



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : DOT NET PROGRAMMING
COURSE CODE : DAT 20903
PROGRAMME : 2 DAT
EXAMINATION DATE : JUNE 2014
DURATION : 2 ½ HOURS
INSTRUCTIONS : A) ANSWER ALL QUESTIONS
B) ANSWER **THREE (3)**
QUESTIONS

THIS QUESTION PAPER CONSISTS OF TWELVE (12) PAGES

SECTION A

Q1 .NET provides various types of applications. Building application using Visual Studio .NET Integrated Developer Environment (IDE) can accelerate applications or systems development on the .NET Framework.

(a) Write the extension for a windows application built using Visual Basic.NET.
(1 mark)

(b) Write the extension for the web application code-behind built using Visual Basic language.
(1 mark)

(c) Explain how the user can open the code template for handling an event for a control using Visual Basic.NET's Code Designer when building the windows application.
(2 marks)

(d) Explain **THREE (3)** types of Server Controls in ASP.NET.
(3 marks)

(e) Show the syntax for creating a web server control.
(3 marks)

Q2 .NET Framework is a common environment for building, deploying, and running Web Services and Web Applications.

(a) Give the component in .NET Framework that manages the languages compatibility by compiling to a second platform-neutral language.
(1 mark)

(b) Give **TWO (2)** main components of the .NET framework.
(2 marks)

(c) Produce an ASP code that will display the server's current date and time.
(2 marks)

(d) Explain the purpose of Page Directive in an ASP.NET file.

(3 marks)

(e) Explains the purpose of Page.IsPostBack property which is being applied in ASP.NET web forms.

(2 marks)

(20 marks)

SECTION B

Q11 (a) List **TWO (2)** other examples of .NET applications besides windows application.

(2 marks)

(b) Describe the Event Driven Programming concept in .NET.

(2 marks)

(c) Distinguish between a ContentPlaceHolder control and a Content control associated with Master Page in ASP.NET.

(3 marks)

(d) Write the syntax for ContentPlaceHolder control.

(3 marks)

(e) Write the syntax for Content control.

(3 marks)

(f) The administrator of Pura Kencana Clinic wants to create a Visual Basic.NET (VB.NET) application that checks on patient's Body Mass Index (BMI). The BMI application must allow the employees to enter the patient's height and current weight. Then, it will calculate the BMI according to the information provided and display the resulted BMI and Status. The interface of the application is shown in Figure Q11.

Write a program in the code segment provided that will display BMI and Status after the user click on button 'Calculate' as shown in Figure Q11. The output should be based on the following information:

- User enter Weight in TextBox1 and Height in TextBox2
- Formula for BMI = Weight / Height (m) x Height (m)
- Data type for Weight, Height and BMI is Double
- Application displays resulted **BMI** in TextBox3 and **Status** in TextBox4
- Status depends on:
 - Underweight** : BMI <= 18
 - Ideal** : BMI >= 18.01 and BMI <= 23
 - Overweight** : BMI >= 23.01 and BMI <= 29.9
 - Obesity** : BMI >= 30

(7 marks)

```

Private Sub Button1_Click(...)Handles Button1.Click
_____
_____
_____
_____
End Sub
    
```

Q12 (a) Describe the term ASP.NET.

(2 marks)

(b) Explain on how the ASP.NET works or interact with client’s browser and the server.

(4 marks)

(c) Describe the term Method.

(2 marks)

(d) Write a code example for a Method in Visual Basic.

(3 marks)

(e) Explain the purpose of namespace System.Web.UI in ASP.NET web form.

(3 marks)

(f) The administrator of Pura Kencana Clinic is being instructed to expand the usage of the BMI Calculator application that was being developed as windows application to a web based concept. Users are required to register, then Log In to use the calculator. The Log In page before entering the BMI Calculator will look like Figure Q12.

