Development of Online Shopping System using ASP.NET Technology and Microsoft SQL

Abstract: Firstly a customer have to made an user id then one have to sign in the home page using the personal user id and password. Then the options will come in a page for the selection of materials and there cost. Then one has to order the required material as well as to give the appropriate postal address and the personal details. Then the confirmation of the order will be made and a cash memo will generate having unique id number. Now the bill details can be generated and previous records can also be checked out. The up gradation, deelation can also be done.

Keywords: Framework Class Library; Common Language Runtime; CSS; JavaScript; .NET Framework; DateTimeOffset.

I. INTRODUCTION

With the development of science and technology, the information system has become necessary in our daily life. According to the speed of user response, QOS and the performance of database system we determine the vitality of the information system. With the going of time, the performance of SQL server database system degrades, and its response time increases. Optimization of the database system plays a very important role, and it runs through the entire life cycle of the database system.

SQL is mainly used to communicate with the database. SQL statements are mainly used to perform the tasks such as update the data on a database, or to retrieve the data from a database etc [1, 2].

Advantages of SQL:-

- SQL is used to execute queries against the database.
- SQL can be used to retrieve data from the database.
- SQL is used to insert the records into the database.
- SQL can be used to update the records in the database.

DOT NET Framework: - The .NET Framework which is pronounced as DOT NET is a partially open source freeware software for framework developed by Microsoft that is primarily runs on Microsoft Windows. .NET Framework includes a large class library which is known as the Framework Class Library (FCL) and across the several programming languages it provides language interoperability. Programs which written for the .NET Framework execute in a software environment, which is known as the Common Language Runtime (CLR) [3], which is basically an application virtual machine that provides the services such as the security system, management of memory, and handling the exception.

ASP DOT NET: - ASP stands for Active Server Pages which is a Technology of Microsoft. Basically for the Web service applications, Microsoft provides a newest version of ASP support called ASP.NET. ASP is a program that runs inside IIS where the IIS stands for Internet Information Services which is a free component with Windows 2000. It is also a part of the Windows NT 4.0 Option Pack where the Windows NT 4.0 Option Pack can be easily downloaded from the Microsoft. The Option Pack PWS is a smaller but fully the functional version of IIS.
II. RDBMS

RDBMS stands for the Relational Database Management System which is the basis of SQL, and all the modern database systems such as the MS SQL Server, IBM DB2, Oracle, MySQL and the Microsoft Access etc [5, 6].

Database Tables: - Mostly a database contains one or more than one tables and each table is uniquely identified by a name (such as the "Customers" or "Orders" etc.). Each table contains the records (rows) with the datas.

An example of the database system is given below:

<table>
<thead>
<tr>
<th>CustomerID</th>
<th>CustomerName</th>
<th>ContactName</th>
<th>Address</th>
<th>City</th>
<th>PostalCode</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abhishake</td>
<td>Abhishake</td>
<td>A.J.c.bose road street- 40</td>
<td>Kolkata</td>
<td>700020</td>
<td>India</td>
</tr>
<tr>
<td>2</td>
<td>Bibek Nandi</td>
<td>Bibek</td>
<td>Behala street-34</td>
<td>Kolkata</td>
<td>700034</td>
<td>India</td>
</tr>
<tr>
<td>3</td>
<td>Antonio Moreno</td>
<td>Antonio Moreno</td>
<td>Mataderos 2312</td>
<td>México D.F.</td>
<td>05023</td>
<td>Mexico</td>
</tr>
<tr>
<td>4</td>
<td>Around the Horn</td>
<td>Thomas Hardy</td>
<td>120 Hanover Sq.</td>
<td>London</td>
<td>WA1 1DP</td>
<td>UK</td>
</tr>
<tr>
<td>5</td>
<td>Berglunds snabbköp</td>
<td>Christina Berglund</td>
<td>Berguvsvagen-8</td>
<td>Lulea</td>
<td>S-958 22</td>
<td>Sweden</td>
</tr>
</tbody>
</table>

SQL Statement: - Most of the actions which we need to perform on the database are done with the help of the SQL statements. The following SQL command is use to see all the records in the table "Customers": - SELECT * FROM Customers.

In our project 1-st a database then a table is created in the following manner.

Then another table on the same database is created in the following manner.
Figure 2: Block diagram of customer order details account table for online shopping

III. HTML

Hyper Text Markup Language (HTML) is the standard markup language which is use to create the web pages [4]. The HTML was mainly developed by the physicist Tim Berners-Lee at CERN in the year 1980 [4]. Along with the CSS and JavaScript HTML is a cornerstone technology and most of the websites used this technology to create the visually engaging WebPages, user interfaces which is use for the web applications and the user interfaces which is use for the mobile applications. Web browsers can read the HTML files and render them into the visible or audible web pages.

IV. ASP.NET

ASP.NET is the open-source server-side web application framework which is design for the web development to produce dynamic web pages [8]. It was developed by the Microsoft for allowing the programmers to build the dynamic web sites, web applications and the web services. ASP.NET is very much user friendly for the user to design any webpage. It provides the capability for editing, updating and managing the SQL Server database [7]. It was first released in January 2002 which is the version 1.0 of the .NET Framework.

Features of ASP:-

- ASP dynamically edits, changes, or adds any content of any Web page.
- It responds to the user queries or data submitted from the HTML forms.
- ASP can access any data or databases and finally return the results to the browser.
- ASP is very much useful to customize a Web page to make the Web page more useful for individual users.

