



Undergraduate Programme
Department of Computer Science And Mathematics
Semester 1 Year 2018
FINAL COURSE EXAMINATION PAPER

ITC 314 – WEB DESIGN & PROGRAMMING

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with a pen) and **180 minutes (3 Hours) to complete this paper**.
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask the supervisor. Write your name, course code and student identification number in the answer booklet and on the attendance sheet.
5. **This Final Course Examination Paper is worth 100 marks contributes 50% of the total course assessments.**
6. This paper contains two (2) sections A and B. All are compulsory.
7. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
8. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1-3	Short Answer Questions	80	144 minutes
B	2	Long Answer Question	20	36 minutes
		TOTAL	100	180 Minutes

All questions in this section are compulsory.

Question 1: Introduction to ASP.NET & C#**[40 Marks]**

- A. Define these acronyms: MVC, IIS, ASP, HTTP, VWD, and IDE. **[1.5]**
- B. Referring to the image provided below explain the process of interaction between a client and server in term of it collaborating with a website. **[1]**

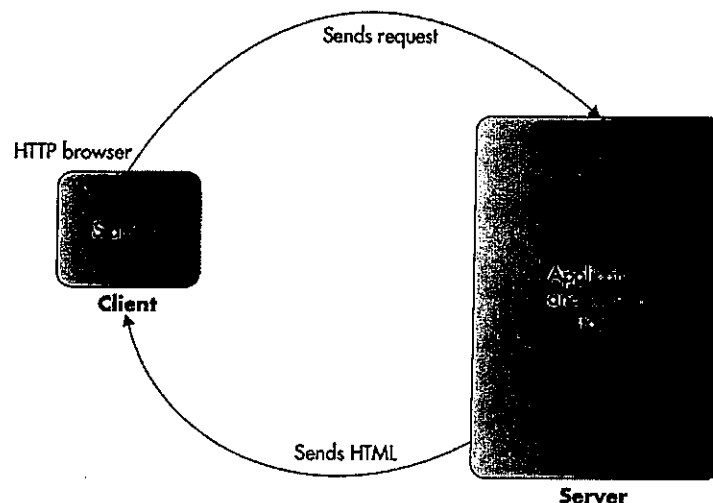


Figure 1: Client vs Server

- C. Name and describe any five commonly used HTML elements. You will have to give its actual term and explain why people use it in their markup. **[2.5]**
- D. Describe the term *private* and *public* that is used in the C# program with appropriate examples. **[1]**
- E. Website development experts states that there are a vast difference between HTML and XHTML. Explain how they are closely related and how can one differentiate from the other. **[2]**
- F. Suppose you have dragged and dropped a button control on your design pane. How will you change its ID from Button1 to submitButton and how will you change its text from Button to Submit? **[1]**
- G. Describe the types of files that can be added to a VWD's content. Give examples of at least four different file types. **[2]**
- H. Suppose you are an expert in developing ASP.NET based websites and you have been in this particular field for more than a few years now. There is a student who would like to learn from

you. Apart from the programming knowledge what things would you want to advise him/her before they start developing a fully functional website? [2]

- I. Differentiate between design view, source view, and split view. [1.5]
- J. What is the difference between In-line Code and Code Behind? What are the files associated with each of them? [2]
- K. As you already know by now C# is an object-oriented language. List and describe any four objects you have used while designing your website. It can be said that objects are known as controls which are part of the toolbox in your VWD. [2]
- L. Margins and padding have different effects on an element. If you were going to stretch the "box" of an element, which would you use? [1]
- M. What do you understand by the term variable? How would someone declare a variable? Is a variable different from a constant? If so, explain how? [2]
- N. If you were to link your website to a secondary page or an external website, how would you do it? Describe in detail. [1]
- O. It is said that Naming Conventions play an important role in all programming languages. They ensure that names are declared properly and are case sensitive. List and describe the three naming conventions you know of with appropriate examples. [1.5]
- P. Write a *for loop* to get the output in the Textbox as "50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, End of Loop". [2]
- Q. Write a *foreach loop* to get the output in the textbox as "Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday". The entire output should be represented one after the other. [2]
- R. Write a *while loop* to get the output in the Textbox as "-30_-28_-26_-24_-22_-20_End of Loop". [2]
- S. Write a *do while loop* to get the output in the Textbox as "0:10:20:30:40:50:60:70:80:90:End of Loop". [2]
- T. Write series of classes that combines three separate strings together "BLACK", " ", and "LIGHTENING" and shows it in the output textbox as "BLACK LIGHTENING". [2]
- U. Write an if condition that will compare two integers entered in two separate textbox stating which is greater and which is lower when executed. You refer to the below image for your understanding. [2]

