STUDENT ATTENDANCE ONLINE SYSTEM USING BAR CODE READER

NURUL LIYANA BINTI MAHMOD

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Faculty of Computer System & Software Engineering
University College of Engineering & Technology Malaysia

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ABSTRACT

With the Information Technology eras that are really advances nowadays, there a lot of technologies are being used in this century. Several of software created in order to make the data's that saved and access in manual before to the computerize information. The computerize data is more secure because it can protect by password. . Thus, one system is developed to solve the problem. The purpose is same as punch card that being used nowadays. The system is used to help the lecturers or staffs on making the student attendance. This system is connected to card reader that are used to save all the student attendance information. The student must bring their Matric Card to the class and scratch it in card reader on making attendance. The Student Attendance System is located in one server which is it can be accessed anytime they like and all the information's are being updated. The lecturer also can print hardcopy by clicking the button that is in the database. Besides, by using this system it can reduce time and can minimize student cheating where by using manually other students also can sign for their friends that is absent that day. The system that will produce is user – friendly and all the instructions using clearly language and easy to understand.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Student Attendance Online System using bar code reader is one way where the lecturer does not need to use the attendance form to make sure that the students are present that day. The purpose for the system is same as punch card that being used nowadays. This system provides with bar code reader which located in front of the class and each student should insert their Matric Card that already has a bar code by their own. Bar code reader acts as scanner whereby the function is to scan then compares the StudentID with the database and if the students are present that day, so that the attendance will search and save into the database. After the student have been inserted their matric card, all the field related such as StudentName, CodeSubject, Subject, Time, LecturerName, ClassSection, and Location are entered to the database directly. Thus, the lecturer can detect all the late comers and absent student that will be view on the system.

After the class has been finished, the lecturer can view the student attendance system that has been saved in the faculty server. This online attendance system can be accessed by the administrator and staff. The system is fully controlled by administrator about the staffs profile, student information and student attendance. The administrator can add new student, add new staff, view staff and student profile and view the student the student attendance report.

The data of the students and staffs in the system can be added, edited and deleted. The student attendance system is protected by password, so that the administrator and the staff should key in their username and password to login the system. For the new administrator and staff, they need to register first before they want to enter the student attendance system. Also they can change their old password to a new one. The staff can view staff profile, search staff attendance report. The data of the students and staffs in the system can be added, edited and deleted.

The student attendance system is protected by password, so that the administrator and the staff should key in their username and password to login the system. For the new administrator and staff, they need to register first before they want to enter the student attendance system. Also they can change their old password to a new one. The staff can view staff profile, search staff profile, search student attendance, and view the student attendance report. The staff cannot edited the student profile because the system is an authorized system whereby only the administrator can be deleted or edited the student and staff profile.

This system also provide the complete report whereby the administrator and the staff can print a hardcopy of the student profile and student attendance, so they just click at the button 'print report' then the report which exactly in the database will be printed.

For the attendance system that is connected through the bar code reader is used on making attendance for the students that attending the class. The student must use their Matric Card that already provides a bar code to scan in the bar code reader on making attendance on that day. The time generated when the student scan their Matric Card so that the time will search in the timetable database and it compare if it validated or not. If the time scanned is in the area of the timetable, then all the fields of the student related will be entered on the attendance database.

This card reader is more secure than the manual form. As we can see nowadays mostly attendance systems are using manually which it is keep in a form and the students need to sign at the form of paper to prove that they are come that

day. The manual system is not effective because the other student also can sign for their friends that are absent. Cheating will happen and then it will effect the student reputations.

These systems use a Graphical User Interface (GUI) where the tools provides are very users-friendly. The buttons used an easy command for the user and the dialog box will appear if the administrator key in the wrong password and edited the profile.

1.2 Problem Statement

1.2.1 Current System

As we can see now, all the attendances are keep in form of paper that the student must sign it manually. This is not a systematic method where the form can be lost and may be damaged. The lecturer also must put the form in any files or folders that it needs some spaces to put in rack or cabinet.

1.2.2 Student Online Attendance System using bar code reader

The manual system does not provide a security because other student also can sign the attendance form. Sometimes the lecturer forgot to make the student attendance. Thus, an absent student can cheat the lecturer by not attending the class.

