

B.C.A (5th Semester)

Teaching Schedule

030010514: DSE6 Fundamentals of Web Application Development

Objective: To provide basic understanding of framework and in-depth knowledge of developing dynamic and rich Web application in conjunction with Event handling, State management, Data accessing and providing security using membership and profiles.

Course Outcomes: Upon completion of the course, the student shall be able to

C01: Determine usage of web application framework.

C02: Create Web pages, handles events and manipulate content.

C03: Build Web applications using state management.

C04: Access data by using built-in SQL Server and generate dynamic reports.

C05: Conveniently extract and process data using file stream, and also able to develop the application with concept of caching, LINQ and entity framework.

C06: Design and develop secure Web application.

C07: Usage of advanced features like AJAX and jQuery.

Unit	Sub Unit	No. of Lecture(s)	Topics	Reference Chapter/Additional Reading	Teaching Methodology to be used	Evaluation Parameters
Unit 1 : Basics of Framework						
1	1.1	1	Introduction of Framework	MM #1 – Page no. 8-14	Power point presentation	
	1.2		Building block of framework architecture	KW #1 – Page no. 3 KL #1- Page no. 1-5		
	1.3	1	Web Form Fundamentals	MM #5 – Page no. 121-134 IS #2 – Page no. 47-61	Power point presentation	
	1.4	2	Common Web Controls	MM #6 – Page no. -163-184	Power point presentation, chalk and talk	
	1.5	1	Web Control Events	MM #6 – Page no. 184-202	Power point presentation	

	1.6	1	Error Handling, Logging and Tracing	MM #7 – Page no. 203-231	Power point presentation	
	1.7	3	State Management: Server side, Client side	MM #8 – Page no. 233-268	Power point presentation, Group Discussion, Debate will be there for one lecture for client and server side techniques	
	1.8	1	Web application configuration	MM #26 – Page no. -843-846	Power point presentation, Demonstration	
Unit 2 : Building Web Forms						
2	2.1	1	Validation Controls	MM #9 – Page no. 271-292	Power point presentation	
	2.2	1	Rich Web Controls	MM #10 – Page no. 293-318	Power point presentation	
	2.3	1	User Control	MM #11– Page no. 319-331 IS #7 – Page no. 273-296	Power point presentation	Quiz
	2.4	1	Dynamic Graphics and Chart	MM #11 – Page no. 331-343 http://www.asp.net/web-forms/videos/net-4/chart/aspnet-4-quick-hit-chart-control	Demonstration , Audio-Visual tool	
	2.5	1	Styles: Creating and applying CSS	MM #12 – Page no. 345-360 IS #3 – Page no. 65-97	Power point presentation, chalk and talk	
	2.6		Themes: Applying theme and skin	MM #12 – Page no. 360-368 IS #6 – Page no. 232-235	Power point presentation, chalk and Talk, Hands-On	
	2.7	1	Master Page	MM #12 – Page no. 368-387	Power point	

			and Advanced Master Pages		presentation, Demonstration	
	2.8	1	Website Navigation Controls	MM #13 – Page no. 387-422 IS #7 – Page no. 239-268	Power point presentation	
Unit 3: Working with Data						
3	3.1	1	Introduction to data architecture	MM #14 – Page no. 425	Chalk and talk	
	3.2	1	Data Provider Model: Using Direct Data Access, Connection object, Command object, Using Disconnected Data Access	MM #14 – Page no. 440-471	Power point presentation	
	3.3	1	Data Binding: Introduction, Single Value Binding, Repeated-Value Data Binding	MM #15 – Page no. 473-494	Power point presentation	
	3.4	1	Working with Data Source Control	MM #15– Page no. 494-509	Power point presentation, Demonstration	
	3.5	2	Data Controls	MM #16 – Page no. 511-549	Power point presentation	
	3.6	1	Report generation	MM #13 – Page no. 387-422	Power point presentation, Demonstration	
Unit 4: Working with other Data						
4	4.1	3	Files and Streams: Reading and Writing with	MM #17 – Page no. 566-579	Power point presentation	UnitTest-1

