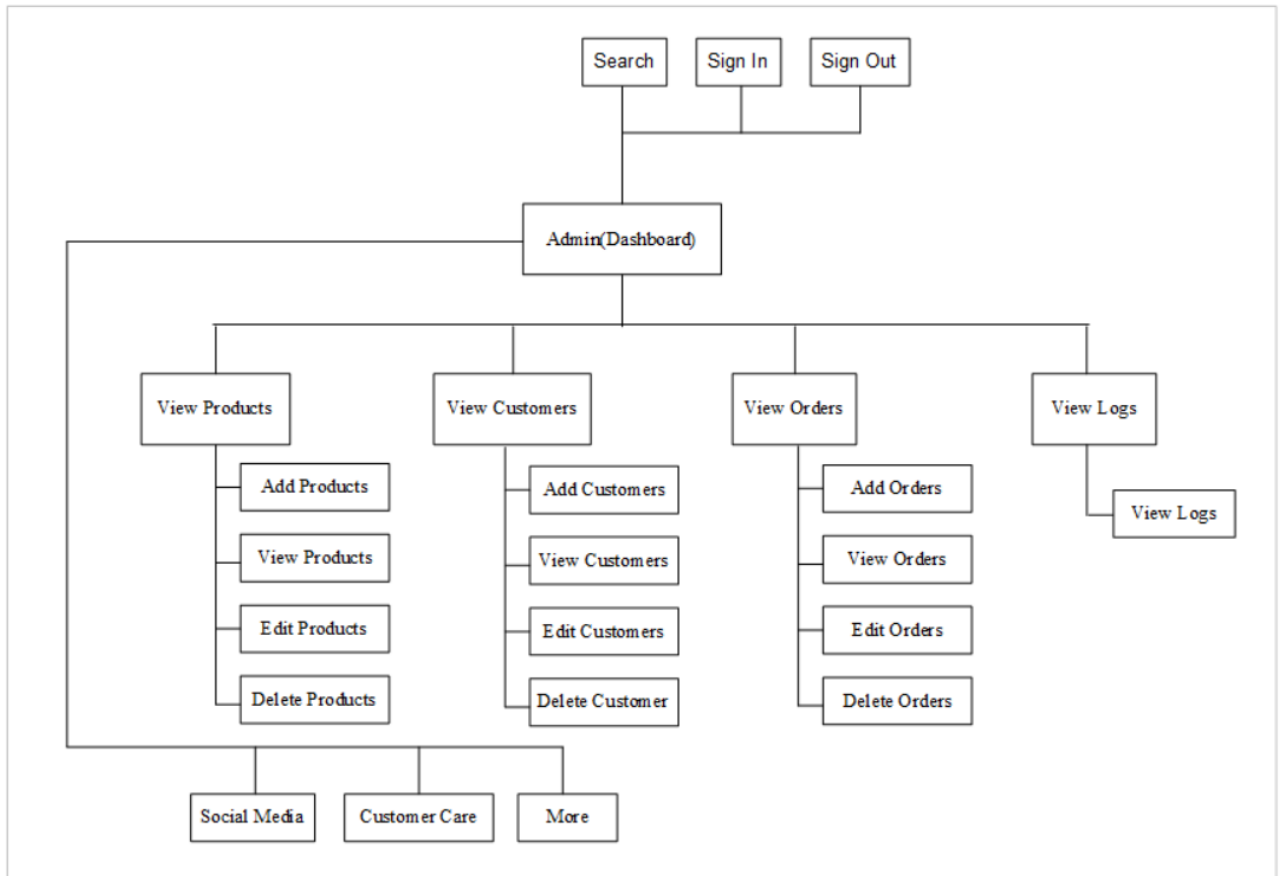**Postal_code**: T1T 1T1

Country: canada

Sitemap

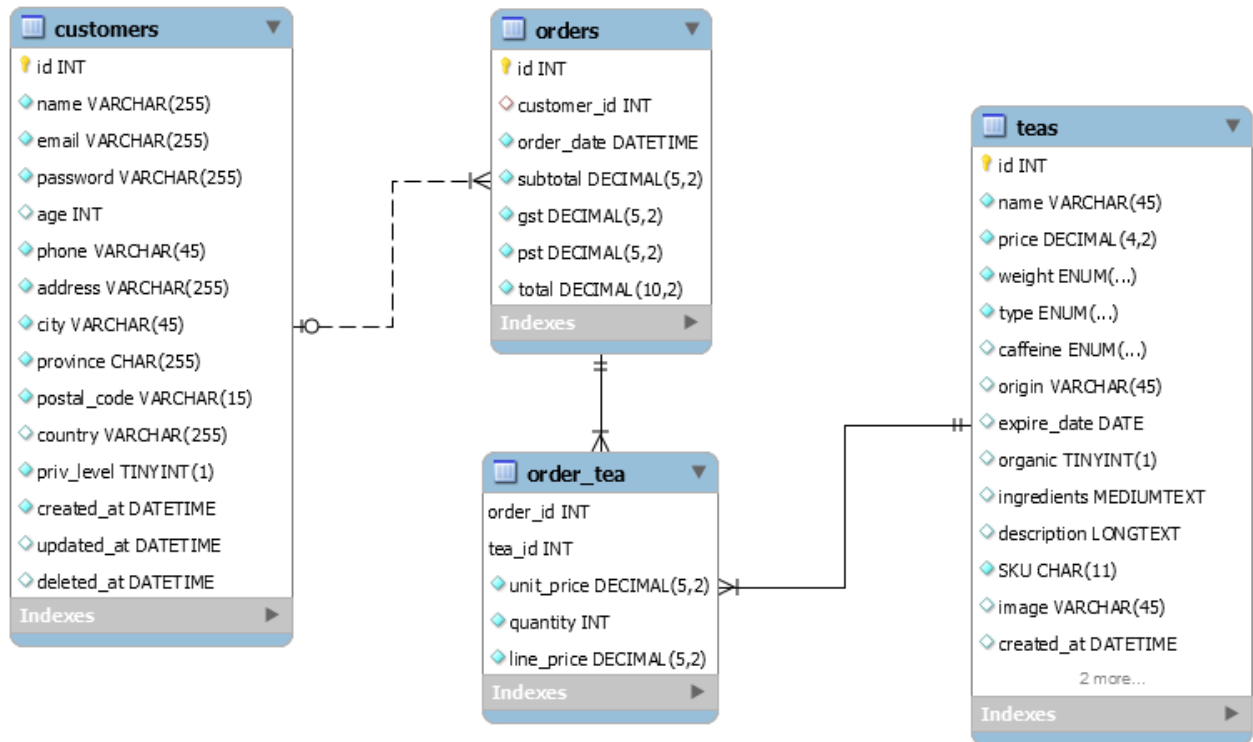## Front End Sitemap

Back End Sitemap

Physical Data Model

Time Estimate

Phase 1: Database establishment

Tasks	Estimated Time
Create five tables in the database and normalize to 3NF	2 hours
Insert 20 records for the primary table and 5 records for other tables	2 hours

Phase 2: Front End HTML

Tasks	Estimated Time
Website Redesign	2 hours
Add new pages(static) to the current website	
Product detail view	1 hour
Category view	1 hour
Profile view	1 hour
Register view	2 hour
Sign in view	1 hour

Phase 3: Front End PHP Scripting

Tasks	Estimated Time
Convert html files to php files	2 hours
Create MVC folder structures	2 hours
Components	
Config files	1 hour
All controllers	20 hours
All models	4 hours
All views	20 hours
All classes/validators	4 hours

Phase 4: Back End PHP Scripting

Tasks	Estimated Time
Config files	1 hour
All controllers	20 hours
All models	4 hours
All views	20 hours
All classes	1 hours
Validators	1 hours

Phase 5: Testing
Estimated time: 2 hours

Site Bible

Hosting/Cloud Provider
DigitalOcean

Server Type
Virtual private server (VPS)

PHP Version
PHP 7.4.15

IP of Server
143.110.218.200

URL of Project
http://capstone.wdd-nina-shi.xyz/

Admin User Login
Email: test@gmail.com

Password: MYP@SSWORD1

Regular User Login
Email: test2@gmail.com
Password: MYP@SSWORD1