As we know in University College of Engineering & Technology Malaysia, the student attendance is hundred percent. Thus, the Student Attendance Online System using bar code reader is the best solutions on how we can keep the data more efficient and safety. The data is always being updated in the database and the report can be viewed and be printed by the administrator and staff whenever they want.

1.3 Objective

The objectives of this Student Online Attendance System using bar code reader are:

i. To develop a system for Student Attendance using bar code reader for University College of Engineering & Technology Malaysia, Pahang.

ii. To minimize the student cheating by asking their friends to sign the attendance form.

iii. Can reduce time and the database report can be viewed and be printed immediately by the lecturer. Thus, the system is more efficient.

1.4 Scope

i. This system is developed for the staff that working in IPTA focusing on University College of Engineering & Technology Malaysia, Pahang (KUKTEM) in Faculty of Computer System and Software Engineering (FSKKP).

ii. This student attendance system used a Matric Card that already provides a bar code. on making attendance.

iii. The bar code is generated by the bar code 128 software that can download it from the Internet sources.

iv. The student must scan Matric Card as soon as they entered the class or before starting the lecture.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Literature review provides all the basically aspect with theory or that related with documentation for the project that being developed. The important thing to know in this chapter is how to use the system effectively. Besides, the software and hardware approach must be cleared in developing database and also for the whole project.

2.2 How to Use This System

This Attendance Online System using bar code reader is one way where the lecturers and students need to use Matric Card in order to make an attendance. The purpose for the system is same as punch card that being used nowadays. All the users that want to use this system must bring their Matric Card to the class and scan their card into bar code reader on making sure that they are come that day. This bar code reader provides to all the class that located in front of the class.

After the class has been finished, the lecturer can view the student attendance from the attendance database. All the data collection has been saved in the attendance database. This student attendance system is located in one server for each faculty.

It means that one faculty has just one server which includes the student attendance system and the database. The database that is being developed is controlled by administrator whereby they have their own password to enter this
It means that one faculty has just one server which includes the student attendance system and the database. The database that is being developed is controlled by administrator whereby they have their own password to enter this system. The administrator can edit, view, add, save and delete the student and staff profile. This system is fully controlled by admin and the staffs cannot be accessed some interface. The staffs have only can view student profile and check by date, day, section and subject that the student took for the semester.

Besides, this system also provide the complete report whereby the lecturers can print a hardcopy of the student profile, so they just click at the button 'print report' then the report which exactly in the database will be printed. This system that uses bar code is more secure than the manual form. As we can see nowadays mostly attendance systems are using manually which it is keep in a form and the students need to sign at the form of paper to prove that they are came that day. This system is not effective because the other student also can sign for their friends that are absent. Cheating will happen and then it will effect the student reputations.

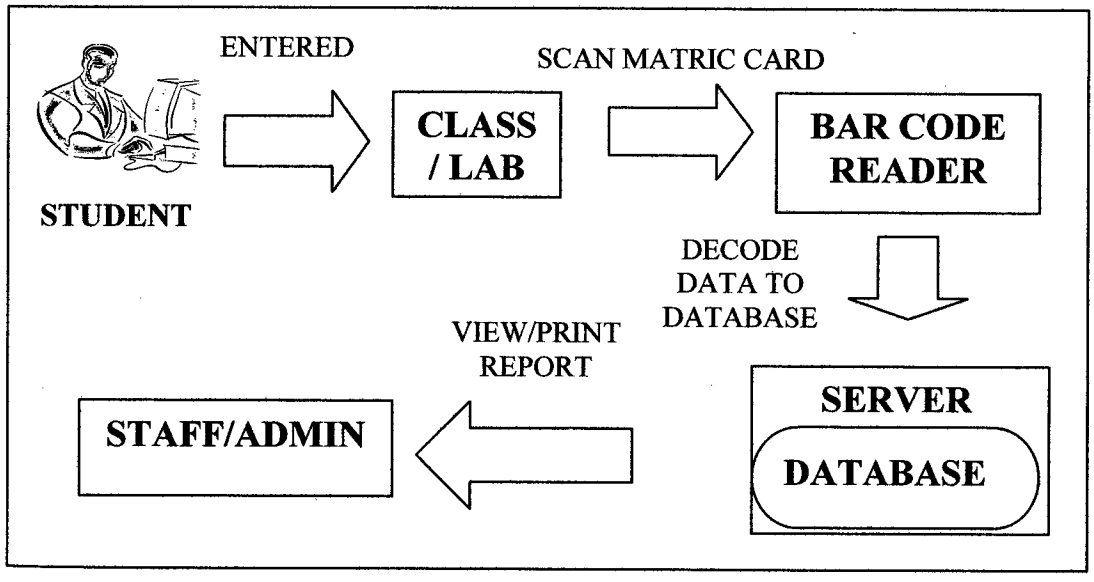

Figure 2.1 The Flow on How Student Attendance Online System using Bar Code Reader

