ASP.NET Web Forms Project

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- Creating a new project
- select **new -> project.**
- selecting ASP.NET Web Application.
- we are selecting Web Forms as because we are creating a Web Forms application.
- This project contains a **default.aspx** file which is a start-up file.
- When we run the project this file executes first and display a home page of the site.

ASP.NET Web Forms Server Controls

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Control Name	Description
Label	It is used to display text on the HTML page.
TextBox	It is used to create a text input in the form.
Button	It is used to create a button.
LinkButton	It is used to create a button that looks similar to the hyperlink.
Hyperlink	It is used to create a hyperlink control that responds to a click event.
RadioButton	create radio button.(CheckChanged)
Calendar	

CheckBox	used to create checkbox.(CheckChanged)
DropDownList	It is used to create a dropdown list control.(Event SelectedIndexChanged)
ListBox	create a ListBox control like the HTML control. .(Event SelectedIndexChanged)

Cookie

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- ASP.NET Cookie is a small bit of text that is used to store user-specific information.
- Cookies is a small piece of information stored on the client machine.
- Its is used to store user preference information like Username, Password, City and Phone No etc. on client machines.

Type of Cookies

- Persist Cookie - A cookie has not have expired time Which is called as Persist Cookie
- Non-Persist Cookie - A cookie has expired time Which is called as Non-Persist Cookie

Session ASP.NET

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- ASP.NET Session is simply a state from where we can retrieve the values of the user and stores it in the web page session.
- It is way in ASP.NET to ensure that the information which is passed from one page to another.
- By default, the value for the timeout is 20 minutes. You can change also time
- <system.web>

  <sessionState timeout="2"></sessionState>

  </system.web>
- After login you stay idle on some period of time on any website, then after you do any activity on site and you automatically have been sign out from website and they ask to us login again.

ASP.NET Validation

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Validator	Description
CompareValidator	It is used to compare the value of an input control against a value of another input control.
RangeValidator	It evaluates the value of an input control to check the specified range.
RegularExpressionValidator	It evaluates the value of an input control to determine whether it matches a pattern defined by a regular expression.
RequiredFieldValidator	It is used to make a control required.
ValidationSummary	It displays a list of all validation errors on the Web page.

ASP.NET Master Page

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- **ASP.NET master pages** allow you to create a consistent layout for the **pages** in your application.
- A single **master page** defines the look and feel and standard behaviour that you want for all of the **pages** (or a group of **pages**) in your application.
- Master pages can contain text and graphic elements that will appear on all pages of a publication (i.e. headers, footers, page numbers, etc.)
- Master page actually consists of two pieces, the master page itself and one or more content pages.

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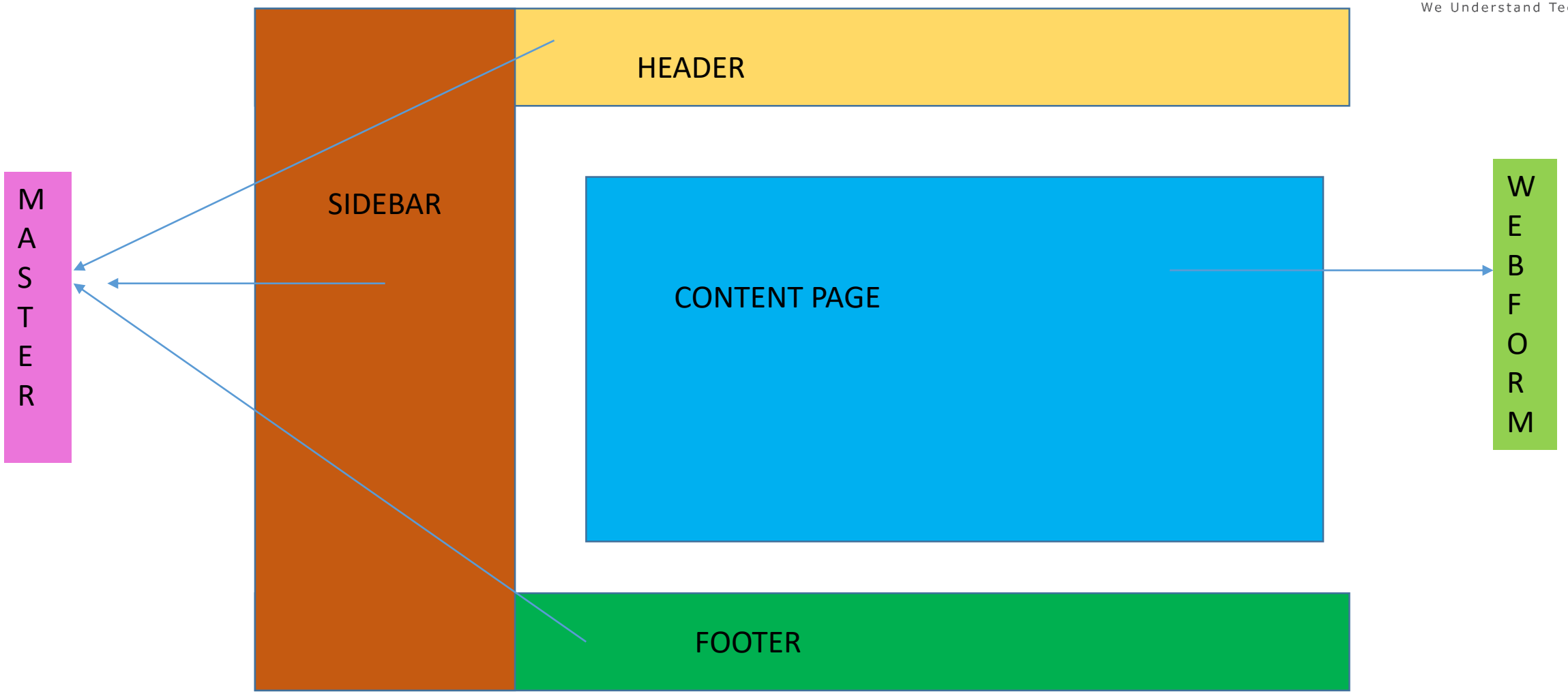

