Undergraduate Final Year Project

Literature Review

Course: COMP1682

Submitted by Nguyen Quang Thong

Student ID: GCD17150

Supervisor: Tran Trong Minh

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Abstract

The purpose of this study is about the website that I will build in the future, which is the "SuppHealthCare" website. In this essay, we will discuss how the website is designed, the techniques applied to the product implementation. Through this document, I have a desire to create a website with the aim of providing essential supplements for everyone during the COVID-19 pandemic.

Acknowledgement

During implement this research, I really thank my supervisor and lecturer Mr. Tran Trong Minh accompanied and helped me. With his encouragement and helpful advice, he helped me complete the report on this research on University of Greenwich in Viet Nam (Da Nang). In addition, I would like to thank the school for enabling me to participate in this subject so that I can improve my knowledgement in the present time. More importantly, I also want to thank my classmates for helping me complete this research. From there, they made important recommendations on my report and helped me to complete this report in the best way.

Introduction

"SuppHealthCare" website is built and developed based on my ideas. This website is implemented based on reality. As the COVID-19 situation becomes more and more complicated, there is no cure or vaccine yet. The ability to fight off disease depends on the immune system of each person. When the body is healthy, has good resistance, the risk of viral infection is less, or if infected, it will quickly heal. One of the simple ways to increase the body's resistance is to focus on supplementing essential vitamins, which can increase resistance through foods, or can be supplemented with supplements but must follow prescription of a doctor or medical professional. Through this document I have a desire to create a website with the aim of providing essential supplements for everyone during the COVID-19 pandemic.

Literature Review

General analysis of dietary supplement usage

To have an overview of dietary supplements, we will together learn and briefly study the process of forming and developing supplements. From there, we can better understand what a supplement is.

According to Wikipedia as the conceptual definition of the Dietary Supplement Health and Education Act of the United States of 1994 cites: "The definition of the term" dietary supplement "or a supplement is a product intended to supplement. The diet contains nutritious ingredients that are beneficial for health, including vitamins, minerals, proteins, amino acids, ... so that people can use them safely, synthesize dietary supplements for use". (Dietary Supplement, n.d.)

100% of the ingredients for these supplements are entirely natural. For example, protein supplements that support muscle growth such as Whey Protein will be completely extracted from 100% whole cow's milk, Vitamin supplements will be extracted from vegetables, tubers ...

In other words, the source of the supplement is also from natural foods, our use of supplements as well as dietary supplements through natural foods, but for supplements will be convenient. more beneficial, better extraction and higher efficiency for the user.

According to US online consumer food supplement use survey, as for the types of supplements used, CRN's 2019 survey found that vitamins & minerals continue to be the most commonly consumed supplement, with 76% of Americans already taking these products in the past 12 months. The second most popular are specialty supplements (40 percent), followed by herbs and plants (39 percent), sports nutrition supplements (28 percent), and weight management supplements (17 percent). (dietary supplements usage statistics1, n.d.)
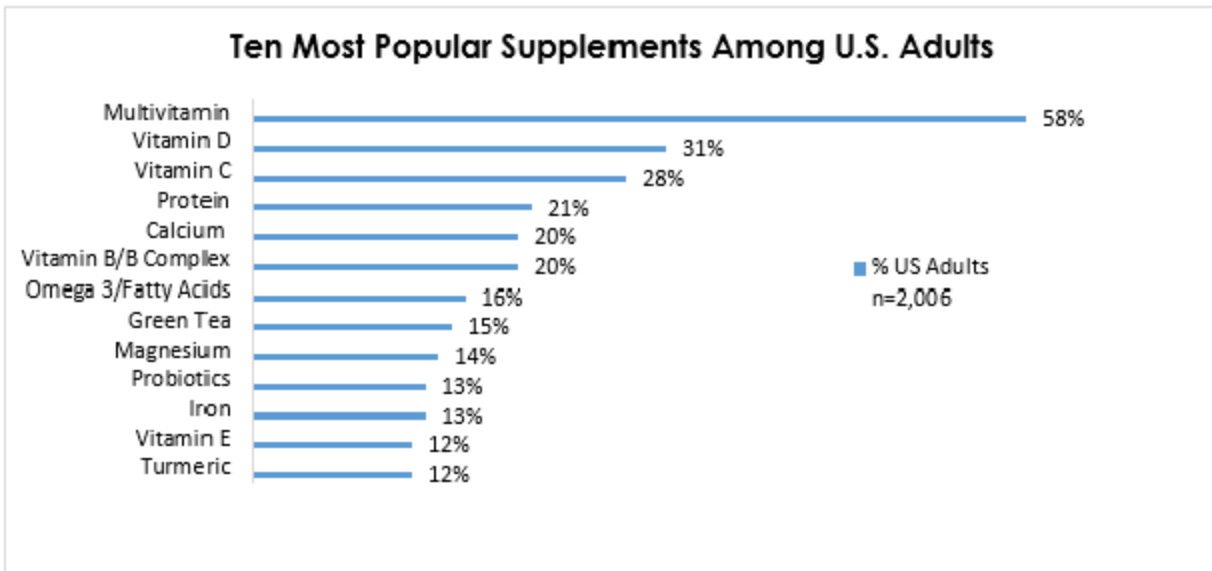
Figure 1: Statistics Using Dietary Supplements

