

Laboratory Manual

For

Web Technology

B.Tech (IT)

SEM VII



July 2016

Faculty of Technology
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LIST OF EXPERIMENTS

1. Create an application in which you are required to get the user profile information with help of standard asp.net server controls.
2. Extend the User profile Application which allow user to select the Material Status and Hobbies.
3. Implement the calculator with the help of the Command argument and command name properties of the button control.
4. Create Run time Table Control as per user requirement and display it on the page.
5. Create An Application which has Image, Image map and Image Button.
6. Extend the user Profile Application in which user is Allowed to select the Date of Birth from the Calendar Control.
7. Extend the User Profile Application where User must have to Pass All the validation.
8. i) Create A master page and content Page Application for the University which enables user to see the faculty list according to department.
ii) Create an application in which user is allowed to upload the file on the server.
9. Create an application in which user has to display records in the Grid View Control from Table created in access data base. (With the Help Of Oledb Classes or AccessDataSource Control).
10. Create the Sign In, Sign Up and Update Application
11. Create Application in which user is able to Submit his Profile with help of the Wizard and Multi View Control.
12. i) Use the Asp Navigation control that allows user to navigation and selection facility the pages of Web site.
ii) Create an application which display the advertisement through Ad rotator Server Contrl.
13. i) Create cache application in which, there should be implementation of File-based dependency, key-based dependency, Time-based dependency .
ii) Create application which uses Standard Login Control to The Web Application.
14. i) Create the Application which gets the user profile from the user with the help of the user control.
ii) Create An application which allows user to have Chat on two different pages.
15. i) Create A simple windows Application .
ii) Deploy a web site on Local IIS server.

LABWORK BEYOND CURRICULA

1. Create WCF application where user registration is done using the WCF Service.
2. Create the MVC Web Application which is Access the WCF service that is created in Exp 1.

Sample experiment

1 AIM: Student Registration and Display Facility Experiment with Three-Tier Architecture.

2 TOOLS/APPARATUS: Microsoft Visual Studio 2005/2008/2010
Frame Work 2.0/3.5
Data Base Server: MS Access
SQL Server 2005/2008

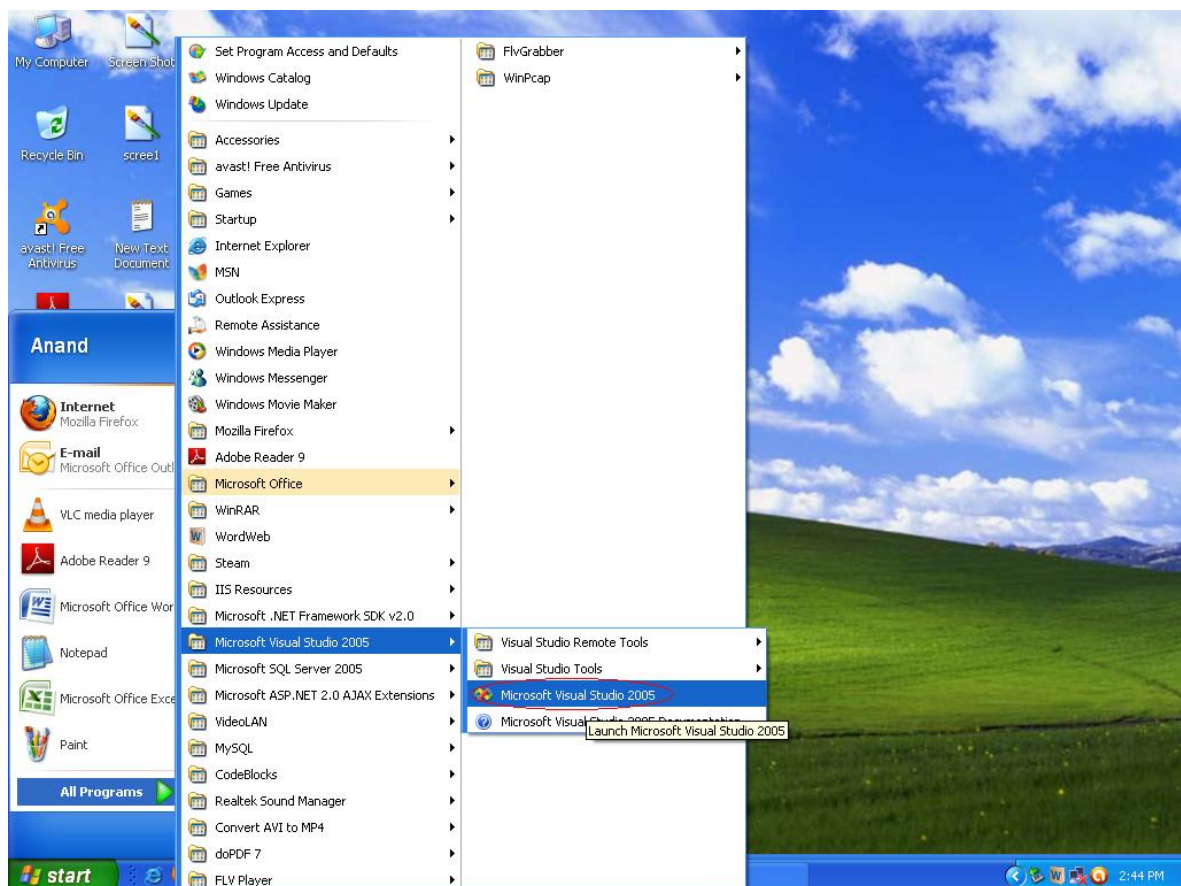
3 STANDARD PROCEDURES: COMMON PROCEDURE:

Step 1: **Design Process:**

- Design Web Form According the Application with the Help of the Standard ASP.net server Controls.
- Create the database Design While Working with data base.