2.3 Software Approach

2.3.1 Microsoft.NET

i It is a platform neutral framework.

ii It is a layer between the operating system and the programming language.

iii It supports many programming languages, including VB.NET, ASP.NET, C# etc.

iv .NET is not an operating system .NET is not a programming language.

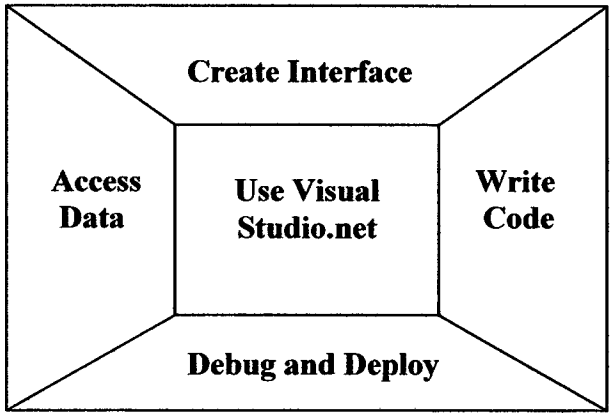

Figure 2.2 Overview of Using Visual Studio.NET

.NET provides a common set of class libraries, which can be accessed from any .net based programming language. There will not be separate set of classes and libraries for each language. If you know any one .net language, you can write code in any .NET language.

