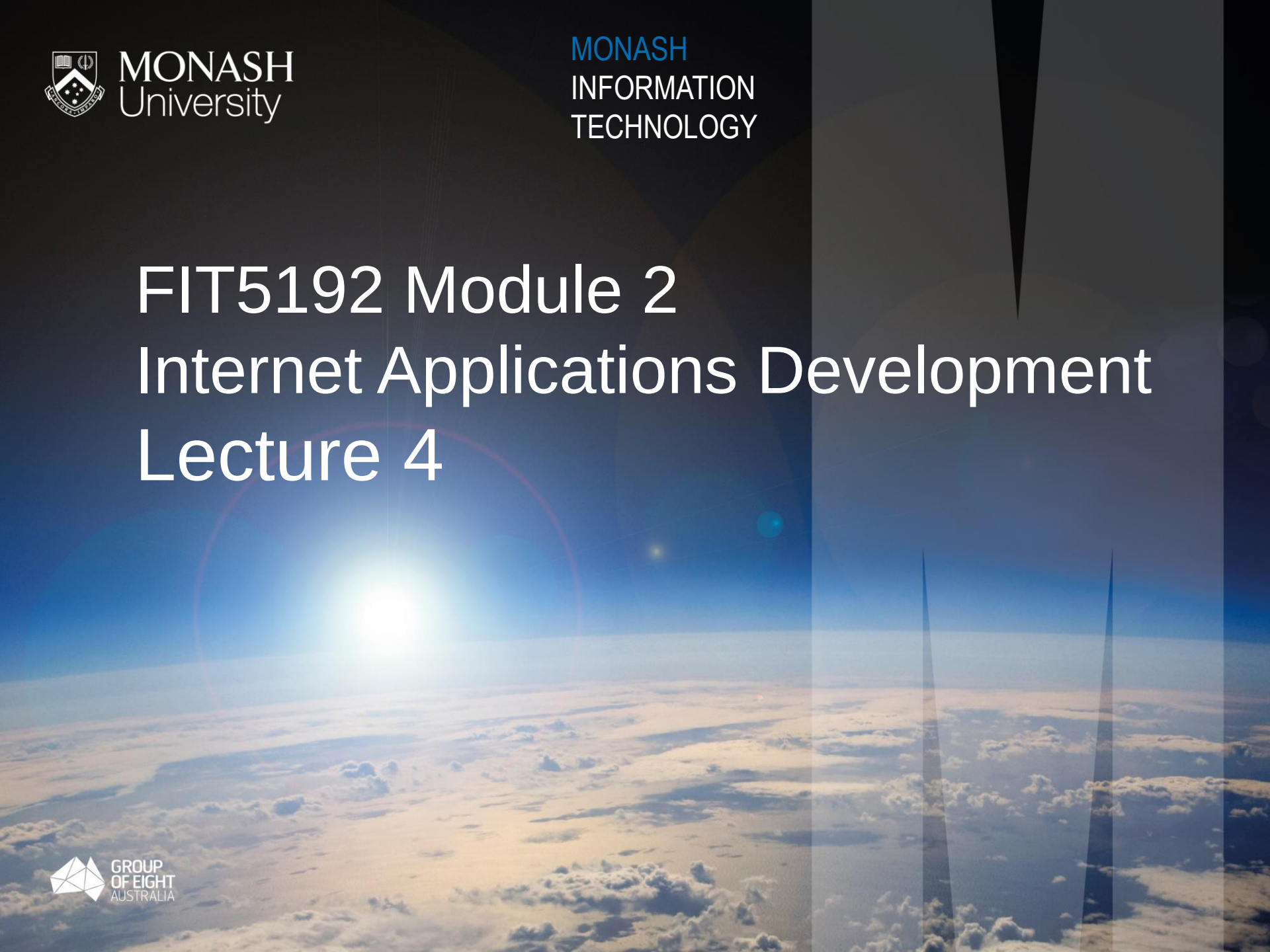
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INFORMATION
TECHNOLOGY
FIT5192 Module 2
Internet Applications Development
Lecture 4
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OF EIGHT
AUSTRALIA