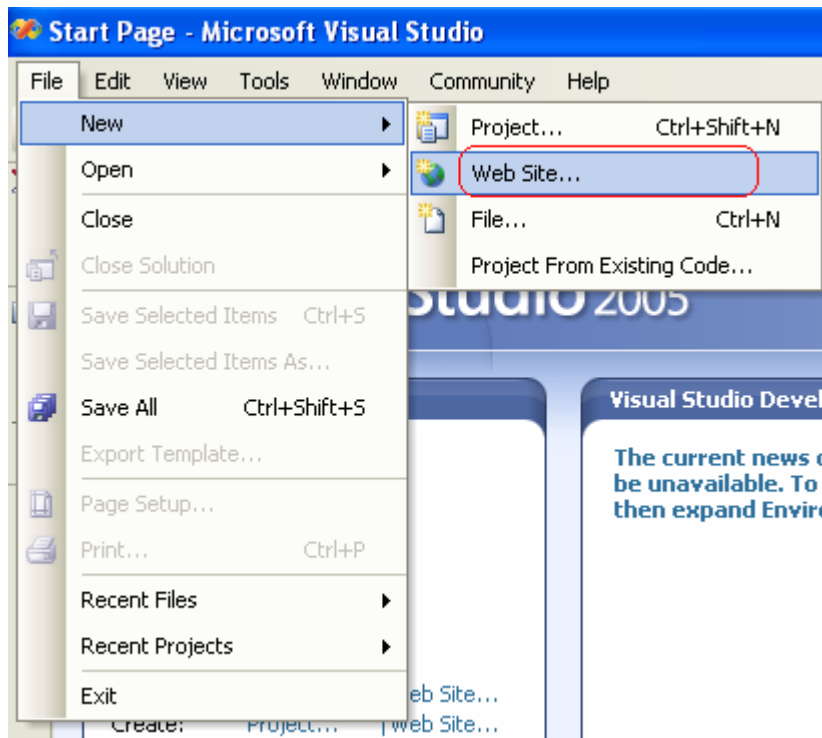
Screen Shots for Creating New Website

- Go to Start -> All Programs -> Microsoft Visual Studio 2005 -> Microsoft Visual Studio 2005

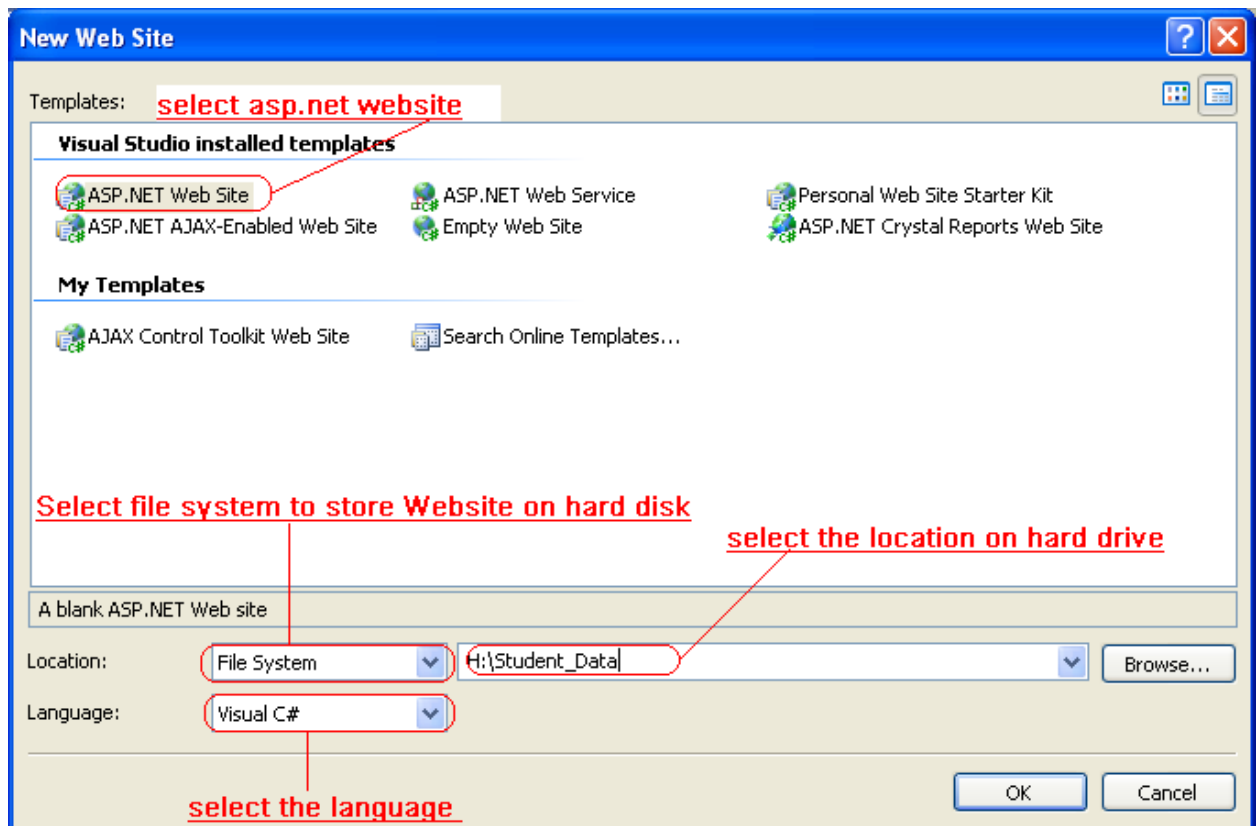


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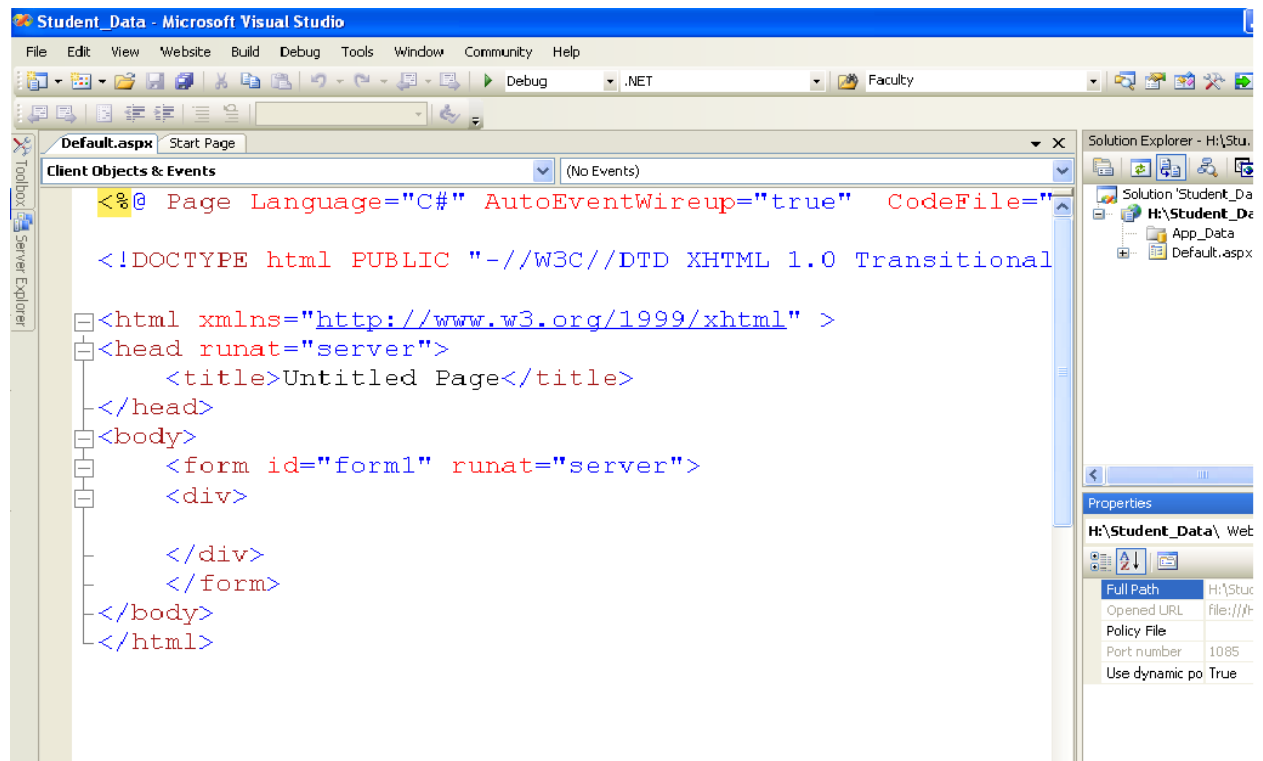
- An Editor will be open Click On File -> New -> Website



