# ASP.NET – 4.5
# Lab Book

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## Getting Started

### *Overview*

This lab book is a guided tour for learning ASP.NET version 4.5.
Follow the steps provided and work out the assignments given.

### *Setup Checklist for ASP.NET*

Here is what is expected on your machine in order for the lab to work.

### Minimum System Requirements

- Intel Pentium 4 and above

- Microsoft Windows 7 or 8

- Memory: 1 GB of RAM (2GB or more recommended)

- Internet Explorer9.0 or higher, Google Chrome

- SQL Server 2012 client and access to SQL Server 2012 server

- Visual Studio 2012.

### *Instructions*

- For all coding standards refer Appendix A.All lab assignments should refer coding standards.

- Create a directory by your name in drive <drive>. In this directory, create a subdirectory Asp.Net_assgn. For each lab exercise create a directory as lab <lab number>.

- You may also look up the on-line help provided in the MSDN library.

## Create the following database Tables:

**Table Name**:  MailUsers

| Column Name | Data Type |
|---|---|
| MailUserId | Char  (PK) |
| MailUserName | Char |
| MailUserPwd | Char |
| AccountCreationDate | DateTime |
| Hobbies | Char |

Table Name:  MailsInBox

| Column Name | Data Type |
|---|---|
| MailTranNo | Int (PK)  Identity |
| FromMailUserId | Char   (FK) |
| ToMailUserId | Char   (FK) |
| Subject | Char |
| MailText | Char |
| IsMailNew | Char |
| MailDateTime | DateTime |

## Lab 1.Creating Sign and Sign up pages

| | |
|---|---|
| **Goals** | To learn<br>   1.   Creating asp.net web pages<br>   2.   Using built in asp.net controls<br>   3.   Using Validation Controls to validate Input. |
| **Time** | 2 Hrs. |

Develop an Asp.Net application having web pages for:

1.1. Creating a Mail Account

    a.   Mail User Name should not be empty

    b.   Password should be at least 7 characters long. The first alphabet should be capital. Should have at least 2 digits somewhere in it.

    c.   Accept confirm password as well. And the Password and Confirm Password entries should match

    d.   Account Creation Date should be current date.

    e.   Accept hobbies using Checkboxes (like Reading, Drawing, Sports …) and check whether at least one checkbox is selected.

1.2. Sign In

    a.   Mail User Id and Password should not be empty.

    b.   Password should be at least 7 characters long. The first alphabet should be capital. Should have at least 2 digits somewhere in it.

    c.   Add a hyperlink to this page, so that if user is new he can navigate to "Create Mail Account" page.

Create the above pages based on "MailUsers" table.

1.3. Modify the SignIn Page and use HTML5 Controls

1.4. View the pages with the Page Inspector.

**Figure 1: Notepad**

## Lab 2.Creating Master Page and Themes and applying

| | |
|---|---|
| **Goals** | To learn<br>　　1. Creating asp.net web page based on Master<br>　　2. Creating asp.net themes<br>　　3. Applying Master page and theme to application |
| **Time** | 4 Hrs. |

2.1. Create a Master Page which has

Top Header section showing the Company Logo and Name.

Left Side Bar and

Section to display Content Page Information.

2.2. Create 2 Themes, Royal Blue and Royal Red.

**Royal Blue Theme:**

a)  Textboxes, Labels, Checkbox, Dropdown, Radio buttons should have fore color: Dark Blue
b)  Buttons should have Back color: Dark Blue and fore color: White.
c)  For all controls set font to verdana, size 11 pt.
d)  Top Header section and Left Side Bar section should have dark blue as background color.

**Royal Red Theme:**

a)  Textboxes, Labels, Checkbox, Dropdown, Radio buttons should have fore color: Dark Red
b)  Buttons should have Back color: Dark Red and fore color: White.
c)  For all controls set font to verdana, size 11 pt.
d)  Top Header section and Left Side Bar section should have dark red as background color.

Apply the theme at application level using web.config.

2.3  Create an Asp.Net page based on the Master page created in 2.1 to Send Mail.

This page will accept
　　a.  "To" Mail User Id
　　b.  Subject
　　c.  Mail Body Text

The page will have send Mail Button.

Validate that all the entries should be mandatory.

Modify the above page with Html5 Validation

|

# Lab 3. Creating a Business Service Layer in form of DLL

| | |
|---|---|
| **Goals** | To Learn : <br><br> • Creating BL DLL <br> • Creating BL service class. Identify the service signature <br> • Using Entity Classes and Collection classes to exchange data between layers. <br> • Use BL service. |
| **Time** | 10Hrs |

3.1: Create a separate DLL

    a. Define Entity classes corresponding to the database tables

    b. Create a Business Layer (BL) class "MailService" which will have functions to SignIn, SignUp , Send Mail and Get the Mails from Inbox.

Identify what will be the function names and their signatures

For e.g.:

SignIn function will accept MailUserID and Password as parameters.

Signup function will accept parameters one for each column in "MailUsers" tables except for AccountCreationDate column.

3.2: Modify the SigIn, Signup, and SendMail pages created in earlier lab so that the pages now make calls to the corresponding functions written in the BL class of Lab 3.1

3.3: Use JQuery concepts wherever required.

3.4: Implement Strongly Typed Data Controls for the Send Mail.aspx

# Lab 4. Using State Management Techniques

| | |
|---|---|
| **Goals** | To Learn :<br><br>• Using server side & client side state management<br>• Using GridView Control to show multiple details and customize grid.<br>• Link multiple asp.net pages with each other |
| **Time** | 10Hrs |

4.1: Update the SignIn page so that once an user successfully signs in, store the user id and user name either in session OR cookie and redirect the userto Inbox Page

4.2: Create one more asp.net page "InBox.aspx" page to show Mails from Inbox for currently logged in user.
        a. The Inbox should show only the Sender User Id, Mail Subject, and MailSent DateTime in a Grid View.
        b. Show Mail Subject column as hyperlink.

