




## **CENTRE FOR DIPLOMA STUDIES**

### **MULTIMEDIA CONCEPT**

## **LABORATORY INSTRUCTION SHEET**

<b>Course Code</b>	<b>DAT 21103</b>
<b>Lab Practical Title</b>	<b>SELECTION STRUCTURE USING SPECIFIC OBJECT CONTROLS</b>
<b>Lab Practical</b>	<b>7</b>

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## Learning Outcome(s)

At the end of this practical session, you should be able to:

1. Use Check boxes, Radio Buttons, Combo Boxes and List Boxes Use Check Box, Options Button, Combo Box and List Box in an application
2. Implement selection structures for Radio Buttons, Check boxes, Combo Boxes and List Boxes
3. Implement selection structures with comparing numerical value and string value

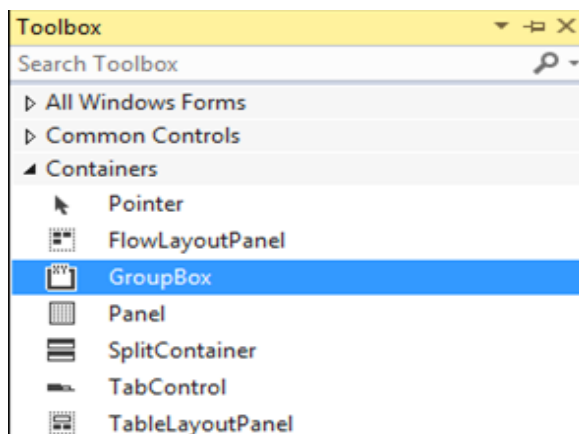
## Guided Task 7.1: Using Checked Box

### Contextual Situation 7.1:


A checked box is used in a form to get the choices made by the user. All the Checkboxes with ticks inside them will have their Text displayed in a Message Box.

### Step 1: Design a Form

- (a) Start a new project and create a Form
- (b) Add a Button to your Form
- (c) Add a Group Box
  - i. Now locate the Group Box control in the toolbox:  
It's better to draw this one on the form, rather than dragging and dropping.
  - ii. Use mouse pointer will drag and drop the **Group Box**



- (d) Add **Checkboxes**
  - i. Locate the **Checkbox** control in the toolbox, under **Common Controls**.
  - ii. Add 5 Checkboxes to your Group Box.
  - iii. The Group Box we just added will hold our Checkboxes. It acts as a container for the controls. To move the Checkboxes about, we can just click on the Group Box

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to select it, and drag and drop the Group Box somewhere else. The Checkboxes will all move with the Group Box. Let's add some Checkboxes to it.

## Step 2: Set the properties for each object controls


- (a) Set the properties of a Form:
  - i. Click on your form to select it.
  - ii. Change the default name at **Name property** to **frmChecked**.
  - iii. Change the **Text property** to "**CheckBoxes**".
- (b) Set the properties of a Button:
  - i. Click on your Button to select it.
  - ii. Change the default name at **Name property** to **btnDisplay**.
  - iii. Change the **Text property** to "Choosen Soaps".
- (c) Set properties of a Group Box:
  - i. Click on your Group Box to select it.
  - ii. Change the default name at **Name property** to **grpChoice**.
  - iii. Change to the **Text property** to "**Soaps**".
  - iv. **Change the Font Property to anything you like.**
- (d) Set properties of a Checked Box:
  - i. Click on your Checked Box to select it.
  - ii. Change the default name at **Name property** to **chkChoice1**.
  - iii. Change the **Text property** of each of your Checkboxes to any five Soap Operas: Hollyoaks, Coronation Street, Eastenders, The Bill and Neighbours

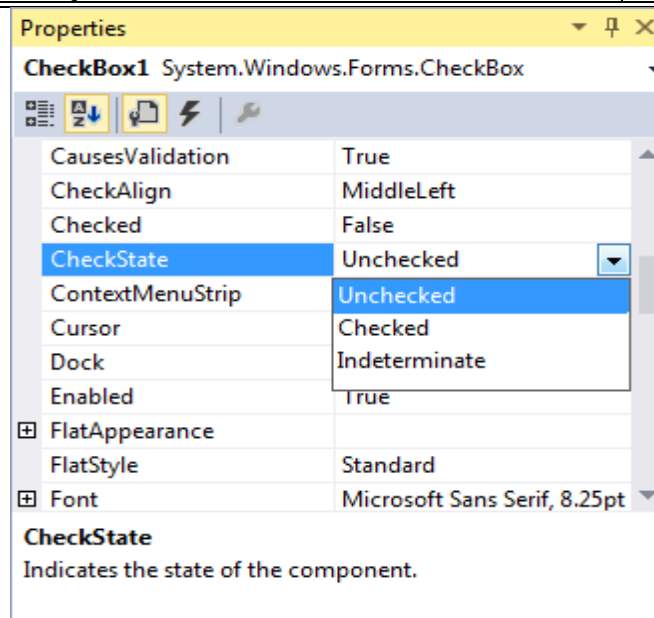
Now, the Form look like this one:



## Step 3: Write a program code

If you click on any one of your Checkboxes and examine its Properties in the Property box, you'll notice that it has a **CheckState** Property. Click the down arrow to see the options this **CheckState** has.