- A Dialog Box Will Open, Select ASP.NET Web Site, Choose Language and Also File System Then Enter the Path where you want to store this website On your Hard Drive.

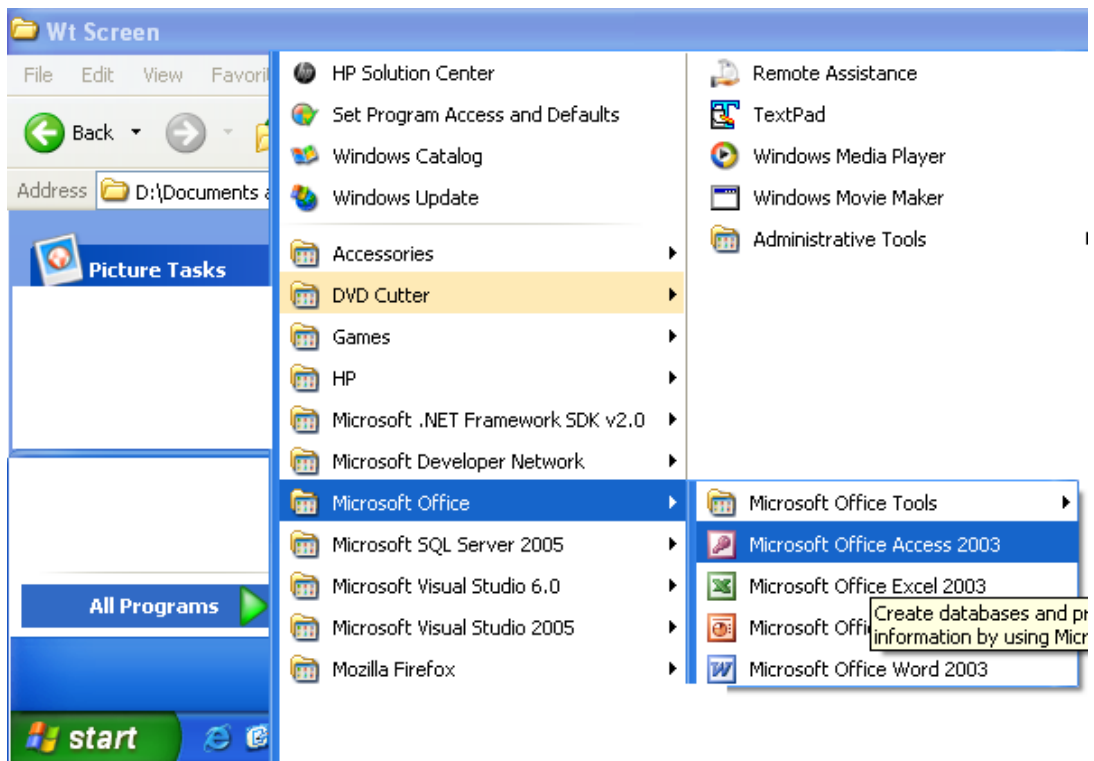


- Finally you will see the Default Page Of the Web site that You have Created.