According to US online consumer food supplement use survey, 98% of supplement users take vitamins and minerals. 73% of supplement users take a multivitamin, making it the most popular supplement in this category and overall. (dietary supplements usage statistics2, n.d.)
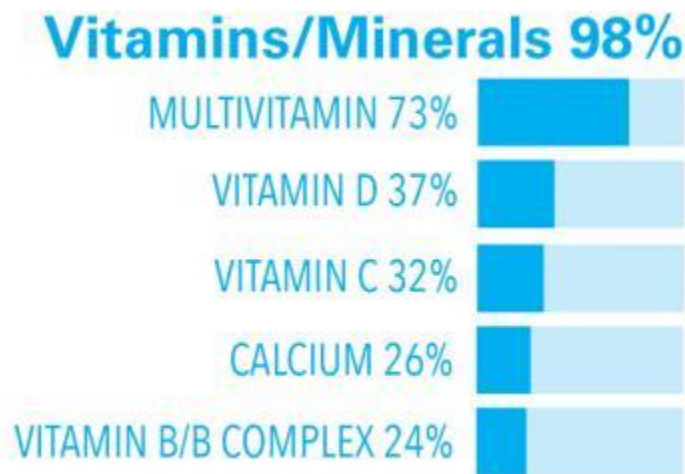

Figure 2: Statistics Using Dietary Supplements

According to US online consumer food supplement use survey, the 2017 CRN Consumer Survey of Supplements found that 76% of Americans are taking supplements, up from 64% 10 years ago in 2008. (dietary supplements usage statistics2, n.d.)
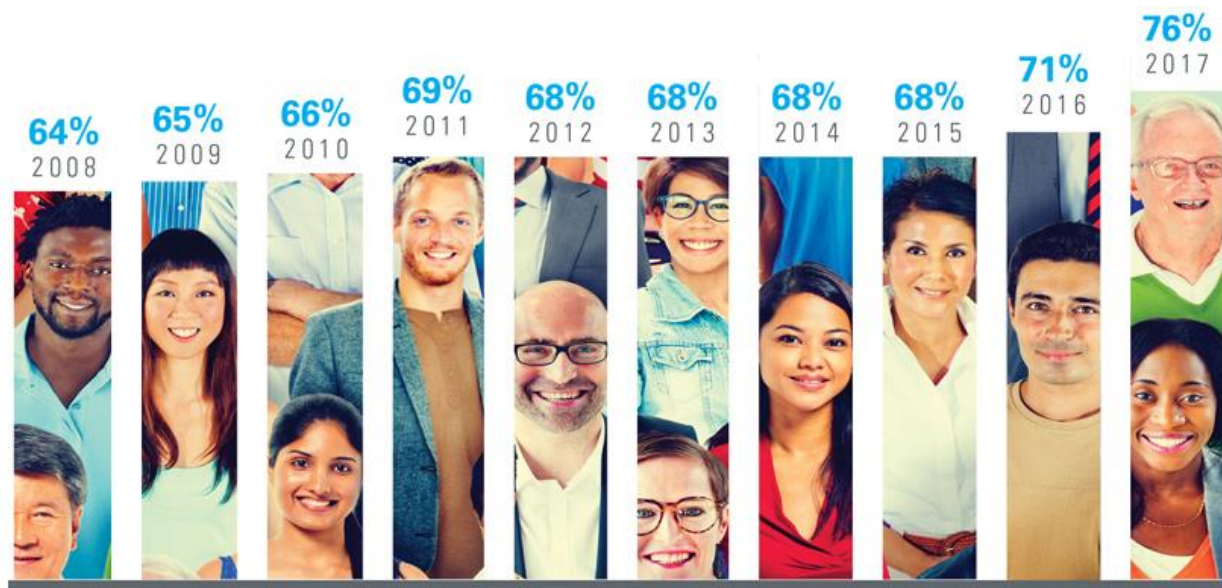