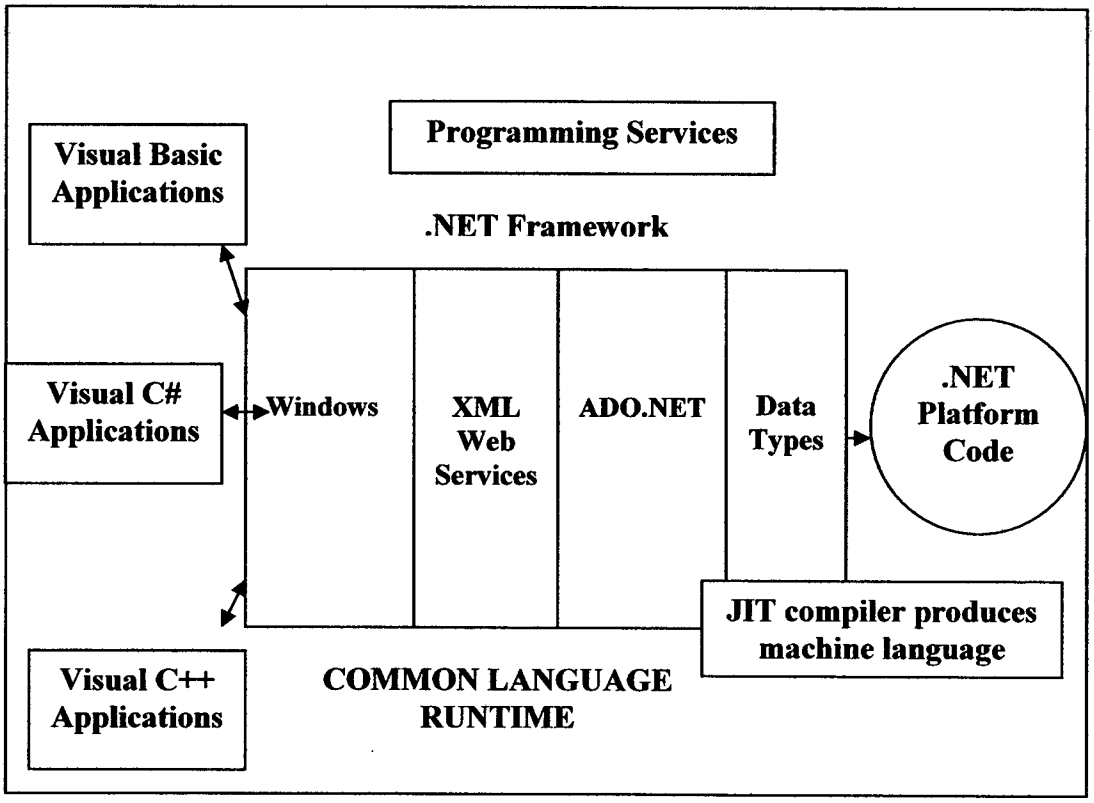

Figure 2.3 How the .NET Framework Works

In future versions of Windows, .NET will be freely distributed as part of operating system and users will never have. In future versions of Windows, .NET will be freely distributed as part of operating system and users will never have to install .NET separately.

2.3.2 What is Visual Studio.Net ?

Many people always get confused with Visual Studio .NET (VS.NET) and .NET technology. VS.NET is just an editor, provided by MicroSoft to help developers write .NET programs easily. VS.NET editor automatically generates lot of code, allows a developer to drag and drop controls to a form, provide short cuts to compile and build the application etc. VS.NET is not a required thing to do .NET programming. We can simply use a notepad or any other simple editor to write the .NET code. And you can compile your .NET programs from the command prompt. Microsoft would have introduced some other new technology and .NET would be outdated.

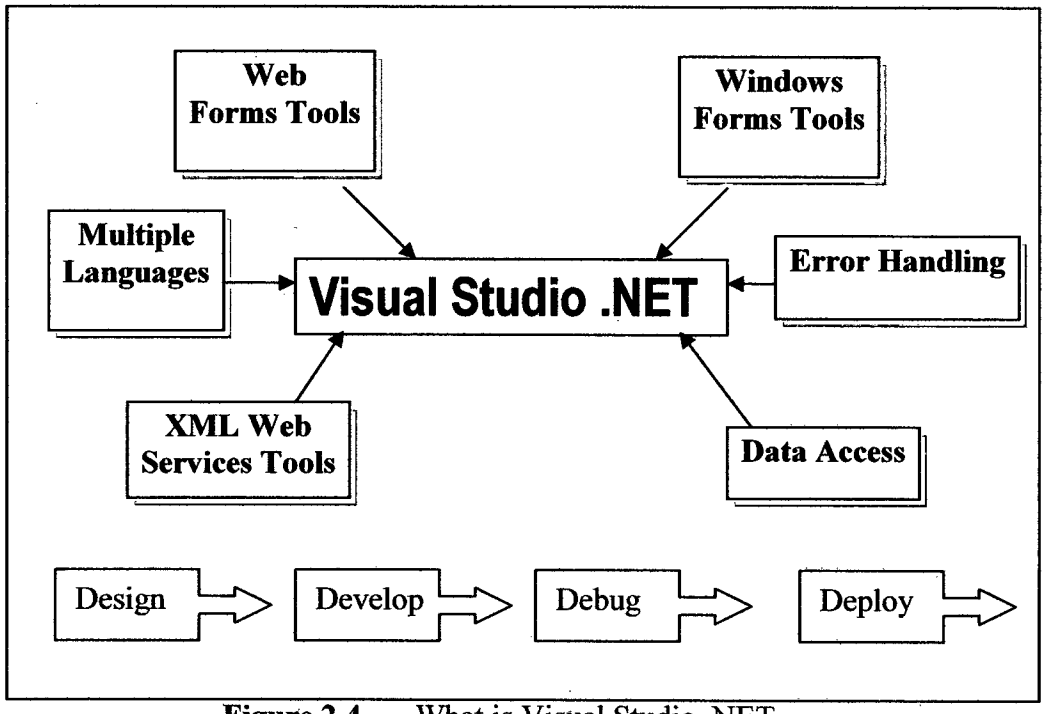

Figure 2.4 What is Visual Studio .NET

2.3.3 .NET supported languages

Currently .NET supports the following languages:

i. C#
ii. ASP.NET
iii. C++
iv. J#

The above languages are from MicroSoft. Many third parties are writing compilers for other languages with .NET support.

2.3.4 Difference between VB and VB.NET

There is not much in common between VB and VB.NET other than the name. VB.NET is a totally new programming language. It just retains the syntax of

old VB. So, if you are a VB programmer, probably you may like VB.NET than C# just because of the syntax.

