



The University of Fiji

School of Science and Technology



Department of Computer Science/ Information Technology

ITC314

Web Site Design and Programming

Semester I, 2014

FINAL EXAMINATION QUESTION PAPER

Time Allowed: 3 Hours [10 Minutes Extra Allowed For Reading the Paper]
Weighting: 50%
Total Marks: 100 marks.

Part I:

Multiple Choice	-	20 marks
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Part II:

Short Answer Question 1	-	10 marks
Short Answer Question 2	-	10 marks
Short Answer Question 3	-	10 marks
Short Answer Question 4	-	10 marks
Short Answer Question 5	-	10 marks
Short Answer Question 6	-	10 marks
Short Answer Question 7	-	20 marks

Total	100 marks
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Instructions

- Show your answers clearly in each question to gain maximum marks.
- You may ask for extra sheets from the supervisors if the need arises.
- Do not forget to write your name and ID number on all the extra sheet(s) attached.
- Programmable calculators are not allowed.
- There are total 9 pages.

Section A: Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. What the Web server returns to the user is called the _____.
 - a. request fulfillment
 - b. object
 - c. response
 - d. return
2. You can group selectors so they share the same style declarations by separating each selector with a _____.
 - a. comma
 - b. colon
 - c. semicolon
 - d. forward slash
3. A(n) _____ is an object that has been created from an existing class.
 - a. instance
 - b. variable
 - c. class
 - d. expansion
4. A(n) _____ is a literal value or variable or a combination of literal values, variables, operators, and other expressions that can be evaluated by the C# interpreter to produce a result.
 - a. calculation
 - b. expression
 - c. composition
 - d. statement
5. The _____ is used to execute specific programming code if the evaluation of a conditional expression returns a value of true.
 - a. flow statement
 - b. for statement
 - c. switch statement
 - d. if statement
6. The _____ method sends form data as a transmission separate from the URL specified by the action attribute.
 - a. GET
 - b. POST
 - c. PUSH
 - d. PULL
7. A(n) _____ is a specific circumstance that is monitored by the browser and that your program can respond to in some way.
 - a. handle
 - b. target
 - c. source
 - d. event
8. The _____ control ensures that a value is entered into a specified field.
 - a. RequiredValidator
 - b. FieldValidator
 - c. RequiredField
 - d. RequiredFieldValidator
9. You can change the color of the validation failure message with the _____ property.
 - a. ForeColor
 - b. Color
 - c. FrontColor
 - d. TopColor
10. A _____ is a field that contains a unique identifier for each record in a primary table.
 - a. primary key
 - b. secondary key
 - c. primary field
 - d. primitive key
11. _____ identifiers must begin with a letter, underscore (_), number sign (#), or at sign (@), and subsequent characters are restricted to letters, numbers, underscores, number signs, or at signs.
 - a. Standard
 - b. Regular
 - c. Special
 - d. Proprietary