Produce a program in Visual Basic language for the Log In page. The users are required to enter their Username and Password. After clicking button ‘Log In’, they will be directed to page user.aspx provided that they have entered the correct Username and Password. Otherwise, direct them to page bmi.aspx. Refer the following additional information:

- The Connection String is already declared in the web.config file
- Type of database used is Microsoft SQL Server
- The database table that stored the registered user's log in data is in table Login
- User enter the Username in TextBox1 and Password in TextBox2
- The name of button 'Log In' is Button1
- Use the objects that have been instantiated as provided in the code segment
- Use properties CommandText to assign the SQL query
- Write the code starting from comment 'Start coding statement

(6 marks)

```

Partial Public Class bmi
    Inherits System.Web.UI.Page

    Protected Sub Button1_Click(...) Handles Button1.Click

    Dim SQLCon As New SqlConnection
    (ConfigurationManager.ConnectionStrings
    ("DOT_NETConnectionString1").ConnectionString)
    Dim SQLCmd As New SqlCommand
    Dim rd As SqlDataReader

    'Start coding statement

    _____
    _____
    _____
    _____

    'End of coding statement

End Sub

End Class
    
```

Q13 (a) List **THREE (3)** common form controls.

(3 marks)

(b) Explain the purpose of importing the namespace System.Data.SqlClient in ASP.NET web form.

(3 marks)

- (c) Two quizzes have been done by students DAT 20903 Sem 2 Session 2013/2014, but only one quiz will be chosen as the final mark. The lecturer of the subject would like to build an ASP.NET application with Visual Basic language that will help her manage 150 students data. She would like to build a page that displays as follows:
- i. All student's data with marks for Quiz 1 and Quiz 2 that will be retrieved from table Quiz in database DOTNET.
 - ii. A drop down list that displays a selection so that she will be able to choose whichever criteria that she decides (A).
 - iii. A drop down list for Bonus Mark (B). The Bonus Mark is intended to reward all the student based on their hardwork during lab sessions.

Once the value for Bonus Mark has been set, the value will be added to the chosen quiz. It will be applied to all students. For example in Figure Q13, after selecting 'Choose = The highest' and 'Bonus Mark=1' then clicking button 'Process', the Final Mark column shows the best quiz selected from each student and then added with 1. The processed information (Final Mark) has to be updated in table Quiz in the database as well so that after clicking button 'Process', the page will and display the updated list of students information.

Produce a program in Visual Basic language that enables the user to choose one of the quiz criteria (A) as well as how much bonus mark will be given (B). After selection, click button 'Process', and the Final Mark based on the selection will be updated in field Mark, table Quiz. The fields in the table are Name, Quiz1, Quiz2, Mark and ID. Refer Figure Q13 and the following information :

- The Connection String is already declared in the web.config file
- Type of database used is Microsoft SQL Server
- User choose **A** from DropDownList1 and **B** from DropDownList2
- The name of button 'Process' is Button1
- If 'Quiz 1' is chosen in **A** then mark from Quiz 1 will be selected, if 'Quiz 2' then mark from Quiz 2 will be selected but if criteria selected is 'The highest' then comparison between Quiz 1 and 2 should be conducted to select the best/highest mark from each student
- Bonus Mark from 1 to 5 in **B** will be added to the chosen criteria of quiz in **A**
- Use the objects that have been instantiated as provided in the code segment
- Use properties CommandText to assign the SQL query
- Write the code in Method Public Sub ProcessRecords() starting from comment 'Start coding statement'

(14 marks)

```

Partial Public Class _ProcessResult
    Inherits System.Web.UI.Page

    Dim SQLCon As New SqlConnection
    (ConfigurationManager.ConnectionStrings
    ("DOT_NETConnectionString1").ConnectionString)
    Dim SQLCmd As New SqlCommand

    Protected Sub Button1_Click(...) Handles Button1.Click
        SQLCmd.Connection = SQLCon
        SQLCon.Open( )

        ProcessRecords( )

        SQLCon.Close( )
        Response.Redirect("ProcessResult.aspx", False)
    End Sub

    Public Sub ProcessRecords( )

        Dim dt As New DataTable
        Dim ds As New DataSet
        Dim da As New SqlDataAdapter("Select * from QUIZ", SQLCon)
        Dim myrow As DataRow
        ds.Tables.Add(dt)
        da.Fill(dt)

        'Start coding statement
        _____
        _____
        _____
        _____

        'End coding statement

    End Sub

End Class

```

Q14 (a) Explain the purpose of ‘ runat="server" ’ attribute in an ASP.NET form.