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Lecture Overview

1. Introduction
2. HTML forms limitations
3. ASP.NET Server Controls
4. Event driven programming and POSTBACK
5. More ASP.NET Server Controls

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This unit focuses on:

ASP.NET using C#

ASP has progressed through the years, this unit will use:

- Form based ASP.NET and
- MVC based ASP.NET

We will generally not be using web pages with classic ASP

HTML and CSS will be used when required (see background information)

JavaScript will be used for some components later in the unit

Classic ASP example

```
<%@ Page Language="C#" %>
<html>
  <head>
    <title>Classic ASP</title>
  </head>
  <body>
    Today's date is
<% Response.Write(DateTime.Today.ToString("dd/MM/yyyy")); %>
  </body>
</html>
```

HTML forms limitations

Simple HTML form submission

```
<html>
  <head>
    <title>test</title>
  </head>
  <body>
    <h1>A Simple HTML Form</h1>
    <form action="Webform2.aspx" method="post">
      Name: <input type="text" size="20" name="text1" value='test Data'/><br />
      <input type='hidden' name='__VIEWSTATE' id="__VIEWSTATE" value='' />
      <input type="submit" /><input type="reset" />
    </form>
  </body>
</html>
```

ASP page for processing HTML form (1)

```
<%@ Page Language="C#"   EnableEventValidation="False" %>
<script runat="server" >
void Page_Load()
{
      message1.Text = "You have entered the following name: "
        + text1.Text;
}
</script>
```

ASP page for processing HTML form (2)

```
<html>
<head runat="server">  <title>Webform2</title>
</head> <body>
<form runat="server">
     Please enter your name:
<asp:textbox id="text1" runat="server" columns="25" CssClass="txtBox"
/> <p />
<asp:Button id="MyButton" runat="server" CssClass="button"
       Text="Submit" />
   </form>
   <asp:label id="message1" runat="server" />
   <br />
</body> </html>
```

ASP .NET Server Controls

- Two broad categories:
  - HTML Server Controls
    - Server based representations of common HTML form elements, such as buttons, drop down lists or text boxes
  - Web Controls
    - Generally do not have direct HTML equivalent and provide a richer object model for formatting. They generally provide more events and more closely resemble Windows controls. These are controls such as Calendars, Validation or Data display controls.

ASP.NET Server Controls

ASP Server Control Categories

Standard

- Basic controls such as buttons, links, images, lists etc.

Validation

- Used to validate data input by a users.

Navigation

- navigation features, such as menues, to allow users to navigate around a web site.

Login

- provide a login mechanism for users to gain access to a site.

Data

- Provide access to data sources such as databases or XML files

Server Control Properties (part 1)

- AccessKey
  - setting of a key with which a control can be assessed in the client by pressing the associated letter
- BackColor/ ForeColor
  - Sets the background and text color of the control
- BorderColor/ BorderStyle/ BorderWidth
  - Sets border properties
- CssClass
  - class attribute in a stylesheet to be used with the control

Server Control Properties (part 2)

Enabled
: Allows user to interact with the the control. If Enabled="false" then user cannot change control's text

Font
: Sets font related properties

Height/ Width
: Sets height and width of control

TabIndex
: Sets order in which user can tab from control to control

ToolTip
: Sets up a tooltip which hovers over control

Visible
: Sets if control can be seen or not.

Standard ASP Server Controls (1)

Label

- Provides a way to display text, corresponds to HTML tag.

Button

- General purpose button, typically with an OnClick event handler.

DropDownList

- Drop down list box for selecting from a list of items

Hidden

- Hidden control access through code

ListBox

- Provides a scrollable list of items

Standard ASP Server Controls (2)

TextBox

Textbox with single or multiple lines

RadioButton

Single radio button, similar to checkbox, except you must handle deselect programmatically

CheckBox

Single checkbox

LinkButton

Corresponds to the HTML anchor tag for displaying a hyperlink

Table → An HTML table

TableRow → Row within a table

TableCell → Cell within a table

Standard ASP Server Controls (3)