In addition to this, VB.NET still supports many of the old VB functions just for backward compatibility. But if you are a serious .NET programmer, we strongly suggest never use old VB functions in VB.NET. So, switching from VB to VB.NET is just like learning a new programming language, with very small similarities between them.

2.3.5 ASP.NET

ASP.NET presents a whole new approach to developing dynamic for the Internet or your intranet. With ASP, the process was very linear. A page was requested, and your ASP code returned HTML tags either directly or indirectly through the Response object.

Development Tool and Environment there are three important technologies will be used in this project. The first one is ASP.NET, second tool is Microsoft Visual Studio 2003. ASP.NET needs. NET Framework SDK to run and fortunately this is preinstalled in VStudio.NET 2003. Next step required author to install Internet Information Server (IIS) in the laptop. Bear in mind IIS just exist in Window XP Professional version not Home edition. VStudio.NET 2003 is very powerful mechanisms for speedily developing application interfaces.

With ASP.NET, the approach is much more object driven. The process is more like developing a standard Windows – based application instead of a Web page. With ASP.NET, you place controls such as Label controls and Textbox controls on your page. You then assign values to the properties of these controls, which allow you to affect how the controls are rendered in the visitor's browser.

i. Open Web application project

Below is the environment of ASP.NET that used to develop Student Attendance Online system. The arrow shows a listing of existing project that have been created for student attendance system.