(2 marks)

(b) Define the **TWO (2)** models for Web Forms pages.

(2 marks)

(c) Write **FOUR (4)** Objects in ADO.NET data provider for SQL Server Database.
(4 marks)

(d) Explain the usage of a Data Set.
(3 marks)

(e) Give **TWO (2)** advantages using Data Set.
(3 marks)

(f) Figure Q14 shows a registration form that a user has to fill in before log in to a web application. Users are required to fill in field Name and IC in the form. When submitting the form and those fields are empty, then a statement “Please Key In” will be displayed. For field IC, aside from validating that the field has been filled, the form will also validate the number of characters entered which is supposed to be 12 characters. Therefore, a method in Visual Basic language has to be constructed to perform this task. If field IC does not consist of 12 characters, then a statement “Please make sure your IC is correct” will be displayed.

Write the RequiredFieldValidator control and CustomValidator control along with the validation Method for field IC.

(6 marks)

Q15 (a) Describe the purpose of Exception Handling.
(2 marks)

(b) Write the syntax for Exception Handling in Visual Basic.NET.
(4 marks)

(c) Explain the purpose of a Module in a windows form.
(2 marks)

(d) Define the term Instantiation.
(2 marks)

- (e) Define the term Initialization.

(2 marks)

- (f) Write a code that declares, initializes and instantiates a SqlConnection object in Visual Basic language.

(3 marks)

Figure Q15 shows a code that will produce a Message Box that displays “Hello1 = Hello1”, but an exception occurred during debugging in which triggered by the line in the red box shown in the figure.

- (g) Explain on the problem occurred in Figure Q15.

(3 marks)

- (h) Modify the code in Figure Q15 in order to solve the problem.

(2 marks)

(60 marks)

- END OF QUESTION -

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CalculatorBMI

Please fill in your Weight & Height

Weight (kg) : 50

Height (cm) : 157

Calculate

Result

BMI : 20.28

Status : Your body status is ideal (normal)

FIGURE Q11

Your Trusted Source for Health Information

Login: BMI Calculator

Username senah

Password

Register Log In

Home BMI System current F.A.Q HEALTH PRODUCTS

FIGURE Q12

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The screenshot shows a web browser window with the URL localhost:63723/ProcessResult.aspx. The page header includes the UTHM logo and the text 'Universiti Tun Hussein Onn Malaysia Academics'. Below the header, the title is 'DAT 20903: DOT NET PROGRAMMING SEM 2 SESSION 2013/2014'. There are two dropdown menus: 'Choose : The highest' and 'Bonus Mark : 1'. A table displays the following data:

Name	Quiz 1	Quiz 2	Final Mark
Aisyah	3	5	0
Nurul Fatehah	5	6	0
AkiahAmuur	4	2	0
fatm naemah	5	4	0
Syahirah	5	4	0
Farah Syarwiena	3	4	0
nadzirah	3	2	0
Nurnadiyah	7	5	0
Robbiaton	3	2	0
Ayesha	6	3	0

Below the table is a numeric keypad with a dropdown menu showing '0', '1', '2', '3', '4', '5'. A red arrow points from the table to a separate 'Final Mark' list on the right, which contains the values: 6, 7, 5, 6, 6, 5, 4, 8, 4, 7. At the bottom, there are two dropdown menus labeled 'A' and 'B', a 'Process' button, and a 'Bonus Mark : 0' dropdown.

FIGURE Q13

The screenshot shows a web form titled 'Health Information' with a sub-section 'Registration'. It contains two input fields: 'Name' with a red prompt 'Please key in Name' and 'IC' with the value '700110105608' entered.

FIGURE Q14

```

Dim s, s1, t As String
Dim i As Integer

s1 = "Hello"
i = 1

s = s1 & i
t = s1 + i 'Exception here

If s = t Then
    MessageBox.Show(s + "=" & t)
End IF
    
```

FIGURE Q15