Image

To display an image

Calendar

Display a calendar which can be accessed via code

ImageButton

To display a clickable image or implement an image map

AdRotator

Implements rotating banners

Panel

Corresponds to HTML tag

Adding code to controls

Properties of controls can be modified at run time

```
<script runat="server">
void Page_Load() {
Message1.Text="Mighty Mouse";
Message2.Text="Fly by Night Holidays";
}
</script>
```

__VIEWSTATE hidden field

- ASP field for maintaining the state of the form
- This is used to overcome some of the limitations of the stateless HTTP protocol

Event driven programming and POSTBACK

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Event driven programming

A programming paradigm where the programme responds to events

In ASP.NET Form based applications, the events are processed at the server

In browser based Javascript the user events are processed at the client in the browser

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Javascript example (client side)

```
<html>
  <head>
    <title>Javascript example</title>
  </head>
  <body>
    <form>
      <input type="button" value="Click Me"
        onclick= "alert('What an event!')">
    </form>
  </body>
</html>
```

ASP event example (body)

```
……..
<body>
<form id="form1" runat="server">
<asp:button id="button1" text="Click here" runat="server"
onclick="MyEventHandler"/>
</form>
</body>
</html>
```

ASP event example (head)

```
<%@ Page Language="C#" %>
<html>
<head runat="server">
<title>ButtonClickHandler</title>
  <script runat="server">
void MyEventHandler(object sender,      EventArgs e)
    {
      button1.Text="You clicked me!";// some  ASP.NET code
    }
  </script>
</head>
.....
```

ASP.NET has a reduced set of event handlers

onload - control has loaded into the window or frame (Not to be confused with Page_Load() which happens when the whole page has loaded)

onunload - control has been unloaded from the window or frame

onclick - a mouse button is clicked over an <asp:button> control

oninit - web page is first initialised

onprerender - just before the control is rendered

selectindexchanged and checkchanged - the contents of a control have been altered, such as a checkbox clicked or a list item selected. Only applies to list items

Page Load (in head)

```
<script runat="server" >

void Page_Load() {
        message.Text = cityList.SelectedValue;
}

</script>
```

Page Load and POSTBACK (in head))

```
……..
<script runat="server" >
    void Page_Load() {

if(Page.IsPostBack) {
      message.Text = cityList.SelectedValue;
}

}
</script>
…….
```

More ASP.NET Server Controls

ASP Textbox

Equivalent to HTML:

- text box form control
- textarea form control
- and text password control

Specifying appearance through style sheets

- Linking in a style sheet:

  <link href="**Style1.css**" rel="stylesheet" type="text/css" />

- Specifying style class

  <asp:Button id="MyButton" runat="server" CssClass="button"
  Text="Submit" />

Style sheet content

```
body
{
    font-family:Arial;
}
.button
{
    background-color:#0080C0;
    color:White;
    border-width:4;
    border-style:ridge;
    font-size:16;
    font-weight:bold;
    height:50;
    width:200;
}

.txtBox
{
    font-family:Arial;
}
```

ASP Panel

Used as a container of other controls:

```
<asp:Panel ID="pnl1" runat="server" CssClass="panel1">
Please enter your name: <asp:textbox id="text1" runat="server" columns="25" CssClass="txtBox" />
</asp:Panel>
```

Can be used for controlling panel area layout and appearance through style sheets

Or enabling and disabling visibility

```
pnl1.Visible = false;
```

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Additional ASP controls

- listbox
- radiobutton and radiobuttonlist
- checkbox and checkboxlist
- linkbutton and hyperlink
- image and imagebutton
- Calendar

More info at:

http://msdn.microsoft.com/en-us/library/system.web.ui.webcontrols.aspx

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Summary

1. Introduction
2. HTML forms limitations
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What you will do in the Studio

1. Complete topic 4 exercises
   - Complete Tutorial 4.2 (ASP.NET Server Controls) on moodle
   - Complete Tutorial 4.3 (Event driven programming and POSTBACK) on moodle
   - Complete Tutorial 4.4 (More ASP.NET Server Controls) on moodle

2. Work through topic 5.1 (C# basics: data types and operators) and 5.2 (C# Language Constructs) on moodle

3. Try the examples in your visual studio environment - Cut and paste the example into a new file (html or aspx) and then run on VS2015/2017

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Thanks and See you in the Studio!