			Streams, Allowing File Uploads			
	4.2	2	Caching: Understanding Caching, Output Caching, Data Caching	MM #23 – Page no. 729-747	Chalk and talk	
	4.3	3	LINQ: Basics, Expressions, Providers – LINQ to SQL, LINQ to Dataset, LINQ to Object	MM #24 – Page no. 753-761	Power point presentation, Group Discussion	
	4.4	2	Entity Framework	MM #24 – Page no. 761-776 http://www.asp.net/web-forms/videos/aspnet-web-forms-vnext	Power point presentation, Audio-Visual tool	
Unit 5: Website Security						
5	5.1	1	Form Authenticatio n	MM #19 – Page no. 619-634	Power point presentation	
	5.2	2	Membership Data Source	MM #20 – Page no. 639-656 https://docs.microsoft.com/en-us/aspnet/web-forms/videos/how-do-i/how-do-i-secure-my-site-using-membership-and-roles	Chalk and talk, Audio- Visual tool	
	5.3	2	The Security Controls	MM #20 – Page no. 656-668	Power point presentation	
	5.4	1	Role-Based Security	MM #20 – Page no. 668-674	Power point presentation	
	5.5	1	Profiles	MM #21 – Page no. 675-695	Power point presentation	
Unit 6: Advanced Features						

6	6.1	2	Introduction of AJAX	MM #25 – Page no. 791-794	Chalk and talk	
	6.2	3	Overview of jQuery: Syntax, Effect, Validation	IS #11 – Page no. 369-403	Power point presentation, Hands-On and two programs will be given to students for solving in one lecture	
	6.3	1	Sending Email from Web Applications	IS #9 – Page no. 321-333	Power point presentation, Demonstration	
	6.4	1	Introduction of Web services	IS #10 – Page no. 351-365	Chalk and talk, Demonstration	Internal

References :

Text Book:

1. Matthew MacDonald, Beginning ASP.NET 4.5 in C#, Apress. [MM]

Reference Book :

1. ImarSpaanjaars, Beginning ASP.NET 4.5 in C# and VB, Wrox. [IS]
2. Anne Boehm, Joel Murach, murach's ASP.NET 4 web programming with C#2010, Fourth Edition, SPD.
3. Jason N. Gaylord, Christian Wenz, PranavRastogi, Todd Miranda, Scott Hanselman, "PROFESSIONAL ASP.NET 4.5 in C# and VB", Wrox.
4. Matthew MacDonald, Adam Freeman and Mario Szpuszta, Pro ASP.NET 4.5 in C# 2012, Apress.

Note: # denotes chapter number.

Course objectives and Course outcomes mapping:

Understanding of Framework: CO1

Developing dynamic and rich web application: CO3, CO4, CO6, CO7

In depth knowledge of Event handling and state management: CO2, CO3

In depth knowledge of data access and LINQ: CO4, CO5

Providing security using membership and profiles: CO3, CO7

Course units and Course outcome mapping:

Unit No.	Unit	Course Outcomes						
		C01	C02	C03	C04	C05	C06	C07
1	Basics of Framework	✓	✓	✓				
2	Building Web Forms	✓	✓					
3	Working with Data				✓			
4	Working with other Data				✓	✓		
5	Website Security			✓				
6	Advanced Features							✓

Programme Outcomes:

PO1: Proficiency in and ability to identify problems related to computer science as well as design and apply computational knowledge to solve them.

PO2: Ability to design, develop, test and maintain system, component, product or process as per needs and specification.

PO3: Understanding of professional and ethical role and responsibility.

PO4: Recognition of the need for and ability towards life-long learning.

PO5: Knowledge of programming languages, database systems, operating systems, software engineering, Web & Mobile technology and relevant modern issues.

PO6: Ability to demonstrate the use of modern tools, models and languages to solve problems related to software development

PO7: Ability to communicate and present knowledge effectively.

Programme Outcomes and Course Outcomes mapping:

Programme Outcome	Course Outcomes						
	C01	C02	C03	C04	C05	C06	C07
P01			✓		✓		✓
P02	✓	✓	✓	✓	✓	✓	✓
P03						✓	
P04							✓
P05	✓	✓	✓	✓	✓	✓	✓
P06	✓	✓	✓	✓	✓	✓	✓

PO7	✓	✓	✓	✓	✓	✓	✓
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Computing Environment:

A student must have the following computing environment available in laboratory as well as in his/her personal laptop.