4.3:  Create an asp.net page to ShowMailText.aspx.
        When user clicks on the Mail Subject hyperlink column displayed in Lab 4.2 , he should be directed to this page and the mail contents of the mail should be shown here.

4.4:  Update the SignIn page so that once user successfully signs in, store the user id and user name in Local Storage or Session Storage and redirect user to  Inbox Page

# Lab 5. Using Personalization and Templates

| Goals | To Learn : |
|-------|------------|
|       | • Using DetailsView/GridView Control to show multiple details and customize data display. |
|       | • Changing Themes at runtime. |
| Time  | 6  Hrs. |

5.1: In the Lab 4.2, add an option for user to delete certain existing mails.
    In the MailUsers table add one more Colum Display Preference (Char Data Type) which will have value either "tabular" or "block". Default Value should be "tabular"

5.2: Create an asp.net page "Change Profile" to let user modify this profile setting.
    **a.** This page should ask for Display Format from user i.e.: tabular/block, and accordingly save this setting in the Mail Users table.
    b. Add a new function into BL service class MailService which will be called from this page to change the profile setting.

If user sets "tabular" display style in profile then use Grid View control in Lab 4.2 asp .net page to display mails list. For "block" display style use DetailsView control to display the mails list.

*Hint: You can use 2 different pages to show the Mails List in 2 different formats (Grid View Control / DetailsView  Control) and redirect the user to one of these pages from the sign in page based on this profile setting.*

5.3: In the Master Page created in Lab 2.1, add a hyperlink to Left Side Bar, which points to the Change Profile asp.net page.
 Also add 2 Buttons with text "Royal Blue Theme" and "Royal Red Theme" in the Left Side Bar. When user clicks these buttons change the theme applied.
 Include SitMap control to show the Navigation path

# Lab 6. Authentication and Authorization

| | |
|---|---|
| **Goals** | To Learn :<br><br>• Using Security Features<br>• Forms Based Authentication<br>• Login Controls |
| **Time** | 4Hrs |

6.1:  Implement Forms Based Authentication for SignIn page
         Check for the entered user credentials, and redirect to the required page using the methods of FormsAuthentication class.
Also use the SignOut method for Logout option .


6.2: Use Login Controls like Login, LoginName, LoginStatus, PasswordRecovery ( as applicable)


6.3: Implement Membership and Roles in the SignIn page.
         Use ValidateUser method of Membership class to validate the user.
         Implement RoleManager and specify the RoleProvider in web.config


6.4: Implement Security with Site Map  Based on roles.

## Lab 7. Deployment in ASP.NET

| Goals | To Learn : |
|-------|------------|
|       | • Deploying an ASP.NET Website<br>• ClickOnce Technique<br>• Aspnet_Compiler |
| Time  | 0.5Hr |

7.1:  Deploy using Setup (Publish web site)

a.   Go to Build menu, select Publish Website or Right Click on the Website in the Solution Explorer Window and click on Publish Website.
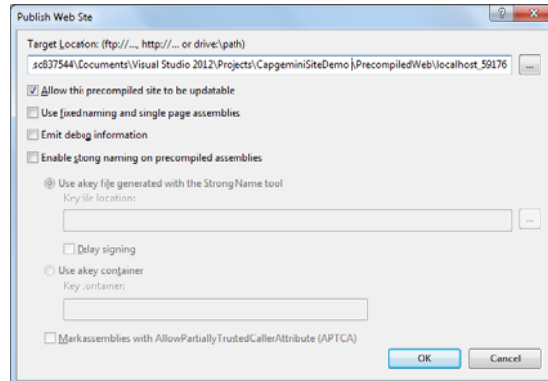


b.   The Publish Website wizard opens, set the Target Location for the Site to be published and check the checkboxes if required.

c.   Click OK to publish, navigate to the Target Location specified where you can notice a folder named "PreCompiledWeb" as a result of Deployment.

7.2: Deploy using aspnet_compiler

a.   Create a separate folder to store the build output of the asp.net web site. (Fore.g. D:\WebSiteBuildOuput)

b.   Go to Visual Studio 2012 command prompt. Execute the compiler utility as shown:
**aspnet_compiler -v /AspNetDemo -p C:\AspNetDemo D:\WebSiteBuildOuput**
where "C:\AspNetDemo" is the folder where asp.net web site source files exist
and "D:\WebSiteBuildOuput" is where build output needs to be generated

c.   Move to this above output folder to see the build output to be deployed on the Web Server.

**Note**:  In the build output all ".aspx.cs" as well as ".aspx" files are also compiled so that application is completely precompiled and there is not additionally delay at runtime.

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# Lab 8. Using Ajax Features and Controls

| Goals | To Learn : |
|-------|-----------|
| | 1. Optimize the asp.net pages using AJAX controls<br>2. Using ScriptManager ,UpdatePanel controls<br>3. Using controls from AjaxControlToolkit |
| Time | 4Hrs |

8.1: Make the SignIn and SignUp pages to be Ajax-enabled, so that whole page will not get refreshed while user isSign in their mail account and Sign up to create a new mail id.
When the SignIn or SignUp activity is in progress, notify the user about it.

***Hint: Use Update Panel, ScriptManager and UpdatePanel Progress Control***

8.2 Use following Ajax Controls from the Toolkit
*(Ajax Control Toolkit (dll) will be shared by the Trainer)*
For SignIn page (Password strength, Textbox Watermark)

8.3 Implement Jquery concepts where ever required