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As you can see, you are given three options: Unchecked, Checked, Indeterminate. If a checkbox has been selected, the value for the CheckState property will be 1; if it hasn't been selected, the value is zero. (The value for the Indeterminate option is also zero, but we won't be using this.)

**(a) Click Event Procedure for a button**

Write the following code in the procedure:

```


Dim message As String = ""
Dim counter As Integer = 0

If chkChoice1.CheckState = CheckState.Checked Then
    message = message & chkChoice1.Text & vbCrLf
    counter = counter + 1
End If

If chkChoice2.CheckState = CheckState.Checked Then
    message = message & chkChoice2.Text & vbCrLf
    counter = counter + 1
End If

If chkChoice3.CheckState = CheckState.Checked Then
    message = message & chkChoice3.Text & vbCrLf
    counter = counter + 1
End If
If chkChoice4.CheckState = CheckState.Checked Then
    message = message & chkChoice4.Text & vbCrLf

```

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```

        counter = counter + 1
    End If
    If chkChoice5.CheckState = CheckState.Checked Then
        message = message & chkChoice5.Text & vbCrLf
        counter = counter + 1
    End If
    MessageBox.Show("You have chosen " & vbCrLf & message)

    Select Case counter
        Case 0
            MessageBox.Show("You obviously don't watch soaps!")
        Case 1
            MessageBox.Show("only 1 show watched")
        Case 2
            MessageBox.Show("2 shows watched by you")
        Case 3
            MessageBox.Show("3 shows watched by you")
        Case 4
            MessageBox.Show("4 shows watched by you")
        Case 5
            MessageBox.Show("You are a soap addict")
    End Select

```

#### Step 4: Run the program and fix the error (if occurred)

Run your Programme to test it out.

Put a tick inside all of your Checkboxes. When you click your button all your Soap Operas should appear in the Message Box. Check and Uncheck some options, and click the button again. Only those items that are selected should appear in your Checkbox.


So, we can test to see which Check Boxes a user has ticked, and we can keep a record of those choices for ourselves. We can also do is count how many Check Boxes were ticked

#### Conclusion:

The point about having Checkboxes is to offer your users multiple choices.

#### Guided Tasks 7.2: Using Radio Button

Radio Buttons, sometimes called Option Buttons, are used when you want to restrict a user's choice to one, Male/Female, for example.

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## Contextual Situation 7.2:

A Checkbox would be no good here, because a user could tick both boxes. You want to force your users to **pick only one** from your list of options. At the end, we then display the selected radio button in a message box. The Text property from the chosen radio button is then placed in a String variable called ChosenSitCom. At the end, we then display the selected radio button in a message box.


### Step 1: Design the form

- Reopen previous project in Guided Task 1. Use the same form in that project.
- Add a **Group Box** to your Form.
- Place a Button on your form
- Place five **Radio Buttons** into your Group Box (By default, they'll be called "Option1", "Option2", "Option3", etc

### Step 2: Set the properties

- Set the properties of Form:
  - Click on your form
  - Change the **Text property** to "**CheckBoxes and RadioButtons**".
- Set the properties of a Button:
  - Click on your Button to select it.
  - Change the default name at **Name property** to **btnVoted**.
  - Change the **Text property** to "**Sit Com Voted For**".
- Set the properties of a Group Box:
  - Click on your Group Box to select it.
  - Change the default name at **Name property** to **grpSitCom**.
  - Set the **Text Property** of the Group Box to "Best Sit Com of all time"
  - Change the Font Property to anything you like.**
- Set properties of a Radio Buttons:
  - Click on your Radio Buttons to select it.
  - Change the default name at **Name property of the five radio buttons** to **rad1, rad2, etc**
  - Set the Text Property of the Five Radio Buttons to Only Fools and Horses, Dad's Army, Blackadder, Fawlty Towers, Vicar of Dibley

Your Form should now look something like this:

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### Step 3: Write program code

- (a) Click Event Procedure for **btnVoted**:  
Type the following code (Notice that the Property is now Checked, and not CheckState) in the procedure.