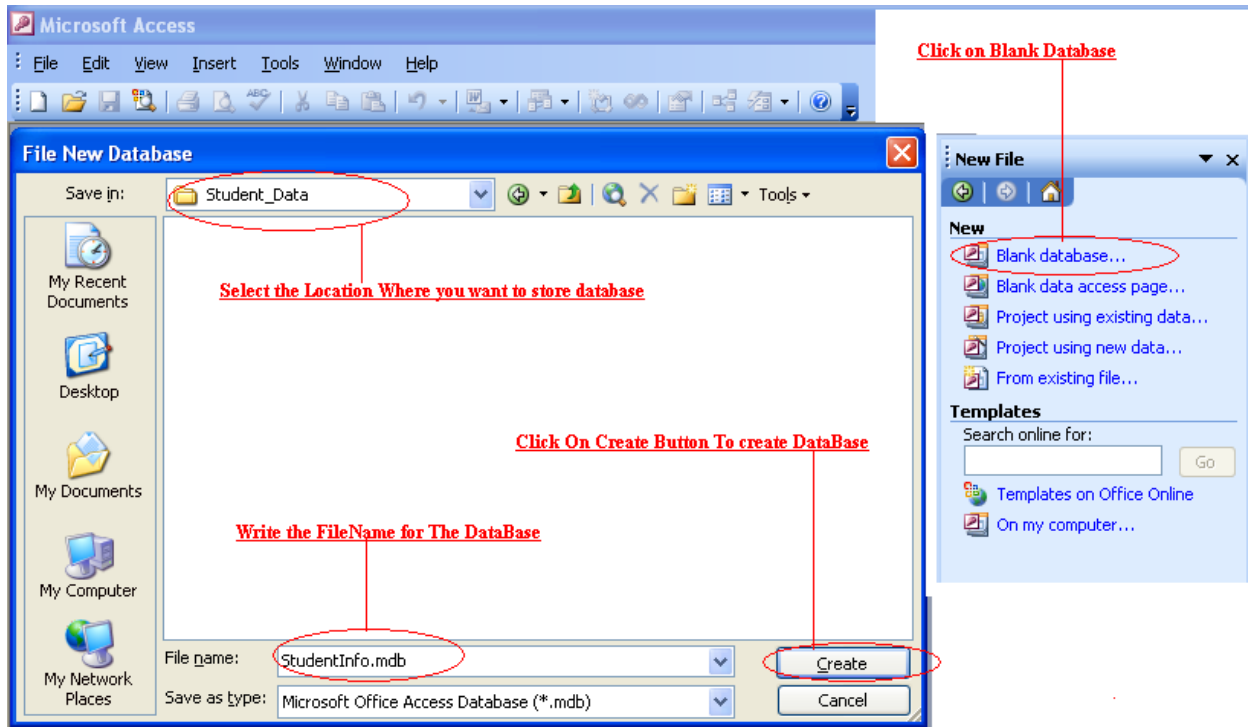


Screen Shots for Creating the Database in Access

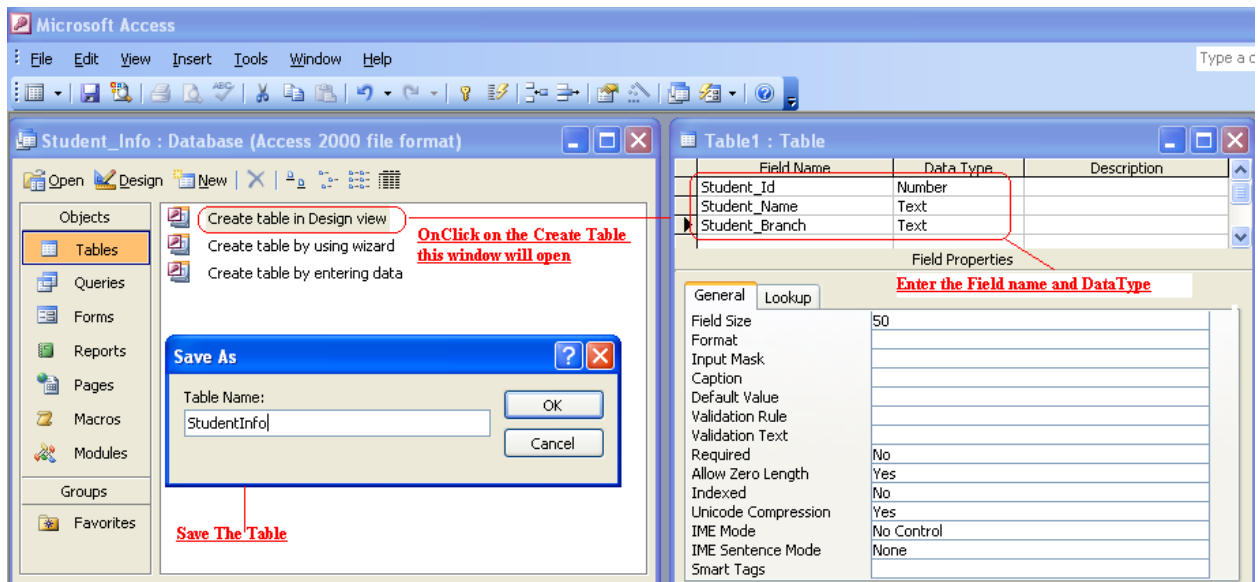
- Go to Start -> All Programs -> Microsoft Office->M S Access 2003



- Go File - > New -> Blank Data Base and Fill the Details.



- A Window will be Open, Select create New Table. Fill Up All The Details Then Save That Table with Appropriate Name.



Step 2: Implementation Process:

Create the pseudo code where there is Complex Procedure is to be Implemented.

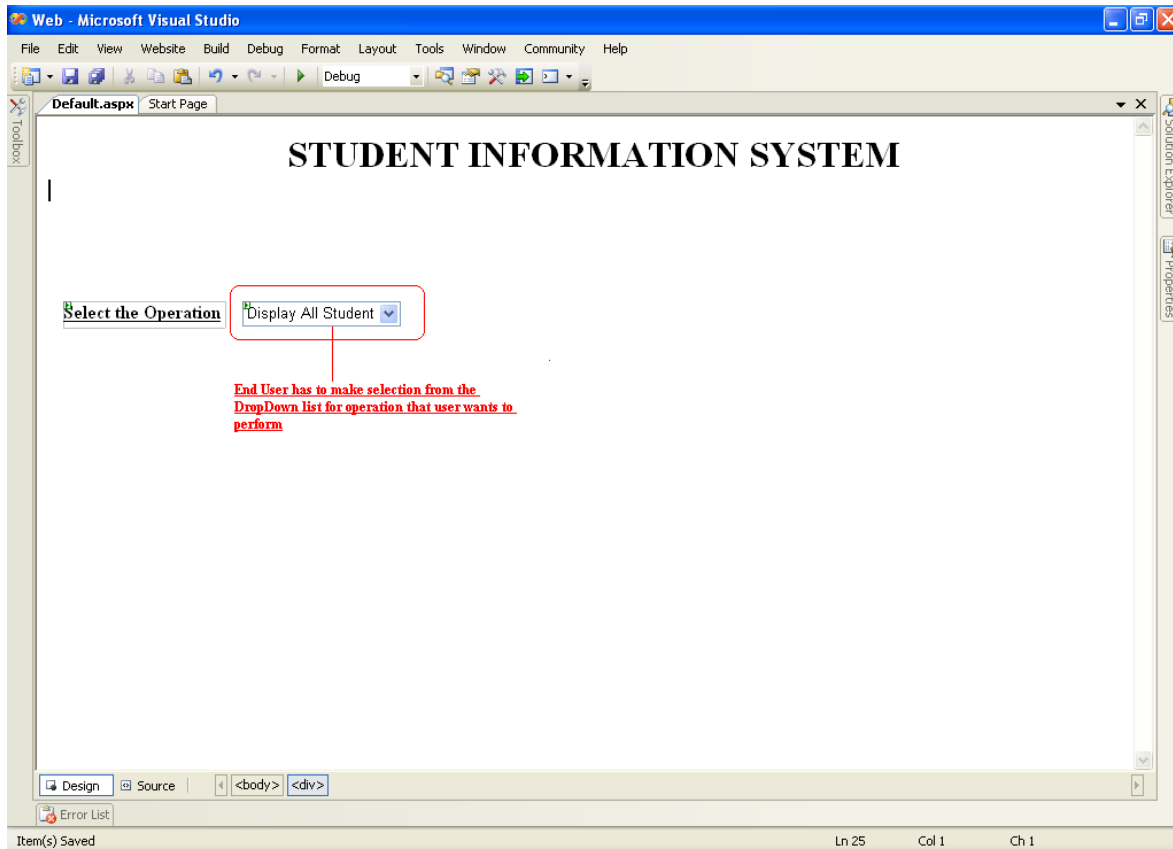
3.1 Analyzing the Problem:

- This Example is for Student Registration and Display facility with Three-Tier Architecture.
- From the noun Phrase analysis we come to know we have to create a DATABASE named “StudentInfo.mdb” for storing the Student Information. To full fill the Requirement we need to create an Asp.Net Application for Providing the User Interface and Access to the Database for registering and retrieving the Information.
- For creating the application we required to create a website using the Common Procedure.