- Visual Studio 2010 or above

Modes of Transaction (Delivery):

Unit No	Topic Detail	Teaching Approach	PO mapped
1	State management techniques	Debate on client side and server side techniques	PO2, PO7
6	jQuery	Group of 2-3 students shall be framed and specific definition shall be given by course teacher to apply jQuery on form.	PO2, PO3, PO6, PO7

Activities/Practicum:

The following activities shall be carried out by the students:

- Student shall have to prepare assignment on list of controls, which are commonly used in various applications.
- Develop Web utility to get exposure to web application development.

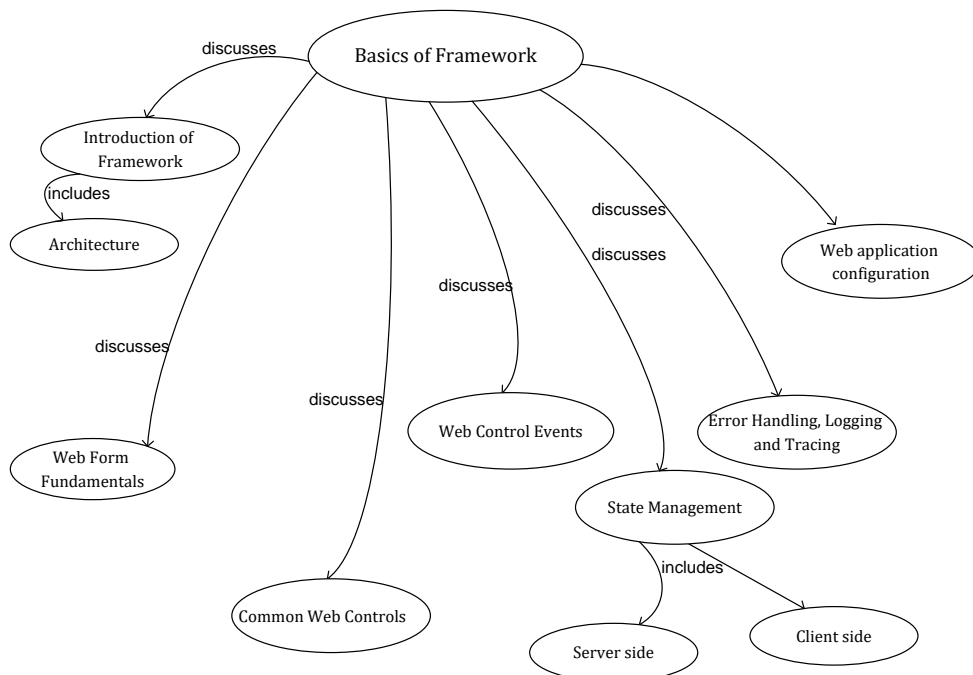
The following activities shall be carried out by the teacher:

Learner	Activities to be done	PO mapped
For slow learners	Give two practical to be performed and ten questions to be written at the end of every unit	PO2,PO5,PO6
For advanced learners	Give one complex practical to be	PO2,PO5,PO6,PO7