```

Dim ChosenSitCom As String = ""

If rad1.Checked = True Then
    ChosenSitCom = rad1.Text

ElseIf rad2.Checked = True Then
    ChosenSitCom = rad2.Text

ElseIf rad3.Checked = True Then
    ChosenSitCom = rad3.Text

ElseIf rad4.Checked = True Then
    ChosenSitCom = rad4.Text


ElseIf rad5.Checked = True Then
    ChosenSitCom = rad5.Text

End If
MsgBox("You voted for " & ChosenSitCom)

```

### Step 4: Run the program and fix the error (if occurred)

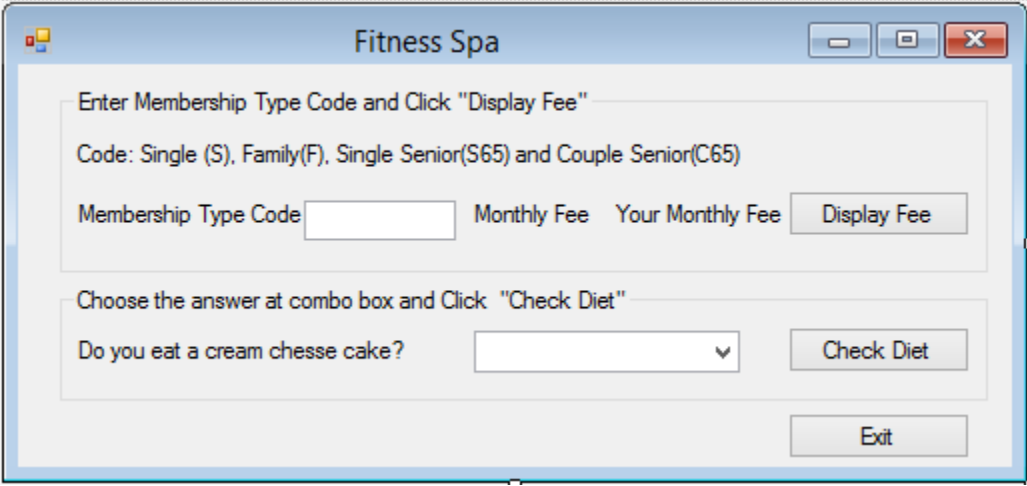
Once you have typed the coding as shown above, **Run** the program (press F5 or click the Run icon on the Standard toolbar).

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### Guided Task 7.3: Decision using Combo Box with Comparing Strings

#### Contextual Situation 7.3:

An application will be developed for Fitness Spa membership information. Monthly fee will be displayed after user enter the code of membership. This application also provides a message box when user check the consequences his/her diet when he/she choose to eat a cream cake. It will be either "Ruined" or "Not Ruined" his/her diet. While a message "Diet Not Tested" will appear if user do not make any choice. With all choices and decision, an If ... Else statement and Select Case statement will be used to implement the application. Please refer suggested user interface as shown below.




#### Step 1: Design a Form

- Start a new project and create a Form
- Add 2 group boxes
  - At the first group box, place 4 Label, a textbox, and a button
  - At the second group box, place a Label, a combo box and a button.
- A button

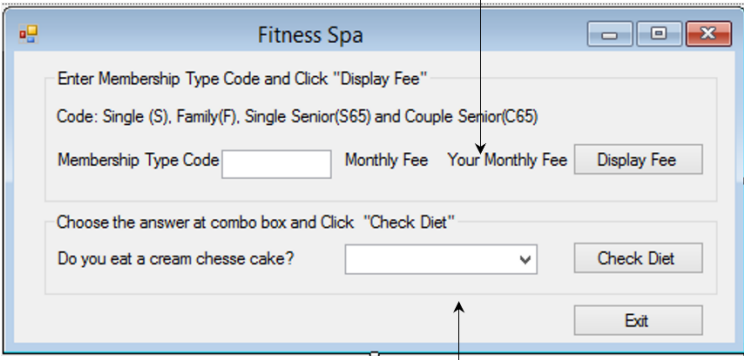
#### Step 2: Set the properties for each object controls

- Set the properties of a Form:
  - Click on your form to select it.
  - Change the default name at **Name property** to **frmFitness**.
  - Change the **Text property** to **"Fitness Spa"**.
- Set the properties of a Group boxes, Buttons, Text Box, Labels as shown in the above Figure. Use the correct prefix naming convention.



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**lblFee**



**cboChoice**

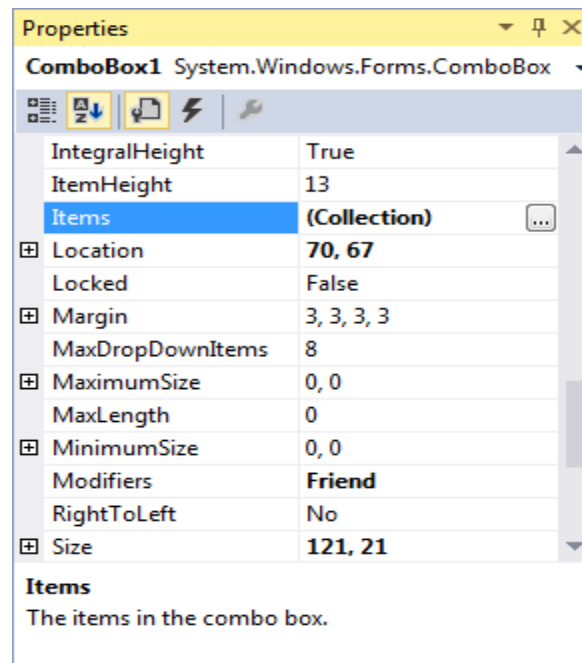
**btnDisplay**

**btnCake**


**btnExit**

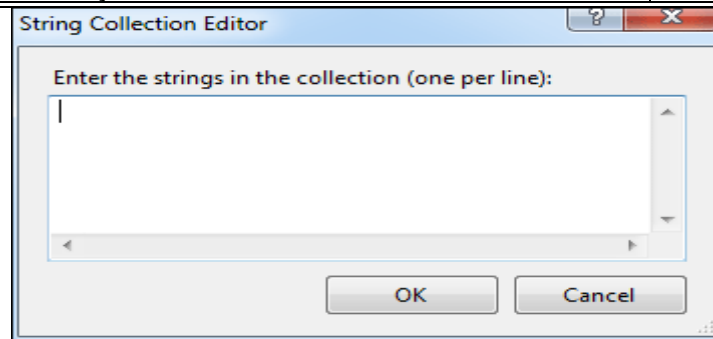
(c) Set properties of a combo box:

- i. Click on your Combo Box to select it.
- ii. Change the default name at **Name property** to **cboChoice**.
- iii. Then locate the **Items property** from the Properties Box as below:

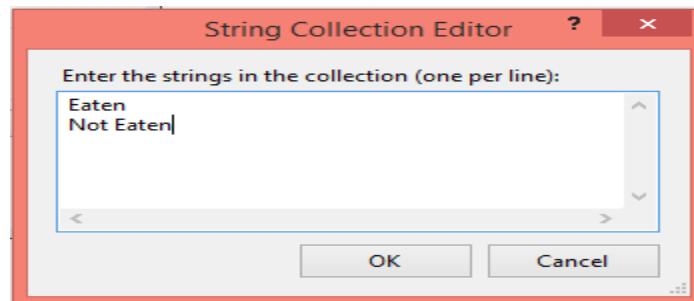


- iv. Click the grey button, as above. The one with the three dots in it. When you do, you'll get the following box popping up:

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- v. To use the String Collection Editor, type an item and press Return (it's just like a normal textbox. Each item will be one item in your drop-down box.)
- vi. Enter two items, as in the image below:



### Step 3: Write a program code

#### (a) Click Event Procedure for btnDisplay


Write the following code in the procedure:

```

'display a mothly membership fee
Const intSINGLE As Integer = 40
Const intFAMILY As Integer = 50
Const intSINGLE_SENIOR As Integer = 30
Const intCOUPLE_SENIOR As Integer = 35
Dim intFee As Integer
Dim strCode As String

'assign code to a variable
strCode = txtCode.Text.ToUpper
'determine fee
If strCode = "S" Then
    intFee = intSINGLE
ElseIf strCode = "F" Then
    intFee = intFAMILY
ElseIf strCode = "S6" Then
    intFee = intSINGLE_SENIOR
ElseIf strCode = "C65" Then
    intFee = intCOUPLE_SENIOR
Else

```

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```

        intFee = 0
    End If

    lblFee.Text = intFee.ToString("C0")

```

**(b) Click Event Procedure for btnCake**

Write the following code in the procedure:

```

Dim creamcake As String
Dim DietState As String

creamcake = cboChoice.Text
Select Case creamcake
    Case "Eaten"
        DietState = "Diet Ruined"
    Case "Not Eaten"
        DietState = "Diet Not Ruined"
    Case Else
        DietState = "Didn't check"
End Select
MsgBox(DietState)

```

**(c) Click Event Procedure for btnExit**

Write the following code in the procedure:

```

End

```

**Step 4: Run the program and fix the error (if occurred)**


1. Run your program.
2. When the program is running, type a membership code and click button "Display Fee". Check the output appear from label.
3. Then, select an item from your Combo Box and click button "Check Diet". Whatever was in the Combo Box window should have ended up in the Message Box.