Figure 3: Statistics Using Dietary Supplements

Web Technologies

To be able to complete the final project, namely implementing a website applying some technology based on what I have learned. This project is divided into 2 main parts including Front-End (FE) and Back-End (BE). For FE, I will apply HTML, CSS and Bootstrap inside the project. For BE, I will use the server-side programming language PHP to be able to set the functions for the project. In addition, I also use a Javascript programming language (jQuery Ajax in particular) to be able to execute APIs.

According to Wikipedia, World Wide Web, or WWW for short, is a global network that is a global information space where people can access (read and write) information through Internet-connected devices; an Internet-based information system that allows documents to be linked to other documents by hypertext links, allowing users to search for information by moving from one document to another. (World Wide Web, n.d.)

According to a person named Tim Berners-Lee, he was the inventor of the World Wide Web when he worked for CERN in March 1989 by submitting Information Management: Proposal and writing the first web browser in the year. 1990. The browser was released outside of CERN in 1991, first to other research institutions starting in January 1991 and to the public on the Internet in August 1991. The World Wide Web was the hub for broadcasting is the Information Age and is the primary tool that billions of people use to interact on the Internet. (Tim_Berners-Lee, n.d.).

According to an online statistical data on worldwide Internet usage on October 26 in 2020, around the world, the internet continues to transform the way we connect with others and share information. With its growing influence on individual consumers as well as major economies, the Internet is becoming an increasingly important part of our daily lives. In 2019, the number of Internet users worldwide reached 4.13 billion, meaning that more than half of the global population are currently connected to the Internet. But while the digital population is clearly growing in many parts of the world, internet accessibility and availability can vary significantly by region. (Statistics of Internet usage, n.d.)

Database Technologies

Interacting with a website without a database is the same way that you are surfing a static website. Therefore, the final project must have the database in order to have the most realistic execution, interaction and simulation.

According to Wikipedia, database is a collection of organized data, usually stored and accessed electronically from a computer system. As databases become more complex, they are often developed using formal design and modeling techniques. (Database, n.d.)

According to an English computer scientist named Edgar F. Codd, who invented the relational model for database management, the theoretical basis for relational databases and management systems relational database. The relational model, first proposed by Edgar F. Codd in 1970, broke away from this tradition by emphasizing that applications should search for data by content, rather than by links. The relational model uses sets of ledger-style tables, each used for a different type of entity. It was only in the mid-1980s that computer hardware became powerful enough to allow the widespread deployment of relational systems. However, in the early 1990s, relational systems dominated all large-scale data processing applications, and As of 2018 they still prevailed: IBM DB2, Oracle, MySQL, and Microsoft SQL Server is the most searched DBMS. The dominant database language, SQL standardized for relational models, has influenced database languages for other data models. The object database was developed in the 1980s to overcome the inconvenience of object relational impedance mismatch, which led to the coining of the term "post-relational" and also the development of hybrid object relationship database. (History, n.d.)