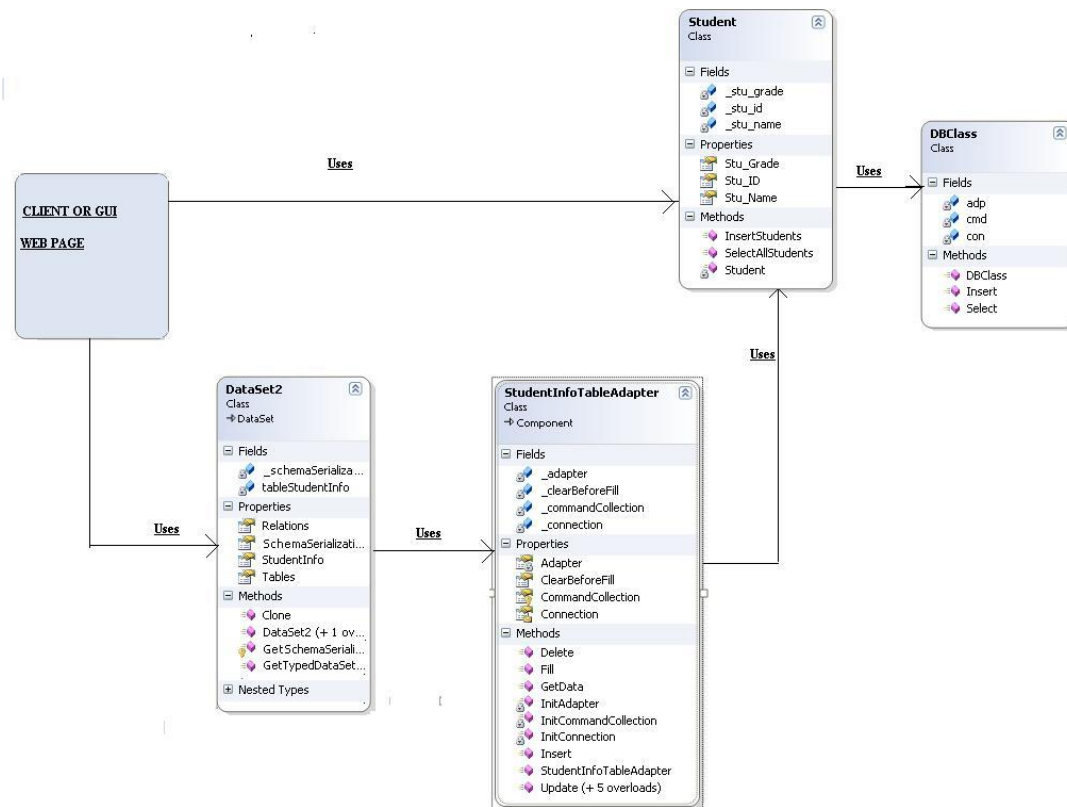
3.2 Designing the Solution:

- From the Problem Definition We have Create a Three-Tier Architecture for that you have to create Two Classes DbConnection.cs and Student.cs.
- First DbConnection.cs for Database connectivity as well as Information Storing and Retrieval from the Student Database this is also referred as Data Access Layer.
- Second is Student.cs this class exposes the all properties of “Student_Info “ Table in Data Base and the All Select and Insert Methods , This Methods in term call the method of DbConnection.cs.
- By creating these classes you are not going to allow programmer to direct Access to the Database.

GUI FOR THE THIS PROBLEM



Class Diagram



3.3 Implementing the Solution

3.3.1 Writing Source Code

DBCLASS.cs (Data Access Layer)

```

using System;
using System.Data;
using System.Configuration;
using System.Web;
using System.Web.Security;
using System.Data;
using System.Data.Common;
using System.Data.OleDb;
using System.Web.UI;
using System.Web.UI.HtmlControls;
using System.Web.UI.WebControls;
    
```

```
public class DBClass
{
    OleDbCommand cmd;
    OleDbConnection con;
    OleDbDataAdapter adp;
    public DBClass()
    {
        con = new OleDbConnection (ConfigurationManager.ConnectionStrings
["StudentsConnection"].ConnectionString);
    }
}
```

// SelectMethod

```
public DataSet Select(OleDbParameter[] param, string query)
{
    DataSet ds = new DataSet();
    cmd = new OleDbCommand();
    cmd.Connection = con;
    cmd.CommandType = CommandType.Text;
    cmd.CommandText = query;

    foreach (OleDbParameter p in param)
    {
        cmd.Parameters.Add(p);
    }

    con.Open();
    cmd.ExecuteNonQuery();
    con.Close();

    adp = new OleDbDataAdapter();
    adp.SelectCommand = cmd;
    adp.Fill(ds);
    return ds;
}
```

//Insert Method (Using OLEDB Classes)

```
public int Insert(string query)
{
    String str = "Provider = Microsoft.Jet.OLEDB.4.0; Data Source = E:\\Anand\\ANAND\\6 th
wt\\DataExample\\App_Data\\Student.mdb;";
}
```

```
OleDbConnection con = new OleDbConnection(str);

OleDbCommand cmd = new OleDbCommand();
try
{
    cmd.CommandText = query;
    cmd.Connection = con;
    OleDbDataAdapter da = new OleDbDataAdapter();
    da.InsertCommand = cmd;
    con.Open();

    cmd.ExecuteNonQuery();
    con.Close();
    return 0;
}
catch (Exception e)
{
}

return 1;
}
```

Student.cs (Business Access Layer)

```
using System;
using System.Data;
using System.Configuration;
using System.Web;
using System.Web.UI;
using System.Data;
using System.Data.Common;
using System.Data.OleDb;
using System.Web.UI.HtmlControls;
using System.Web.UI.WebControls;

public class Student
{
    private int _stu_id;
    private string _stu_name;
    private string _stu_grade;

    public int Stu_ID
```

```
{
    get { return _stu_id; }
    set { _stu_id = value; }
}
public string Stu_Name
{
    get { return _stu_name; }
    set { _stu_name = value; }
}
public string Stu_Grade
{
    get { return _stu_grade; }
    set { _stu_grade = value.Substring(0,1); }
}

private Student()
{
}
}
```

//Select Method.

```
public static Student[] SelectAllStudents()
{
    DBClass db = new DBClass();
    OleDbParameter p1 = new OleDbParameter();

    DataSet ds = db.Select(new OleDbParameter[0], "SELECT * FROM StudentInfo;");
    int count =0;
    Student[] result = new Student[ds.Tables[0].Rows.Count];
    foreach (DataRow dr in ds.Tables[0].Rows)
    {
        result[count] = new Student();
        result[count].Stu_ID = Int32.Parse(dr["stu_id"].ToString());
        result[count].Stu_Name = dr["stu_name"].ToString();
        result[count].Stu_Grade = dr["stu_grade"].ToString();

        count++;
    }

    return result;
}
```

```
                                //Insert Method
public static int InsertStudents(int id, string Name, string Grade)
{
    DBClass db = new DBClass();

    string query = "Insert into [StudentInfo]([stu_id],[stu_name],[stu_grade])values('" + id + "','"
+ Name + "','" + Grade + "')";
    int i = db.Insert(query);
    return i;

}

}
```

3.3.2 Compilation /Running and Debugging the Solution

- To compile the code Just Press F5 or Ctrl + F5, This will compile the code as well as display the errors those are found. If there is no error found then it runs the page in the browser.