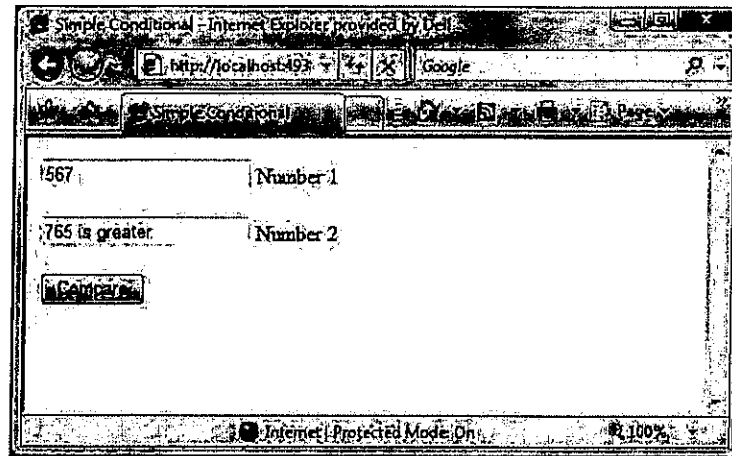


Figure 2: Conditional Comparison

- V. What is the purpose of having an Array? What are some of its methods? [1]
- W. A class is an important factor of an application and making a simple *C# Class* consists six basic things, list them down. [3]

Question 2: Forms and Controls

[25 Marks]

- A. Describe some of the HTML Web Controls and identify how they are related or similar to the ASP.NET Controls. [1.5]
- B. When working with any web control users can go to its properties and find some important categories in the properties section. List down at least four out of the five important categories found in the properties section and for each explain in detail what is its purpose. [2]
- C. What is a ToolTip feature and how would you implement it on the website? [1]
- D. A hyperlink control in the ASP.NET web application has five target properties, list and describe at least four of the five target properties. [2]
- E. What is the purpose of the AdRotator Web Server Control in ASP.NET? [1]
- F. For each of the following, describe what it does in ASP.NET based websites and for each give appropriate examples. [3]
- I. RequiredFieldValidator,
 - II. RangeValidator,
 - III. RegularExpressionValidator,
 - IV. CompareValidator,
 - V. CustomValidator
 - VI. ValidationSummary
- G. What is *Intellisense* and how it helps people who use Visual Studios? [1]

- H. Assume that users should enter numbers in the five textboxes and in the output textbox it should add the total by adding the values of the five textboxes. When the user enters anything else apart from the numbers an error or text message should be shown in the output textbox. Write the entire code that is required to make the program work. [3]
- I. What are the differences between user controls and web pages? [1]
- J. 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. [1]
- K. Write the series of codes that will show a picture named "MoonLight.png" to an Image control called ImageView. [1]
- L. List down the four important forms of displaying data using web controls. [2]
- M. What are the three different architectural components of ASP.NET MVC? [1.5]
- N. When you drag and drop a button control to design view and go to the events in properties section, you will come across these following events and for each describe what it does: [2]
- Click
 - Command
 - DataBinding
 - Disposed
 - Init
 - Load
 - PreRender
 - Unload
- O. Explain why is it necessary for a programmer or developer to implement some sort of validation controls in the website? [1]
- P. What is the difference between client-side validation and server-side validation? [1]

Question 3: ASP.NET and Databases

[15 Marks]

- A. Assume you are running a football club and you wish to keep track of all your important players' details in a SQL database. Currently, you are keeping the data in an Excel file. Refer to the table below to answer the questions that follow.

ID	FirstName	LastName	Age	PhoneContact	EmailAddress
1	Paul	Pogba	25	9999234	paulpogba@gmail.com
2	Alexis	Sanchez	29	6667772	alexissanchaez@gmail.com

3	Marcus	Rashford	32	7767677	marcusrashford@gmail.com
4	Anthony	Martial	23	9987738	anthonymartial@gmail.com
5	Juan	Mata	31	6662729	juanmata@gmail.com