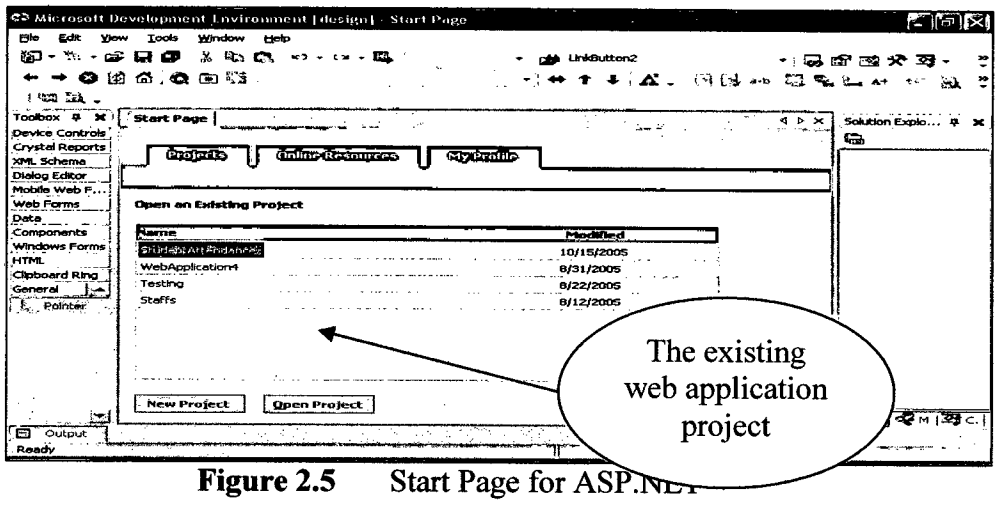

Figure 2.5 Start Page for ASP.NET

ii. Create a New Project

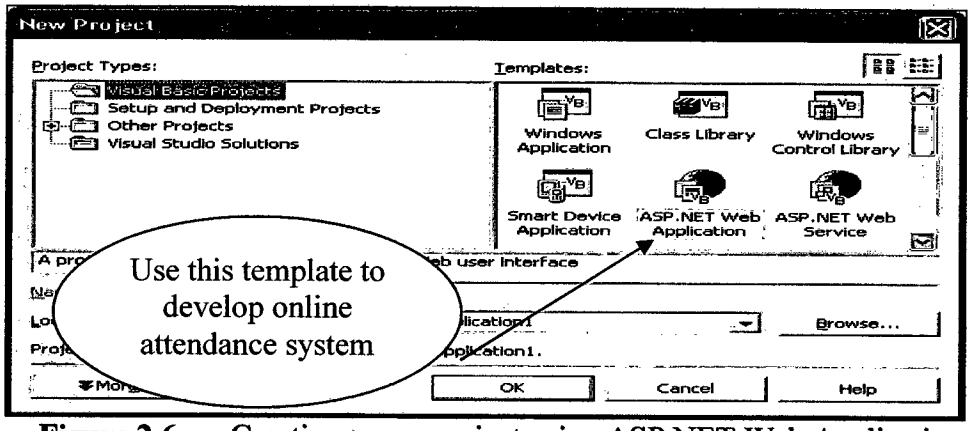

Figure 2.6 Creating a new project using ASP.NET Web Application

iii. Development Environment

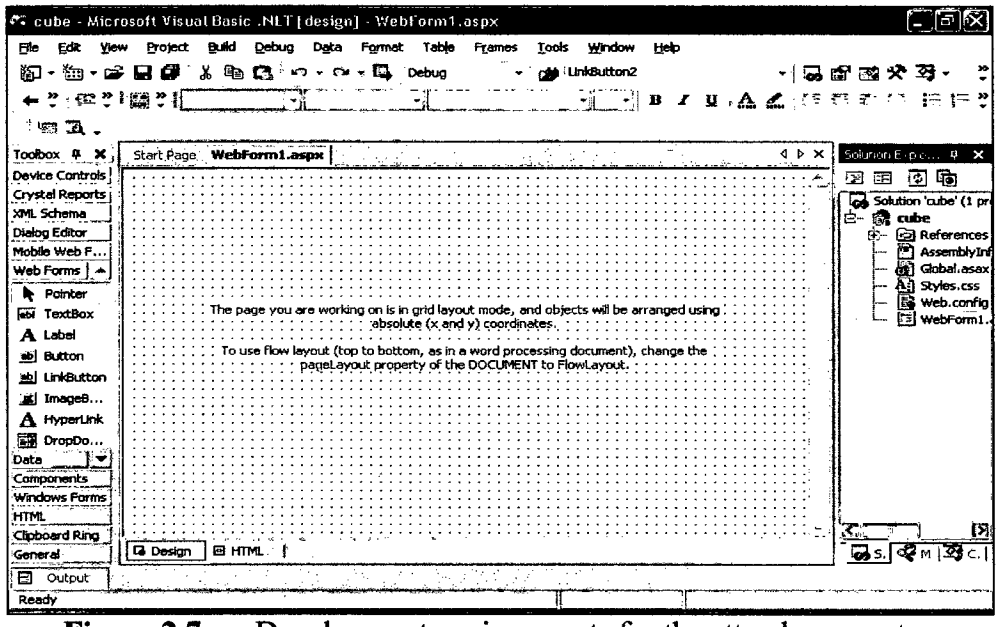

Figure 2.7 Development environments for the attendance system

iv. Solution Explorer

Solution Explorer is to manage project files and resources, including adding, removing, opening, renaming and moving files, as well as setting a start-up page or project, switching between code and design view for a file, and viewing status information.

Figure 2.8 Solution Explorer

v. Properties

The properties window provides access to the properties of the object currently selected in the IDE. The Properties window allows you to collapse or expand categories of properties to better view the categories you're interested in. We can also view the properties in alphabetical order by clicking the Alphabetic (AZ) button, as shown in the following illustration.

Figure 2.9 Alphabetic button

vi. Toolbox

The toolbox provides access to a wide variety of controls, components and HTML elements. The toolbox items (essentially, the HTML tags or text elements used to implement controls or components) to Web Forms or components by either double clicking the item name in the Toolbox (in which case the item is inserted at the place the item where desired).

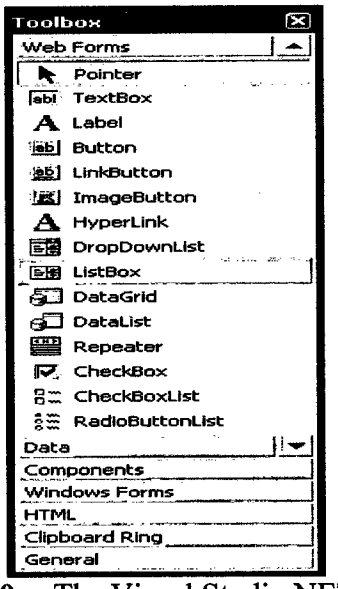

Figure 2.10 The Visual Studio.NET Toolbox

vii. Class View

The Class View window, which default shares a window with a Solution Explorer, contains a listing of all classes in the project and the methods, properties and interfaces implemented in those classes