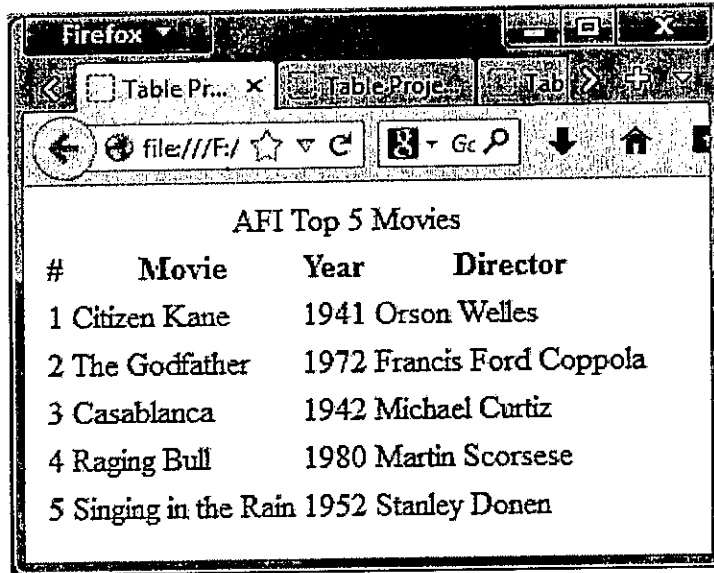
12. Whenever you use the ____ method, the content of each variable in a SqlDataReader object changes to reflect the contents of the record at the current location of the cursor.
- Fetch()
 - Read()
 - Pull()
 - Ingest()
13. You use the ____ statement with the ExecuteNonQuery() method to create a new database.
- CREATE TABLE
 - CREATE INDEX
 - CREATE DATA
 - CREATE DATABASE
14. To delete records in a table, you use the DELETE and ____ keywords with the ExecuteNonQuery() function.
- WHEN
 - WITH
 - WHERE
 - SUCH
15. Post back maintains view state by assigning the form values to a hidden form field named ____.
- __VIEWSTATE
 - __VIEW
 - __STATE
 - __STATEVIEW
16. The ____ attribute is required to identify the script section as an ASP.NET program.
- readat="server"
 - execute="server"
 - hostat="server"
 - runat="server"
17. The ____ property in the ListBox control determines whether multiple items can be selected in a selection list.
- Mode
 - Selection
 - SelectionMode
 - SelectMode
18. The String class contains a property, the ____ property, which returns the number of characters in a string.
- Size
 - Length
 - Count
 - ContentLength
19. A set of named constants is called an ____.
- enumerator list
 - elaborator list
 - exception list
 - assertion list
20. The ____ contains statements that execute when the value returned by the switch statement expression does not match a case label.
- otherwise label
 - else label
 - case label
 - default label

Section B: Short Answer Questions

Question 1

- The 3.2 release of HTML in 1997 included the table elements for the purpose of organizing tabular data in rows and columns.
- The table below shows the top five movies from the American Film Institute (AFI). Write the appropriate HTML codes that will render the table in Figure 1 below.

Write only the codes for the first three lines. The first line, AFI Top 5 Movies, describes the table and the third line is the first movie, Citizen Kane movie. (3)



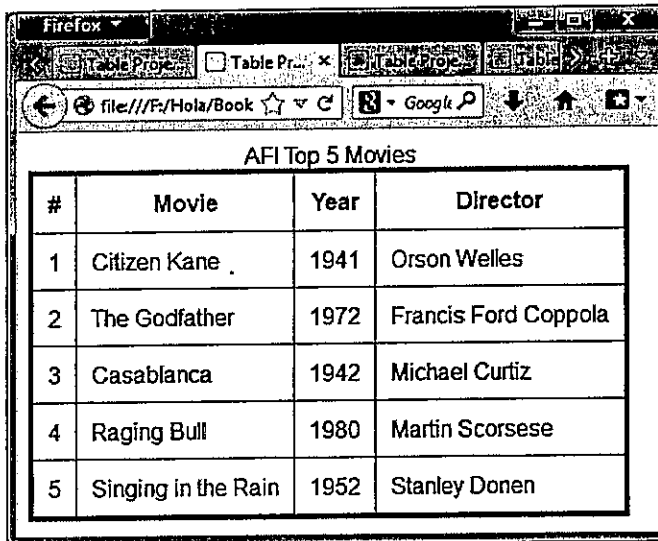
#	Movie	Year	Director
1	Citizen Kane	1941	Orson Welles
2	The Godfather	1972	Francis Ford Coppola
3	Casablanca	1942	Michael Curtiz
4	Raging Bull	1980	Martin Scorsese
5	Singing in the Rain	1952	Stanley Donen

Figure 1. AFI Top 5 movies

ii. Write the appropriate style rule that renders the display as in Figure 2 below. The style rule transforms Figure 1 (in part (a)) to figure 2 below by adding the following properties:

- All borders collapse.
- Font family: arial
- Table border: solid 4px blue
- Table cell border: solid 1px black
- Table cells padding: 10 pixels

Do not include `<style type = "text /css"> ... </style>` element. (3)



#	Movie	Year	Director
1	Citizen Kane	1941	Orson Welles
2	The Godfather	1972	Francis Ford Coppola
3	Casablanca	1942	Michael Curtiz
4	Raging Bull	1980	Martin Scorsese
5	Singing in the Rain	1952	Stanley Donen

Figure 2. Formatted Table

- b. The ability to freely combine graphics, text, and color into page-type layouts is one feature that makes the Web so attractive and popular, but it also can be the undoing of many Web sites.
- You learned of four graphics file formats in this course. They are GIF, JPG, and PNG. What does each acronym mean? (1)
 - What are Interlacing and Progressive display? (1)
 - What are dithering and banding? (1)
 - List two important guidelines when using images or graphics on your Web page. (1)

Question 2

This section is dedicated to ASP.NET.