- I. Write the SQL query that will allow the manager to *CREATE* a table named "Players" and have the fields or field names as shown in the table above. [1]
 - II. Write the SQL query that will make the field "ID" a *PRIMARY KEY* and also an *IDENTITY* which is (1, 1). [2]
 - III. Write the SQL query that will allow the manager to *INSERT* a new record; you can use FirstName as 'David', LastName as 'DeGea', Age as '26', PhoneContact as '6673663', and EmailAddress as 'daviddegea@gmail.com'. [2]
 - IV. Write the SQL query that will allow users to *SELECT* and show the details of the Player whose Id is 4. [1]
 - V. Write the SQL query that will allow users to use *ORDER BY* and see all the age in *DESC* order. [1]
 - VI. Write the SQL query that will allow users to *UPDATE* the details of ID 3 where his age should be 22 rather than 32. [1]
 - VII. Write the SQL query that will allow users to add a new field using the *ALTER* command, the name of the field is "MiddleName" and it should be positioned after FirstName. [1]
 - VIII. Write the SQL query that will enable the users to *DELETE* a record where the Player ID is 2. [1]
 - IX. Write the SQL query that will allow the users to *DELETE* the entire records in the table. [1]
 - X. Write the SQL query that will allow the users to *DROP* the table called "Players" to make it seem that it didn't even exist. [1]
- B. 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 include? [1]
- C. Explain what you understand by the term data-binding and also give an example of a control that allows users to bind data using that particular control. [2]

SECTION B: Long Answer Question**20 Marks**

All questions in this section are compulsory

1. Suppose you are to create a registration site for university students which will have numerous fields and whatever entries the students make should be sent to the database for records. Refer to the below figure, you are to write down the insert functionality of the website that will be the entire button code as soon as students fill out all of their information and clicks on submit button. [10]

The University of Fiji On-line Registration Site

Fill out the details in the respective fields than proceed by pressing the submit button.

Section A: Personal Details

First Name:	Sanjay	Middle Name:	Kumar
Last Name:	Singh	Date of Birth:	18/09/1987
Select Country:	New Zealand	Select Town:	Auckland
Gender:	☒ Male ☐ Female	Postal Address:	P.O.Box, 1234, Auckland
Street Address:	123 Johnson Road	Marital Status:	Married
Phone Number:	88884455	Mobile Number:	88888877
Email Address:	sks@hotmail.com		

Section B: Medical Record

Name of Next of Kin:	Rama Singh Kumar	Address:	456 Hospital Road
Phone Number:	88888899	Relationship:	Father
Do you suffer from any medical condition:	☒ Yes ☐ No		
If yes than please give details:	Hearing Problem		

Section C: Programme and Majors

Enter the choices 1st, 2nd and 3rd below.

1st Choice:	BIT	2nd Choice:	BCom
3rd Choice:	MBBS		

☒ I verify that the information provided by me is correct.

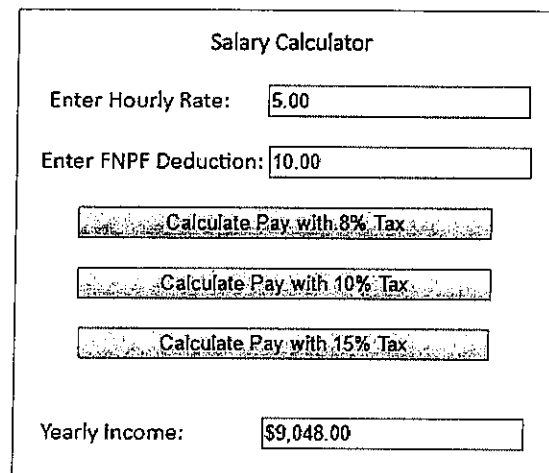
Figure 3: Registration System

2. The below figure is created in ASP.Net, you are also required to write down the series of codes for a website that will show the output as shown in the below figure. You are required to write codes for three separate classes, one for 8% tax calculation, the other for 10% tax calculation, and also for 15% tax calculation and each class will have its own calculation method.

The users are required to enter hourly rate and weekly FNPF deduction and depending on the TAX type they will get the total amount returned from the two classes.

Hours per week and tax amount will be constants and declared on both the classes for calculation. You may assume that hours per week = 40. [10]

Note: you have to use the data type as double.



The image shows a graphical user interface for a 'Salary Calculator'. It has a title bar 'Salary Calculator'. Below the title, there are two input fields: 'Enter Hourly Rate:' with the value '5.00' and 'Enter FNPF Deduction:' with the value '10.00'. Below these are three buttons: 'Calculate Pay with 8% Tax', 'Calculate Pay with 10% Tax', and 'Calculate Pay with 15% Tax'. At the bottom, there is a label 'Yearly Income:' followed by a text box containing the value '\$9,048.00'.

Figure 4: Salary Calculator

THE END