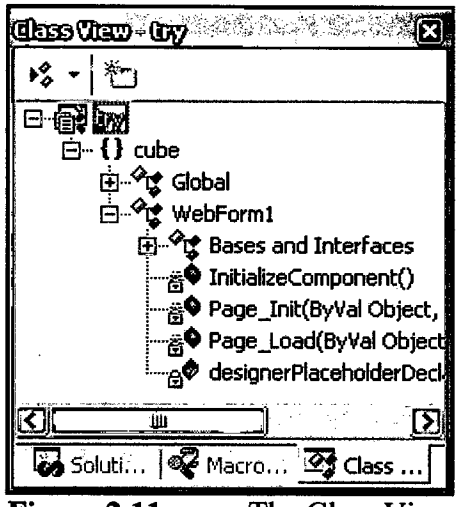

Figure 2.11 The Class View

viii. Output

The purpose of the Output window is to display messages related to project builds. The following illustration shows the output of a build of a sample project. In this case the build was successful, with no error or warnings.

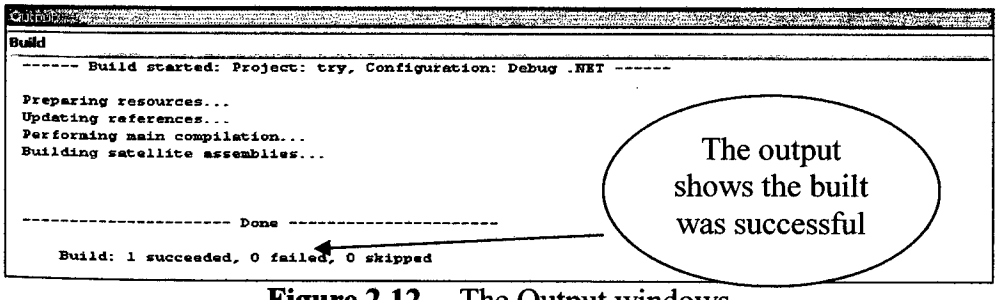

Figure 2.12 The Output windows

ix. Switch View for HTML

When click at HTML button, the HTML code for the page will be displayed, as shown in the Figure 2.14 below.

Figure 2.13 The HTML button

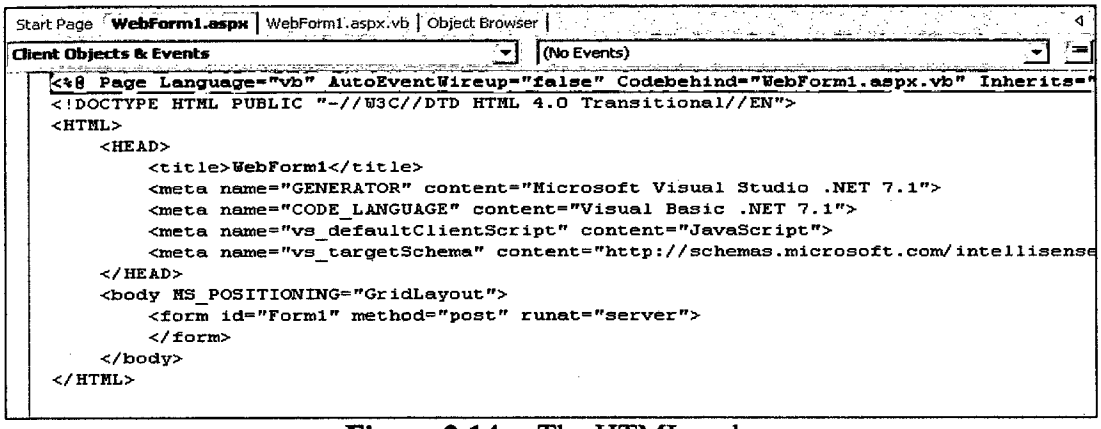

Figure 2.14 The HTML code

x. Toolbars

a) Standard – The Standard toolbar, shown in the following illustration, contains buttons for common file and project commands, including opening files and projects, creating new files and projects, and accessing various windows in the IDE.

Figure 2.15 The Standard Toolbar

b) Formatting – The formatting toolbar, shown in the following illustration, contains buttons related to the formatting of text, including font and font size, text alignment options and background colors. This toolbar is enabled only when entering or editing text in Design View.