- In creating Web applications in ASP.NET, there are three ways in which you can integrate programming codes with your HTML codes. List these three methods. (1.5)
- Figures 3, 4 and 5 below shows the result in running a simple Web application called Check Box. This application was discussed in class. This Web application has three server controls: a check box, a label and a button. User click to check or uncheck the check box and then click the submit button. By clicking the submit button, a message will be displayed in the Label as in Figures 4 (checkbox being checked) and 5 (checkbox being unchecked). Use these figures and later information to answer the questions that follow.

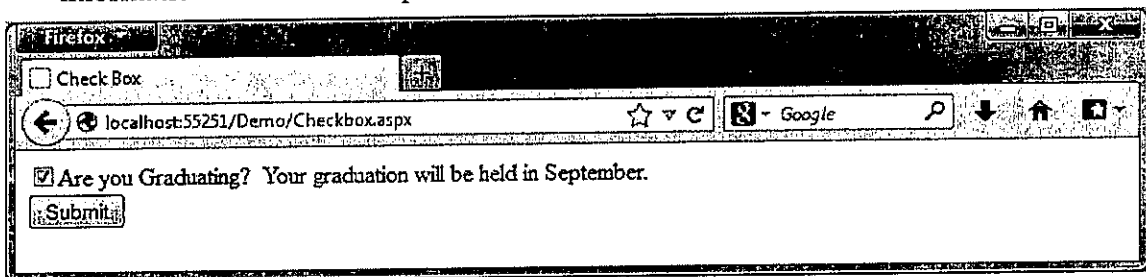


Figure 3. Checked Check Box

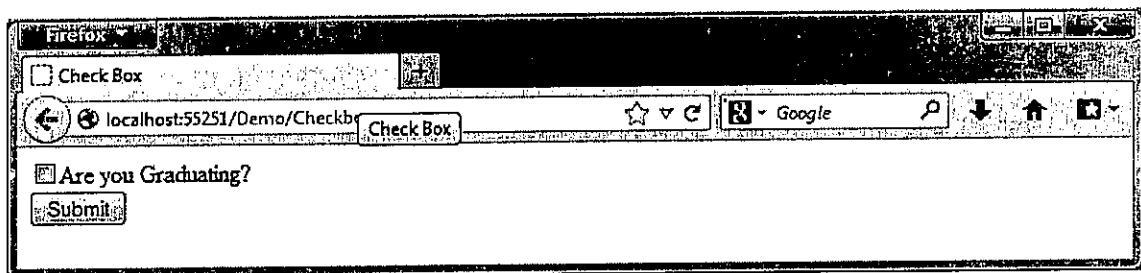


Figure 4. Unchecked Check Box

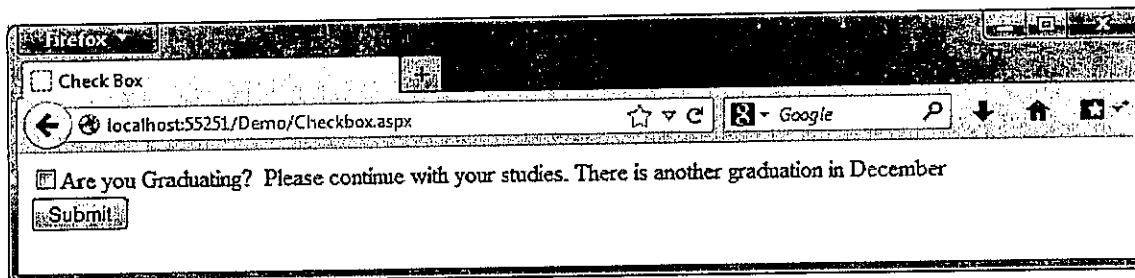


Figure 5. Check Box with a Label

- i. Figure 6 is the source view of the Web form for the Check Box application with the body section being hidden. Write the codes that appear in a new Web form body section, before you even add any content. (2)

```
<%@ Page Language="C#" AutoEventWireup="true" CodeFile="Default.aspx.cs" Inherits="_Default" %>
<html xmlns="http://www.w3.org/1999/xhtml">
<head runat="server">
<title></title>
</head>
<body>...</body>
</html>
```

Figure 6. Default.aspx

- ii. The **general syntax** of a Web server control is given below as well as an example of Text Box server control. Every time you add a new server control, it comes with two important properties or attributes: ID and Runat. Other attributes can be added as required. (3)

General Syntax:

```
<asp:TypeOfControl ID="ControlName" Runat="Server" />
```

Example:

```
<asp:TextBox ID="TextBox1" runat="server"></asp:TextBox>
```

Write the ASP.NET/HTML codes to complete the body section of the Web form for the Checkbox application.

[Hints: Study Figures 4 to 6 in order to identify additional properties or attributes you need to add to each control. In each server control case you only need to add one more property or attribute. For the Label server controls, the color of the text displayed is red. You set the color by adding and setting the property or attribute called ForeColor. Also consider adding space and line break.]

- iii. Figure 7 below shows the content of **Checkbox.aspx.cs**, the code behind the file for the Check Box application. Write the appropriate C# codes that will complete the button click event handler, **Button1_Click**. Remember that clicking on the button, a message will be displayed in the Label depending if the check box is checked or not. (3.5)