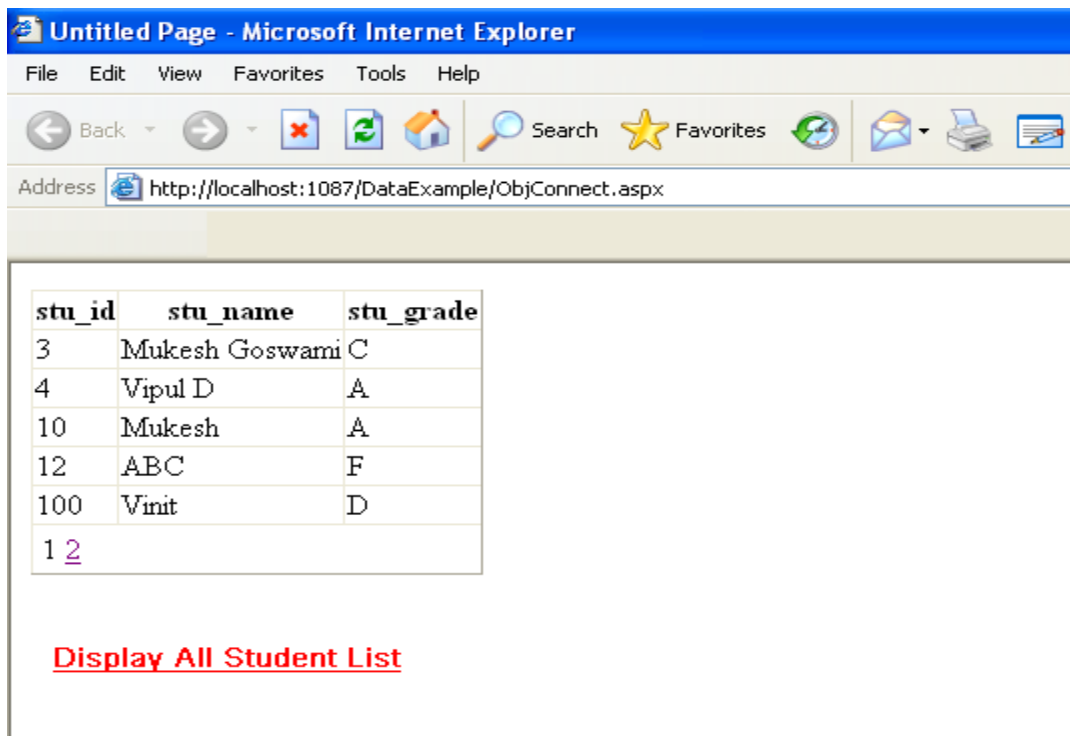
STUDENT INFORMATION SYSTEM

Select the Operation

Display All Student ▼

End User has to make selection from the DropDown list for operation that user wants to perform

- On selecting Display all Student Will Display the Data Of All the Students in Browser.



- On selecting the Insert Option for entry of New record Following Page will be Displayed
Insert the Details and pressing Insert Button all the Details will be Inserted in the Data Base.

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail News RSS

Address <http://localhost:1087/DataExample/Insert.aspx>

ID

Name

Grade

Inserted Value in Data Base

Table Tools Students : Database (Access 2002 - 2003 file format) - Microsoft Access

Home Create External Data Database Tools Datasheet

View Paste Font Rich Text Records Sort & Filter

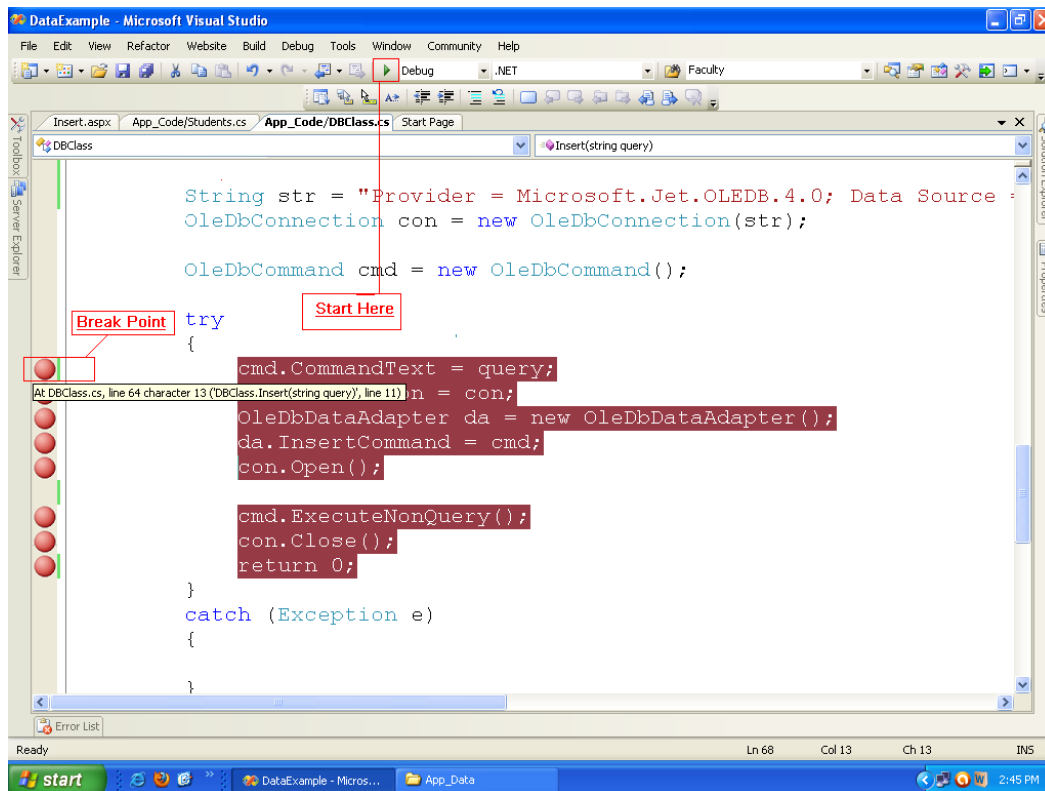
Security Warning Certain content in the database has been disabled Options...