To be able to execute and deploy the most general database, we use Structured Query Language, short for SQL. SQL can be considered as a common language that any relational database system must meet. According to an online reference, in 1989, the first version of SQL Server 1.0 came out and is used for 16-bit operating systems and is developed to this day. Until the release of SQL Server version 6.5, it was widely accepted by the market. A breakthrough improvement for SQL Server 7.0 when Microsoft rewritten a completely new engine. Until SQL Server version 7.0 improved to 8.0, it mainly developed website design features. To this day, the latest version that is SQL Server 2016 with 64-bit processor support was released on June 1, 2016. (SQl Progress, n.d.)

Over the past few years, the use of MySQL has been indisputable because of its immense popularity and wide spread in information technology. The largest web applications like Facebook, Twitter, YouTube, Google, and Yahoo! all use MySQL for data storage purposes. Even when it was initially used only for a very limited time, it is now compatible with many critical computing platforms such as Linux, macOS, Microsoft Windows, and Ubuntu. Specifically in my project will use the MySQL client (PHPMyAdmin). It is open source and free.

Technical Web Application

❖ **Front-End**

➢ **HTML**

Almost all coders or developers client-side can not ignore the markup language that is HTML, short for Hypertext Markup Language. It is used to build the structure and content of the website.

➢ **CSS**

Similar to HTML, which plays an extremely important role in the Front-End, it is CSS. Understand simply like this, CSS is a style language for the website - Cascading Style Sheet language. The purpose of CSS is to be used to style and style elements written in markup language, such as HTML. It can control the formatting of multiple web pages at the same time to save the effort of web writers. It distinguishes the appearance of the web page from the main content of the page by controlling the layout, color, and font.

➢ **Framework**

✓ **Bootstrap**

In order to be able to meet the website's responsive standards, the use of Bootstrap is essential. Bootstrap is a framework that includes HTML, CSS and JavaScript templates for developing responsive standard websites.

❖ **Back-End**

➢ **Programming language**

✓ **PHP**

PHP (Hypertext Preprocessor) is a scripting language or type of code primary used to develop general purpose, open source, server-based applications. It is very suitable for server side communication and can be easily embedded into an HTML page.

✓ **jQuery**

jQuery is a Javascript built-in library to make it easier for programmers to build functions using Javascript. jQuery integrates many different modules from the effects module to the query selector module. jQuery is used up to 99% of the total websites in the world (except for websites using JS Framework).

➢ **Web Server**

✓ **Xampp**

As web server software under the GNU General Public License, XAMPP is distributed and developed by Apache Friends. This is a program to create a Web server (Web Server) with built-in Apache, PHP, MySQL, FTP Server, Mail Server and tools like phpMyAdmin.

➢ **Framework**

✓ **Laravel**

Laravel is a free and open source PHP framework, built to support the development of software, applications, according to the MVC architecture. Laravel was developed by Taylor Otwell with the first version released in June 2011.

Interaction With Dietary Supplements

According to online sources, there are examples of pharmacodynamic interactions that have been documented with dietary supplement ingredients. The antihypertensive effect of guanabenz acetate (a drug used for hypertension) is due to the activity of its central active α-2-adrenoceptor receptor (Grossman et al., 1993; Wenzel et al. , 2001). Consequently, concomitant consumption of yohimbine bark, which contains the α-2-adrenoreceptor antagonist, may decrease the hypotensive activity of guanabenz through its opposing pharmacodynamic effect. Another example is between the antispasmodic digitalis (Katzung, 2001) and the hawthorn leaf or flower; Data show that both hawthorn leaves and flowers may also have a positive contractile and electrophysiological effects on the heart (Schwinger et al., 2000). If digitalis and hawthorn leaves or flowers are combined, the additive reaction can be excessive and lead to serious side effects (Schwinger et al., 2000). Another side effect will be manifested by ginkgo biloba if its intentional antagonism to the platelet-activating factor occurs; If cyclooxygenase inhibitors, such as aspirin, are ingested, bleeding tends to increase (Braquet, 1987; Lenoir et al., 2002; Vale, 1998; Vogensen et al., 2003). (Interaction With Dietary Supplements, n.d.)

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