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# Web Engineering Project'21

E-Commerce

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## ABSTRACT

In today’s fast-changing business environment, Web applications have become extremely important to respond to client needs in most effective way and in short time .

In order to develop an e-commerce website , there are so many technologies that can be used .

Tech-Shop is our E-commerce website application , Tech-Shop is an Online shop for selling Laptops and Mobiles and Computer accessories .

An Online shop is a virtual store on the Internet where customers can browse the catalogue and

select products of interest to buy . The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order.

At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill shipping address and payment method (on delivery payment option is implemented only ). Customer is notified that order is completed by a Success Message on The screen.

Technologies and Languages used in this ecommerce project as :

Back-end languages and framework

The following are used in back-end development of this website:

* ASP.NET, programming language (such as C# and JavaScript ,)
* Model-View-Controller (MVC)
* CSHTML is also used (is extension of C# HTML file that is used at server side by Razor Markup engine to render the webpage files to user’s browser).
* Microsoft SQL Server that is a relational database management system developed by Microsoft

Front-end languages and framework :

The following are used in front-end development of this website:

* Bootstrap
* Scripting Languages as html ,
* styling language as Cascading Style Sheets (CSS)
* standard text-based format (JavaScript Object Notation (JSON) ) that is used for representing structured data based on JavaScript object syntax .

Integrated Development Environment (IDE)

The following code editors or IDEs were used in building the program for the project:

* Visual Studio 2019
* SQL Server Management Studio (SSMS)

## ***Overall description:***

**Web Pages details:**

For any user .

1. Home Page
2. Login Page
3. Register Page
4. ShopNow Page
5. AboutUs Page

For registered users

1. ShopItem Page
2. Cart Page
3. Checkout Page
4. Success Page

For Admin To add items

1. ItemAdd page
2. SaveRecord Page

All the website uses the MVC pattern where this pattern consists of three parts: Model, View, Controller.

Model: Handles data logic.

View: It displays the information from the model to the user.

Controller: It controls the data flow into a model object and updates the view whenever data changes.

In more details ,This pattern can help on separating the handling data and rendering a view to it.

Requests are passed to a Controller, which works with the Model using the MVC pattern for websites to perform actions and acquire data. The Controller decides which View to show, and the Model receives it. The View creates the final page using the Model’s data. This project implements this architecture to achieve rapid development of the application.

Diagram

Description automatically generated

Graphical user interface, text, chat or text message

Description automatically generatedDatabase relational schema :

A database contains organised data managed by a Database Management System (DBMS).Different tables like Customer, Item, Orders , order details are a part of this project’s database. These individual tables contain all information concerned to them, in the form of rows and columns. Data from the database is accessed in the project using back-end logic. Microsoft SQL Server was the database management system used in this project, SQL Server Management Studio (SSMS) was used to write queries to the database.

## ***Pages :***

1. **Home Page :**

Home page consists of Html tags of a slideshow of some images that are used to show the user what the website is about and

Some of products that are found on the website .

User can log or register into the store by clicking on login from the top navigation menu .

1. **Login Page / Register Page :**

Login page is where user is allowed to enter his email and password ,

Validation takes place at that point and checks the authorization of this user if he already registered before.

If user didn’t register before , validation message is shown on the screen that email address is not correct and password doesn’t match .

If user registered before and entered email and password correct , he would be allowed to log in and add to cart and check out his order.

Register Page page is where user is allowed to register with his email and password .

User enters his email and password (2 times to check validation ).

Validation also takes place at that point . If user enters a valid address containing special characters like ‘@’ and ‘.’ he is allowed to register with it.

Text

Description automatically generatedOnce logged in or registered, the top level menu will change login and register to logout and cart .

1. **ShopNow Page :**

Shopping page shows all products exits in the database .

And also allows logged in users to add their products to cart .

1. **ShopItem Page :**

This page shows the full item page containing item price and description and cost and picture in greater size than thumbnail .

1. **Cart Page:**

The Cart module shows the list of products added to the cart by the Registered user. Registered Users can add any number of products to cart and can see the individual product name and its price.

Registered users can view their cart .

This page gets items that the user added to his cart from shopNow page or homepage .

1. **Checkout Page :**

This page allows user to enter his shipping address .

Based on what country user select , a drop down list of states is created that lies in the selected country , this is done using json objects and java script functions.

1. **Success Page :**

When user finishes entering all data in checkout page and press done , a success page is displayed to the user to inform him that the order is completed successively .

1. **ItemAdd page :**

Admins Can add items using ItemAdd page .

Item details and price is inserted by Controller into database .

For each added item , Controller creates a globally unique identifier for that item and after that , controller inserts it in the database entities .

1. **SavedRecord Page :**

If Admin entered all fields correct that match with the datatypes assigned to them in database , saved record page is display to him by the help of controller action .To inform him that item is added .