Tables StudentInfo

stu_id	stu_name	stu_grade	Add New Field
3	Mukesh Goswa	C	
4	Vipul D	A	
10	Mukesh	A	
100	Vinit	D	
500	Anand	A	
*			

New Data Inserted

- To Debug Code First we need to create the break points,
- Goto .cs file click on left most side of code , By doing this a particular line of code is ready for break point.
- Then by pressing the F10 Key we can debug Code Line By Line



3.4 Testing the Solution

Test Cases for the Program

Sr. No	Test Case	Expected Output	Actual Output	Test Case Status
1	If User selects the Display All Student.	System should display List Of all Student those are present in the data base in GridView Control.	System should display List Of all Student those are present in the data base in GridView Control.	Pass
2	If user selects the Insert Option and enter all required details.	The record of the New student is going to be inserted in to the data base.	The record of the New student is going to be inserted in to the data base.	Pass
3	If user selects the Insert Option and does not enter all required details.	The system will prompts the error message and ask again to enter the details.	The system will prompts the error message and ask again to enter the details.	Pass
4	If user selects the Insert Option and does enter all required details with redundant values.	The system will prompts the error message that user is already exist.	The system will prompts the error message that user is already exist.	Pass

Screen Shot For Test Case 3 and 4

Test Case 3

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites RSS Print Mail

Address <http://localhost:1087/DataExample/Insert.aspx>

ID	<input type="text" value="500"/>	
Name	<input type="text"/>	Enter the Name
Grade	<input type="text" value="A"/>	

Test Case 4

Untitled Page - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites

Address <http://localhost:1087/DataExample/Insert.aspx>

User Already Exist

ID

Name

Grade

4 Conclusions

- This Sample Experiment Demonstrates All Basic Steps required to create three tier architecture Example Using Asp.net C#.
- Starting from “noun phrase analysis”, designing the solution based on problem definition and “noun phrase analysis”.
- Steps for compiling, Debugging and running the code.
- This Experiment also demonstrates way how we can map real time objects to Programming Language and create an application that transforms Human efforts to the Automated System.

COMMON PROCEDURE

Step 1: Design Process:

Design Web Form According the Application with the Help of the Standard ASP.net server Controls.

Create the database Design While Working with data base.

Step 2: Implementation Process:

Create the pseudo code where there is Complex Procedure is to be Implemented.

Tools/ apparatus: Microsoft Visual Studio 2005/2008/2010

Frame Work 2.0/3.5

Data Base Sever: MS Access

SQL Server 2005/2008

TUTORIAL – 1

- Study the Over View of the .net framework
- CLR and its Components.
- Multi-Language Support & MSIL.
- Compilers.

EXPERIMENT – 1

Aim: Create an application in which you are required to get the user profile information with help of standard asp.net server controls.

Procedure:

- Use the Text Box, Label, Button control and properties like Auto post back, Text Mode, Text and other element.
- Create a GUI which takes values from user and Display it in standard web controls.

TUTORIAL – 2

- Study the Standard asp.net web server controls
- Button, textbox, label
- All the Properties of these controls like Text, Id, Run at, Auto post back etc..
- Events of the Button and Text Box. Like On click event, Text changed Event.
- Study Radio button, radiobuttonlist, checkbox. Checkbox list, dropdown list.
- All Common properties, their event mapping of event to the server control.
- How to retrieve the values from the Checkbox, checkbox list, radio button, radio button list, And Dropdown list.
- How to add values to these controls statically as well as dynamically.

EXPERIMENT - 2

Aim: Extend the User profile Application which allow user to select the Material Status and Hobbies.

Procedure:

- Create Radio Button that Allows user to have Single selection for the Material Status.
- Create Checkbox List that Allow user to select the hobbies.
- On pressing the Submit Button retrieve all values and display on the screen.
- Use all Basic web controls available.

TUTORIAL - 3

- Explain the On command, Command name, and command argument properties of the button control.
- Generation of On Command Event.

EXPERIMENT – 3

Aim: Implement the calculator with the help of the Command argument and command name properties of the button control.

Procedure:

- Create GUI in which user has the facility enter two number and facility to perform the Addition, subtraction, multiplication and division operation
- The Division Operation Should not suffers from the Divide by zero error.
- Set the properties of button like command name, command argument.
- Generate command event for all operation like addition, subtraction, multiplication and division.

TUTORIAL - 4

- Study of the Place holder, runtime creation of the Aps.net server controls adding theses controls to the page, mapping their events.
- Use of placeholder control.
- Mapping events at run time, when control is created.

EXPERIMENT – 4

Aim: Create Run time Table Control as per user requirement and display it on the page.

Procedure:

- Create Place Holder that enables us to place our run time created control on web page.
- Create 3 drop down list which allows user to select no. of rows, no. of columns and grid line.
- On pressing the submit button Table Control should be created as per selected values.
- Create Button_Click event write code for auto generation of table.

TUTORIAL - 5

- Study of Image, Image Map, and Image Button server controls.
- How to Add Image in Image Control, Create the events of the image button and creation of the hotspot mode, assigning the postback values and navigate url to hotspot mode.
- Set the image to the control using Image URL property.

EXPERIMENT – 5

Aim: Create An Application which has Image, Image map and Image Button.

Procedure:

- Use Image Control to Display the Image On The Page.
- Use Image Button Then it should Display the x and y co-ordinate .
- Use Image Map Create the Rectangle hotspot mode on clicking that page should be post back.
- Create Circular hot spot mode, on clicking that page should be navigate to next page.

TUTORIAL - 6

- Study of the calendar control and its events.
- Methods of calendar control.
- Applying the format to the calendar control.
- Mapping the events like selected date changed and day render event.

EXPERIMENT – 6

Aim: Extend the user Profile Application in which user is Allowed to select the Date of Birth from the Calendar Control.

Procedure:

- Create Calendar Control that allows user to select the date.
- Also has the facility to Put Reminder in calendar control on particular date and that should be displayed when user navigate to that particular date in calendar control.

TUTORIAL - 7

- Study of the Validation controls.
- Validation at the client side and Server side.
- And cause validation, validation group properties of asp.net server controls
- Required Field Validator, Compare validator, Range validator, Regular expression etc..
- Properties of the validation controls.

EXPERIMENT – 7

Aim: Extend the User Profile Application where User must have to Pass All the validation.

Procedure:

- Create all required validation control on the page.
- Bind these controls to the asp.net server control that enables user to enter details.
- Like Username Should not be Empty, Password and Confirm Password Must Match etc...

TUTORIAL – 8

- Study of the Master Page, Content Page and Nested Master Page and their events.
- How to get or set the values of master page from the content page.
- Study of the File Upload Control. their event all the methods, Storing the file on the server and retrieve the details of the file like file name, file type, file size , ect..
- Working with file info and Directory info class.
- Runtime creation of the directory. Getting path of current working directory using methods of Directory Info Class.