MVC

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- The MVC (Model-View-Controller) is an application development pattern or design pattern which separates an application into three main components:
  1)MODEL
  2)VIEW
  3)CONTROLLER
- **Model:** Model is a part of the application which implements the logic for the data domain of the application.
- It is used to retrieve and store model state in a database such as SQL Server database.
- It also used for business logic separation from the data in the application.

- **View:** View is a component that forms the application's user interface.
- It is uses to create web pages for the application.

- **Controller:** Controller is the component which handles user interaction.
- It works with the model and selects the view to render the web page.
- In an MVC application, the view only displays information whereas the controller handles and responds to the user input and requests.

MVC Architecture

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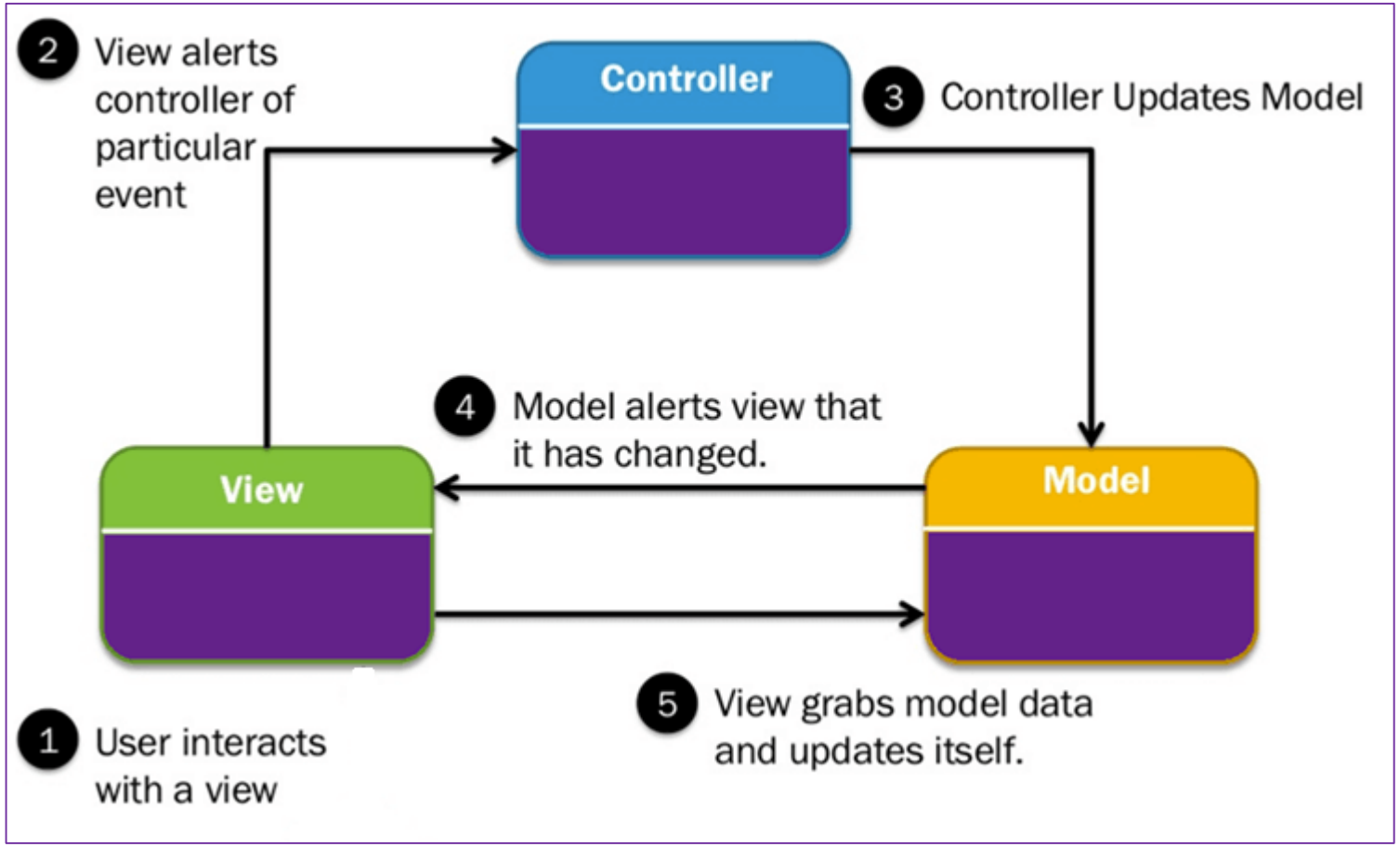