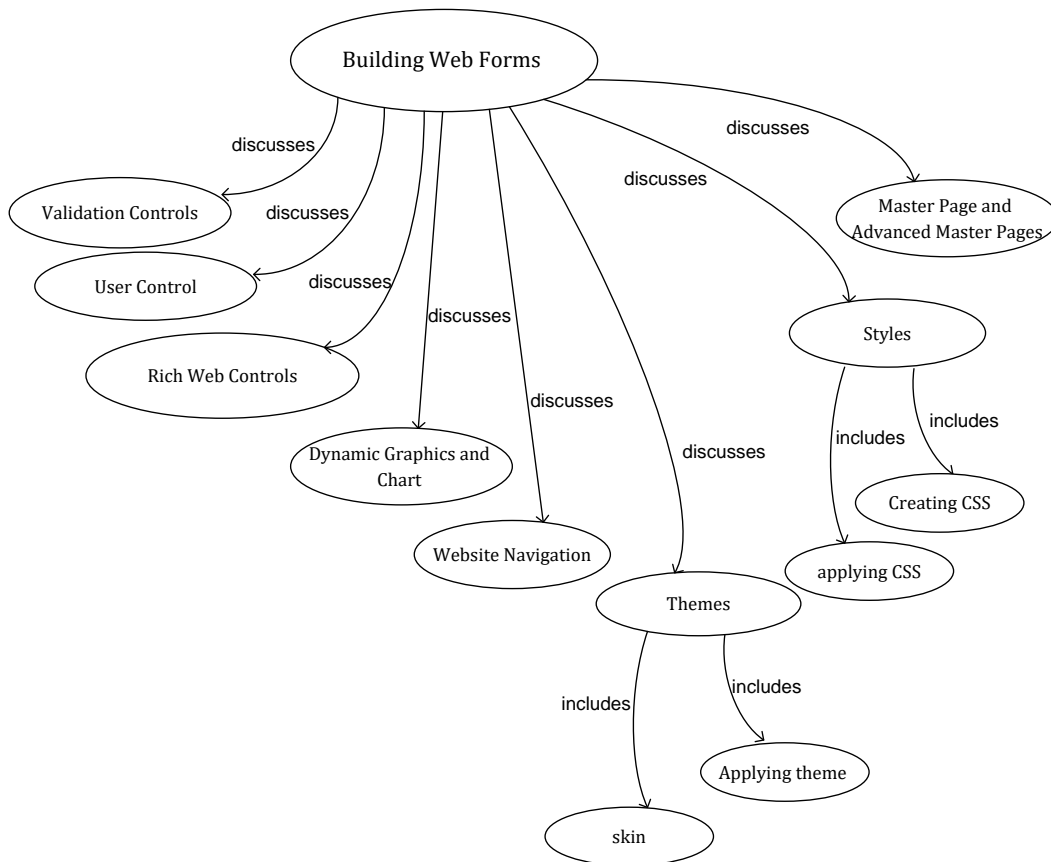
	performed at the end of every unit.	
For all	Fetch XML data using LINQ	P05

Concept map:

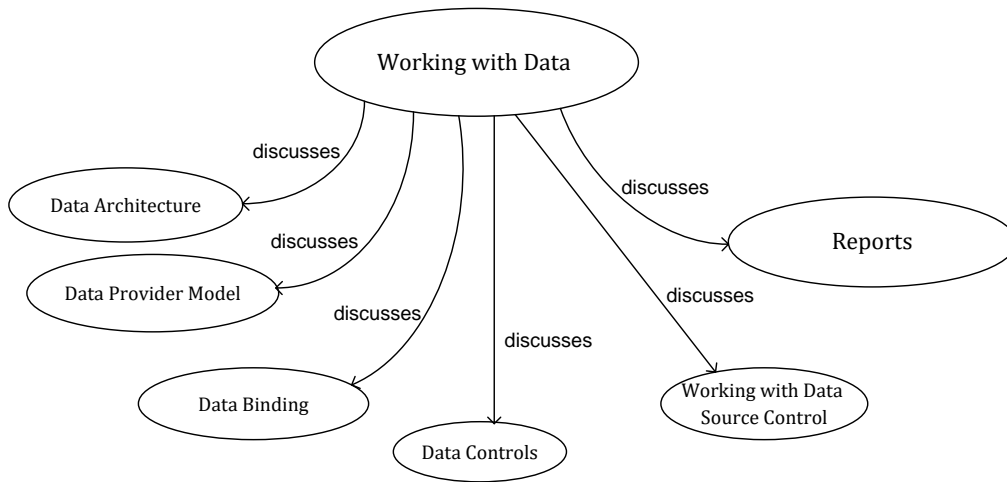
Unit 1: Basics of Framework



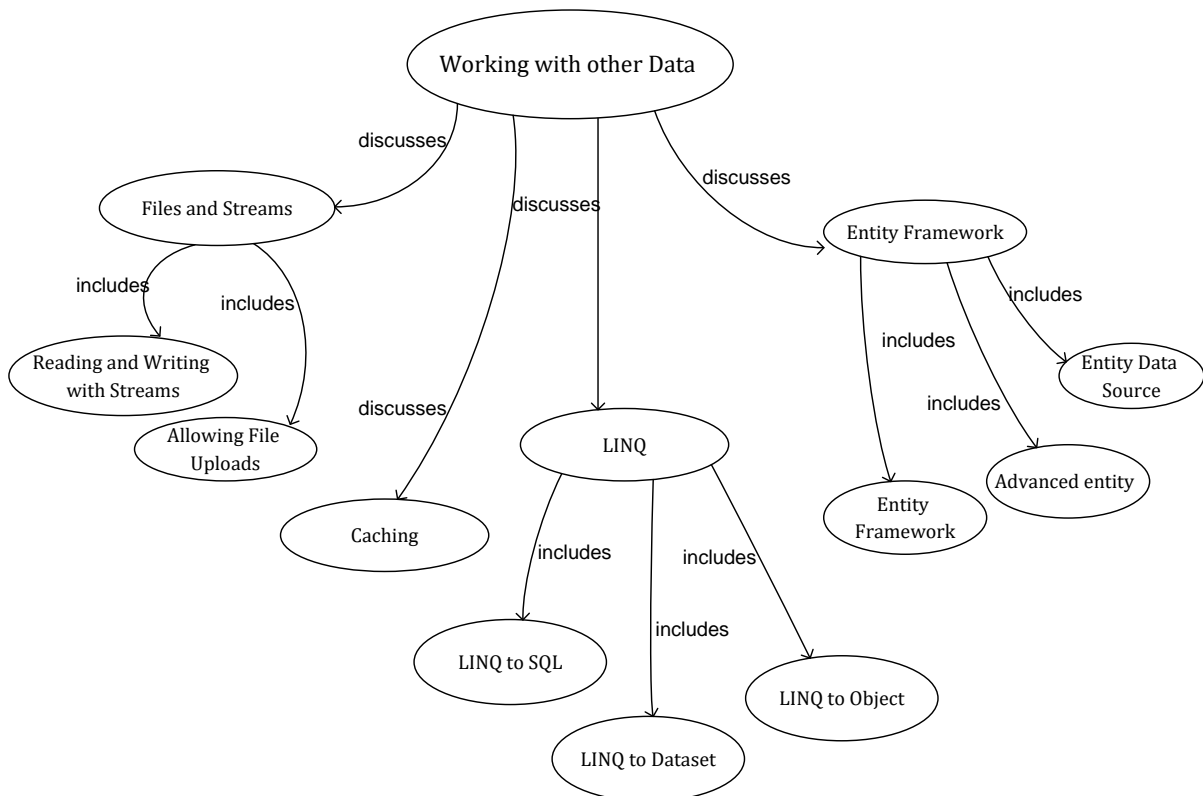
Unit 2: Building Web Forms



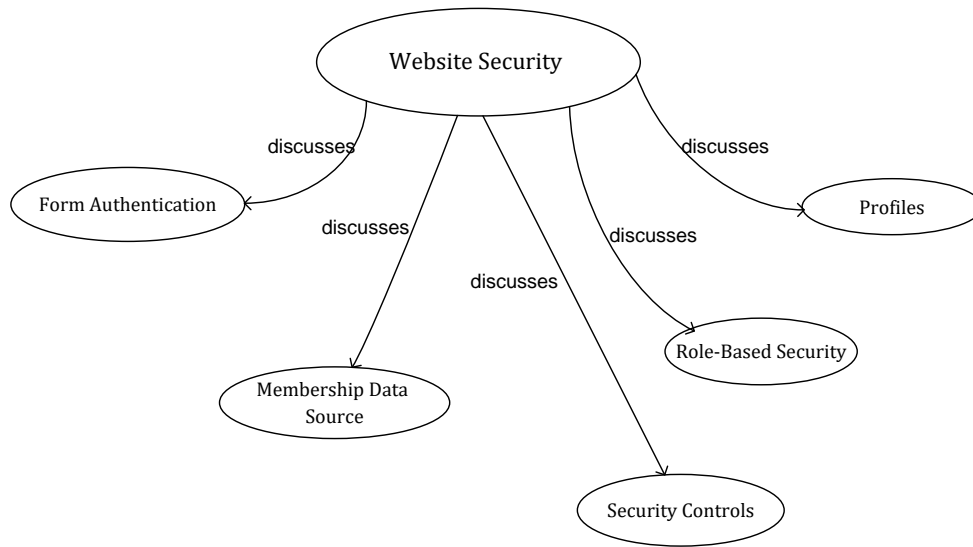
Unit 3: Working with Data



Unit 4: Working with other Data



Unit 5: Website Security



Unit 6: Advanced Features