EXPERIMENT – 8

i) Aim: Create A master page and content Page Application for the University which enables user to see the faculty list according to department.

Procedure:

- Master Page Contains the Header That Contains the University name and Address.
- Master Page Has the Facility to select the department as soon as it select the department then content page should display the names of the faculty in content page.

ii) Aim: Create an application in which user is allowed to upload the file on the server.

Procedure:

- Select the file Upload Control that Allows user to upload file.
- Create the submit button that Stores the File on the Server.
- Create the Retrieve Button that Display the All the Details of the file like file name, file type and file size.
- Create Get All File Button that displays all file those are currently uploaded on server.

TUTORIAL – 9

- Creation of the Data base in Access or Sql Server, assigning the relationship between them.
- Study of the Grid View Control. Binding the data to the control with the Access Data Source and Oledb Classes.
- All the Properties of the Access Data Source, selecting the data from the Access or Sql data Base.
- Study of the all Oledb classes and their methods like Oledb connection, Oledb command, and Oledb data Adapter etc.
- Shared classes like data table, data set.

EXPERIMENT – 9

- i) **Aim:** - Create an application in which user has to display records in the Grid View Control from Table created in access data base. (With the Help Of Oledb Classes or Access Data Source Control).

Procedure:

- Use the create a .MDB database using MS Access. Enter the values in table.
- In Application use the Oledb Classes for database Connection.
- Use Dataset Class for storing the values from Database. Use grid view control for displaying the data. Use bind () method for binding the dataset to grid view control.

- ii) **Aim:-** Create An Application which stores user information to the database.

Procedure:

- Create data base either in MS Access or Sql Server.
- Extend User Profile Application with all validation as soon as user press submit button all details are stored in data base.
- Use Either OLEDB classes or Access or SQL Data Source.

TUTORIAL – 10

- Study Of the Session Management
- Server Side and Client side and their pros. And cons.
- Study of the Session Object, Cookies, View state, hidden fields, Query string.
- Storing and retrieval of the Session at In Process, State Server and Sql Server Data Base.
- Using the web.config file.

EXPERIMENT – 10

Aim: Create the Sign In, Sign Up and Update Application

Procedure:

- Procedure: user has all facility like registration, update profile and login.
- As soon as user login user should navigate to update page where all the details of that user must be displayed accordingly.
- User Session Object to store the User Information.
- Use the Access/Sql Data source or The OLEDB Classes for the Data Base Connectivity.

TUTORIAL – 11

- Study of the Multi view and Wizard Control and their events.
- How to Add the Steps to wizard control, adding controls to steps, retrieving values from controls.
- Adding Views to Multi view control, Adding controls and retrieving values.
- All basic properties of the multi view control.

EXPERIMENT – 11

Aim: Create Application in which user is able to Submit his Profile with help of the Wizard and Multi View Control.

Procedure:

- Create The Step wise GUI for (wizard/Multiview) in which user can put his details.
- In first Step Personal Information, in second step Academic information and last Job Profile as soon as he press submit button all details should be displayed.

TUTORIAL – 12

- Study of Navigation Control Like, Site Map Server Control, Tree view, and menu server control.
- Study of the site map file, creation and assigning values and binding file to sitemap server control.
- Creating the xml file , binding the file to the tree view and menu server control.
- Retrieving the values of selected node from tree view and menu server control.
- All the basic properties.

EXPERIMENT – 12

- i) **Aim:** Use the Asp Navigation control that allows user to navigation and selection facility the pages of Web site.

Procedure:

- Use Sitemap, tree view and Menu server Control.
- Bind these controls with the sitemap file for that user the sitemap data source.
- Bind Tree View and Menu Server Control with the XML file with help of the XML data source.
- Allow Selection and Display Selected values on the Screen.

- ii) **Aim:** Create an application which displays the advertisement through Ad rotator Server Control.

Procedure:

- Create GUI for displaying the advertisement.
- Create Advertisement file(XML File) , Set all the Attribute of the file.
- Bind the file with XML DataSource .
- Bind Adrotator control with datasource.

TUTORIAL – 13

- Study of the Cache Object and their dependency.
- Creation of the cache object, Different constructors for different types of caching.
- Study of the standard Login control, Role Management and user management.

EXPERIMENT – 13

- i) Aim:** Create cache application in which, there should be implementation of File-based dependency, key-based dependency, and Time-based dependency.

Procedure:

- Create Application with Cache Dependency Class.
- Use different constructors for different type of dependency.
- Create two XML file with data, bind it with xml data source.
- Create buttons which will cache the file in memory, display it and remove it from the memory.

- ii) Aim:** Create application which uses Standard Login Control to The Web Application.

Procedure:

- Create Application which allows the User to Register to Website and Facility to Login in the Web site with Help of the Standard Login control.
- As soon as it Login then user should Navigate to the Next page that display the user name.
- Also enable Tracing at Page Level and Application level, study of the web.config file

TUTORIAL - 14

- Study of the User Controls and their event, using the user controls to the web pages.
- Adding User control to page, retrieving the values and unload the control from page.
- Study of the Application Object, and their event Execution.
- Authentication and Authorization. With help of the web.config file.
- Like Form Authentication, Windows Authentication, and passport authentication.

EXPERIMENT – 14

- i) **Aim:** Create the Application which gets the user profile from the user with the help of the user control.

Procedure:

- Create A gui Which Enables user to enter the User's Profile with help of the User Control.
- Register User Control To the Web Page.
- Display All details to user on pressing the Submit Button

- ii) **Aim:** Create an application which allows user to have Chat on two different pages.

Procedure:

- Create a GUI which allows the User to get Message, and post button that submit the page to server, and navigate to second page where other user can see message write his own message.
- Use the Application Object.

TUTORIAL – 15

- Study of the Windows Application.
- Starting from creation to Execution.
- Deployment Step that are Required to deploy a web site to local iis server.
- Use Of Java Script to the Web Application.

EXPERIMENT – 15

- i) **Aim:** Create a simple windows Application.
- ii) **Aim:** Deploy a web site on Local IIS server.

EXPERIMENT - 16

Aim: Create WCF application where user registration is done using the WCF Service.

Procedure:

- Create a WCF Service that enables user to register and validate login.
- Create Web Application, in which define the end point reference to the WCF service.
- Access the service through service reference and pass the values to the service.
- On successful registration navigate to next page.

EXPERIMENT - 17

Aim: Create the MVC Web Application which is Access the WCF service that is created in Exp 1.

Procedure:

- Create MVC Application in Create Login page that enable end user to enter his login details.
- Pass these values to the WCF Service through reference, this service will validate user's details one validation has been performed appropriate message should be displayed.
- Create Login as View and Controller.