```

public partial class _Default : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
    {
    }

    protected void Button1_Click(object sender, EventArgs e)
    {
    }
}

```

Figure 7. Default.cs

Question 3

1. What' is the sequence in which ASP.NET events are processed ? (1)
2. Administrator wants to make a security check that no one has tampered with ViewState, how can he ensure this? (1)
3. How many types of validation controls are provided by ASP.NET? (2)
4. How can you enable automatic paging in DataGrid? (1)
5. What is the difference between Authentication and authorization? What is impersonation in ASP.NET? (2)
6. What are the various ways of authentication techniques in ASP.NET? How does authorization work in ASP.NET? (3)

Question 4

1. What's difference between Datagrid, Datalist and repeater? How to decide on the design consideration to take a Datagrid, datalist or repeater? (3)
2. How can I show the entire validation error message in a message box on the client side? (1)
3. Explain the differences between Server-side and Client-side code? (1)
4. Explain the following lines of codes below. Explain in terms of their validation rule. (1)

```

<asp:CustomValidator id="CustomValidator1" runat="server"
ErrorMessage="Number not divisible by Zero" ControlToValidate="txtNumber"
OnServerValidate="ServerValidate" ClientValidationFunction="CheckZero" />
<br> Input: <asp:TextBox id="txtNumber" runat="server" />
<script language="javascript">
<!--
function CheckZero(source, args)
{

```

```

int val = parseInt(args.Value, 10);
if (value==0)
{
args.IsValid = false;
}
else {
args.IsValid = true;
}
}
// -->
</script>

```

5. Explain each of the HTML tags used below: (2)

```

<html>
<body>
<h>Header - This is heading 1</h>
<p>Paragraph - This is my New Website</p>
</body>
</html>

```

6. What is HTML? Is HTML Coding important for making a website? (2)

Question 5

1. What does the "EnableViewState" property do? Why would I want it on or off? (1)
2. What is the namespace in which .NET has the data functionality classes? (1)
3. What is difference between dataset and datareader? (2)
4. What is the use of command objects and what are the methods provided by the command object? (2)
5. How can we connect to Microsoft Access, SQL, Foxpro, Oracle etc. to our web pages? (1)
6. What are the different ways of moving data/ databases between servers and databases in SQL Server? (1)
7. The rich data controls are quite a bit different from the simple list controls—for one thing, they are designed exclusively for data binding. What does the rich data controls includes. (2)