Advantages

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- It manages application complexity by dividing an application into the model, view and controller.
- This makes the MVC framework ideal for developers who want full control over the behaviour of an application.
- It provides better support for test-driven development.
- It is suitable for large scale developer team and web applications.

MVC Scaffolding

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- It is a feature of ASP.NET that allows us to generate functional code rapidly.
- It is also known as code generator framework.
- It is pre-installed in Visual Studio 2013 and higher version.
- To create basic CRUD application, scaffolding is best choice.
- It reduces time amount and generate clean code.
- Here, we are using scaffolding to develop CRUD application.

MVC Entity Framework

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- It is a data access framework which used to create and test data in the visual studio.
- It is part of .NET Framework and Visual Studio.
- The latest package is shipped as Entity Framework NuGet Package.
- The latest version is Entity Framework 6.0.
- We are using it in our ASP.NET MVC application.
- First, we will create a project then adding models to it.
- Automatically generate View files(Create ,View,Edit,Delete,)

MVC ViewData, ViewBag and TempData

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- ASP.NET MVC provides three variables to store and passing values from controller to view.
- Both **ViewData** and **ViewBag** are similar except **TempData** that has additional features.

ViewData

- It is a dictionary of objects and derived from ViewDataDictionary class.
- We can access value by using string as a key.
- It is type-safe and requires typecasting for data type.
- We are creating a controller and returning a view to the browser.
- This controller passes Courses ViewData to the view.

```
public ActionResult Index()
      {
          List<string> Courses = new
List<string>();
          Courses.Add("C#");
          Courses.Add("ASP.NET");
          Courses.Add("ADO.NET");
          Courses.Add("HTML");
          ViewData["Courses"] =
Courses;
          return View();
      }
```

ViewBag

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- It is a dynamic property which is similar to ViewData.
- it is used to send data from controller to the view page.
- ViewBag can get and set value dynamically that's why it is called dynamic property.
- It does not require type conversion and convert type dynamically.

```
List<string> Courses = new List<string>();
        Courses.Add("C#");
        Courses.Add("ASP.NET");
        Courses.Add("ADO.NET");
        Courses.Add("HTML");
        ViewBag.Courses = Courses;
        return View();
```

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INTRODUCTION

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- ADO.NET is a module of .Net Framework which is used to establish connection between application and data sources.
- Data sources can be such as SQL Server and XML.
- ADO.NET consists of classes that can be used to connect, retrieve, insert and delete data.
- All the ADO.NET classes are located into **System.Data.dll** and integrated with XML classes located into **System.Xml.dll.**
- It provides various objects such as **Connection, Command, DataReader and DataAdapter** that are used to perform database operations.

Data Providers

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Data provider	Description
➢ SQL Server	✓ It requires the **System.Data.SqlClient** namespace.
➢ OLE DB	✓ It requires the **System.Data.OleDb** namespace.
➢ ODBC	✓ It requires the **System.Data.Odbc** namespace.
➢ Oracle	✓ t uses the **System.Data.OracleClient** namespace
➢ EntityClient Provider	✓ It requires the **System.Data.EntityClient** namespace.

Data Providers Objects

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S.R	Object	Description
1	❖ Connection	✓ It is used to establish a connection to a specific data source.
2	❖ Command	✓ It is used to execute queries to perform database operations.
3	❖ DataReader	✓ It is used to read data from data source. The DbDataReader is a base class for all DataReader objects.
4	❖ DataAdapter	✓ It populates a DataSet and resolves updates with the data source. The base class for all DataAdapter objects is the DbDataAdapter class.

Data Provider for SQL Server

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Class	Description
➢ SqlConnection	✓ It is used to create SQL Server connection.
➢ SqlCommand	✓ It is used to execute database queries.
➢ SqlDataAdapter	✓ It represents a set of data commands and a database connection that are used to fill the DataSet.
➢ SqlDataReader	✓ It is used to read rows from a SQL Server database.
➢ SqlException	✓ This class is used to throw SQL exceptions. It throws an exception when an error is occurred.