Characteristics of ASP.NET: - ASP.NET Web pages are officially known as the Web Forms which are basically the main building blocks for the development of application in ASP.NET. There are two basic methodologies for the Web Forms the first one is the web application format and second one is the web site format. The web applications are need to be compiled before
the deployment, while the web sites structures allow the user to copy the files directly to the server without the prior compilation.

**Session:** - ASP.NET session state helps us for storing and retrieving the values for the user as the user navigates the ASP.NET pages in the Web application. HTTP is the stateless protocol, which means that a Web server treats every HTTP request for the page as an independent request. Basically for all the ASP.NET applications ASP.NET session state is enabled.

The Session state includes:

- Application state which is use to storing the variables that can be easily accessed by all the users of the ASP.NET application.
- Profile properties that persists the user values in the data store without expiring them.
- View state which is use to persist the values in the page.

**Custom Date and Time Format String:** - The date and time format string express the text representation of the `DateTime` or `DateTimeOffset` value that is the results from the formatting operation. It can also represent the date and time value which is required in the parsing operation for converting the string to the date and time. The custom format string is consists of one or more custom date and time format specifiers. The string which is not a standard date and time format string is interpreted as the custom date and time format string. In the case of date and time the `NOW` property plays an important role to return the `DateTime` value which represents the current date and time on local computer. There is a difference between the `DateTime` value which represents the number of ticks which have been elapsed since midnight of December 25, 0000 and the string representation of the `DateTime` value, which expresses the date and time value in the culture-specific format.

![Figure 3: Creating an ASP.NET Web file in Visual Studio 2012](image-url)

**V. LITERATURE REVIEW**
SQL statements are mainly used to perform the tasks such as update the data on a database, or to retrieve the data from a database etc [1, 2]. Programs which written for the .NET Framework execute in a software environment, which is known as the Common Language Runtime (CLR) [3], which is basically an application virtual machine that provides the services such as the security system, management of memory, and handling the exception. RDBMS stands for the Relational Database Management System which is the basis of SQL, and all the modern database systems such as the MS SQL Server, IBM DB2, Oracle, MySQL and the Microsoft Access etc [5, 6]. Hyper Text Markup Language (HTML) is the standard markup language which is use to create the web pages [4]. The HTML was mainly developed by the physicist Tim Berners-Lee at CERN in the year 1980 [4]. ASP.NET is the open-source server-side web application framework which is design for the web development to produce dynamic web pages [8]. It provides the capability for editing, updating and managing the SQL Server database [7].

VI. Procedure and Operation

1. At first we go to the Create Account Page from the Home Page to create an account for buying any product by simply clicking on the Sign In and Create Account Button as shown in the figure 4.

2. Then in the Create Account Page we create a new Account to buy any product as shown in the figure 5 and if the account is already exist then it shows a message that the account is already exist.

3. Then we go to the Login Page for login with the account where we have to provide the Login Id and the Password then click on the Sign In button as shown in the figure 6.

4. After that we go to the Home Page to select the products which we want to buy as shown in the figure 7. Then we select any product category to buy the product.

5. Suppose we go to the page of Mobile for buying any mobile as shown in the figure 8. Then we select any product and clicking on the button Buy It to buy it. In this page the specification of the product is provided which is helpful for buying any product.

6. Then we go to the Order Details Page for providing the necessary information such as the Phone No., Email Id, State and Address etc. as shown in the figure 9 and after proving all the information we have to click on the Order It button. Then we go to the Confirm the Order Page. In this page if we want to cancel the order then we has to click on the cancel the order button and if we press on the confirmed the order button then the order is placed. When we placed any order then automatically the Bill System Page is generated of that particular product which we order as shown in the figure 10. If we want to cancel any order then we have to call on the Phone No. or mail on the Email Id provided on the Home Page as shown in figure 4.

8. Here we can also view any order by the Order Id or we can also view all the orders what we order in this website as shown in figure 11. In the View Order by Order Id Page we can view any order by the help of Order Id of the product (shown in figure 12). In the View All Order Page we can view the entire products we order here by clicking on the View All Order button as shown in figure 13.

9. In this webpage we can also manage our account (like create, update and delete) in the Manage Account Page as shown in figure 14. In this page we have three options. First one is Updating Account, second one is View Account and the third one is Remove Account. In Update Account Page we can easily update our Account like the First Name, Last Name, Password, Phone No., Email Id, Favorite No., State and Address etc (shown in figure 15). In the View Account Page we can easily view our account by simply pressing the View Account button as shown in the figure 16. We can also remove our account permanently by pressing on the Remove Account button in the Remove Account Page as we see in the figure 17.

10. In this webpage we can easily sign out to the account by pressing on the button Sign Out as we see in the figure 18.

11. In this webpage we have also the facility of overcoming the problem of forgetting the password. If we forget the password of our account then we have to first go to the Forget Password Page and then we have to type the Favorite No. as we
mentioned previously when we create the account and then we have to type a **New Password** for that particular account and confirmed that **Password**. After that we have to press on the **Change the Password** then automatically a new password is generated for the account as we see in the figure 19.
Figure 11: View Order Page
Figure 12: View Order by Order Id
Figure 13: View All Order Page
Figure 14: Manage Account Page
Figure 15: Update Account Page
Figure 16: View Account Page
Figure 17: Remove Account Page
Figure 18: Home Page after clicking on the Sign Out button
Figure 19: Forget Password Page
VII. PROCESS DIAGRAM

VIII. CONCLUSION

In this article a robust online shopping system have been developed to make a online shopping easier using ASP.NET Technology and Microsoft SQL. Using this technology one can purchase lots of thing from market without any physical presence. This system can also be modified and make it more and more user friendly by certain modification of the ASP.NET code in future.

References

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