**Guided Task 7.4: Decision Using List Box**

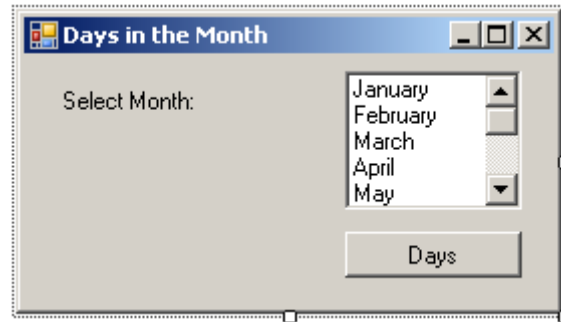
**Contextual Situation 7.4:**

Use a list Box and use multi-way selection the test applied doesn't just give a boolean (ie true or false) result, it can have many values and an action is associated with each of these values. Hence there can be many possible actions taken depending on the result of the test.

**Step 1: Design a Form**

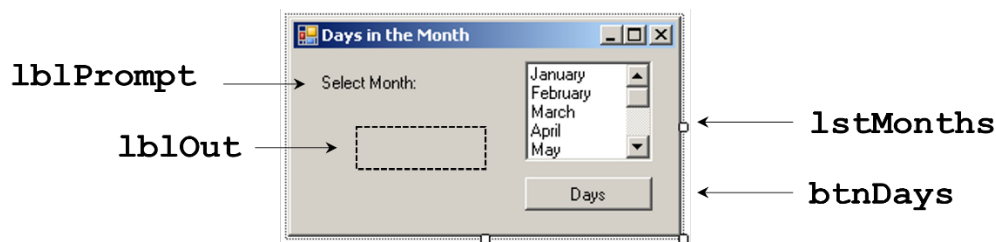
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Start a new Visual Basic project in the usual way. Design a form with two Labels, a ListBox, and a Button. It should be similar to that shown.



## Step 2: Set the properties for each object controls

Give all the controls meaningful names (in order to use the code given below these should be lblPrompt, lblOut, lstMonths, cmdDays).




To get the month names into the ListBox select the Items property in the properties window. Click on the ellipse button (...) to bring up the String Collection Editor dialog. Enter the month names, one to a line, in this dialog.

## Step 3: Write a program code

Try this code in the Click event handler of the button and confirm that the application works as expected:

```
Dim intMonth As Integer = lstMonths.SelectedIndex
If (intMonth = 0) Then
    lblOut.Text = "31 days in January"
ElseIf (intMonth = 1) Then
    lblOut.Text = "28 or 29 days in February"
ElseIf (intMonth = 2) Then
    lblOut.Text = "31 days in March"
ElseIf (intMonth = 3) Then
    lblOut.Text = "30 days in April"
ElseIf (intMonth = 4) Then
    lblOut.Text = "31 days in May"
ElseIf (intMonth = 5) Then
    lblOut.Text = "30 days in June"
ElseIf (intMonth = 6) Then
```

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```

        lblOut.Text = "31 days in July"
    ElseIf (intMonth = 7) Then
        lblOut.Text = "31 days in August"
    ElseIf (intMonth = 8) Then
        lblOut.Text = "30 days in September"
    ElseIf (intMonth = 9) Then
        lblOut.Text = "31 days in October"
    ElseIf (intMonth = 10) Then
        lblOut.Text = "30 days in November"
    ElseIf (intMonth = 11) Then
        lblOut.Text = "31 days in December"
    Else
        lblOut.Text = "Select a Month"
    End If

```

Now try the Select Case version of the code in the Click event handler of the button and confirm that the application works as expected:

```

Dim intMonth As Integer = lstMonths.SelectedIndex
Select Case intMonth
    Case 0, 2, 4, 6, 7, 9, 11
        lblOut.Text = "31 days in " & lstMonths.SelectedItem
    Case 1
        lblOut.Text = "28 or 29 days in " & lstMonths.SelectedItem
    Case 3, 5, 8, 10
        lblOut.Text = "30 days in " & lstMonths.SelectedItem
    Case Else
        lblOut.Text = "Select a Month"
End Select

```

**Step 4: Run the program and fix the error (if occurred)**