Question 6

1. Given are the sets of codes for running a ASP.net query from a database. Answer the questions that follow the codes.
 - 1) protected void Page_Load(object sender, EventArgs e)
 - 2) {
 - 3) // Define the connection string

```

4) string selectSQL = "SELECT ProductID, ProductName, UnitPrice FROM
   Products";
5) SqlConnection con = new SqlConnection(connectionString);
6) SqlCommand cmd = new SqlCommand(selectSQL, con);
7) SqlDataAdapter adapter = new SqlDataAdapter(cmd);
8) DataSet ds = new DataSet();
9) adapter.Fill(ds, "Products");
10) GridView1.DataSource = ds;
11) GridView1.DataBind();
12)}

```

- i. Define the connection string in line 3 that will connect to database Northwind so that it runs the query in line 4 and name the string as *connectionString*. (1)
- ii. What will lines 4 – 9 do when the following lines are executed? (2)

2.

```
<asp:BoundField DataField="ProductID" HeaderText="ID" />
```

This tag demonstrates how you can change the header text at the top of a column from ProductID to just ID.

The following tag gives a complete GridView declaration with explicit columns:

```

<asp:GridView ID="GridView1" runat="server" DataSourceID="sourceProducts"
AutoGenerateColumns="False">
<Columns>
<asp:BoundField DataField="ProductID" HeaderText="ID" />
<asp:BoundField DataField="ProductName" HeaderText="Product Name" />
<asp:BoundField DataField="UnitPrice" HeaderText="Price" />
</Columns>
</asp:GridView>

```

List down what are some of the advantages of explicitly defining columns. (2)

3. Draw the output for the following line of codes. (3)

```

protected void Page_Load(Object sender, EventArgs e)
{
    List<string> fruit = new List<string>();
    fruit.Add("Kiwi");
    fruit.Add("Pear");
    fruit.Add("Mango");
    fruit.Add("Blueberry");
    fruit.Add("Apricot");
    fruit.Add("Banana");
    fruit.Add("Peach");
    fruit.Add("Plum");

```

```
// Define the binding for the list controls.
```

```

MyListBox.DataSource = fruit;
MyDropDownListBox.DataSource = fruit;
MyHtmlSelect.DataSource = fruit;
MyCheckBoxList.DataSource = fruit;
MyRadioButtonList.DataSource = fruit;

```

```
// Activate the binding.
```

```

        this.DataBind();
    }

```

4. In most ASP.NET applications, you'll need to use a database for some tasks. What are some basic examples of data at work in a web application? (2)

Question 7

1. What does the following CSS do?

```
P {font-family: Verdana, Arial, Helvetica;} (1)
```

2. User controls look pretty much the same as ASP.NET web forms. Like web forms, they are composed of a markup portion with HTML and control tags (the .ascx file) and can optionally use a code-behind file with event-handling logic. List down the differences between user controls and web pages? (2)

3. As a seasoned developer, you probably realize users will make mistakes. What's particularly daunting is the range of possible mistakes that users can make. List down some of the examples of these mistakes. (2)

4. When using automatic validation, the user receives a normal page and begins to fill in the input controls. When finished, the user clicks a button to submit the page. Every button has a CausesValidation property, which can be set to true or false. What happens when the user clicks the button depends on the value of the CausesValidation property. (2)

5. Write down the regular expressions to validate some of the contents provided in the table given below. Also provide each description for the regular expression given. (9)

Content	Regular Expression	Description
E-mail address		
Password		
Specific-length password		
Advanced password		
Another advanced password		
Limited-length field		

6. Most .NET languages support structured exception handling. Essentially, when an error occurs in your application, the .NET Framework creates an exception object that represents the problem. You can catch this object using an exception handler. If you fail to use an exception handler, your code will be aborted, and the user will see an error page. Structured exception handling provides several key features, list some of the features. (2)

7. Explain where and what these lines of code is doing in ASP.net? (2)

```

EventLoglog=newEventLog();
log.Source = "DivisionPage";
log.WriteEntry(err.Message, EventLogEntryType.Error);

```

The EndII