Monash University
Faculty of Information Technology

School of Information Management and Systems

Test 2  2005
IMS1906 Business Programming Fundamentals

Reading Time:  5 minutes
Writing Time:  50 minutes

Instructions to candidates:

- Candidates are reminded that they should have no books, notes, papers or other material in their possession unless their use is specifically permitted below.
- Calculators are NOT allowed
- ANSWER ALL QUESTIONS IN THE SPACE PROVIDED.
- This test counts towards 10% of your exam mark.

<table>
<thead>
<tr>
<th>Student Identification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student’s Surname</td>
<td></td>
</tr>
<tr>
<td>Student’s First name</td>
<td></td>
</tr>
<tr>
<td>Tutor’s Name</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructors Use Only</th>
<th>Marks /Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Marks</td>
<td>/50</td>
</tr>
</tbody>
</table>
Q1 Consider the following extract of code, which contains 3 errors:

```vbnet
Dim sngDeposits As Single, sngWithdrawals As Single
Dim sngBalance As Single, intMonth As Integer
Dim srInputFile As IO.StreamReader

srInputFile = IO.File.OpenText("account.txt")
intMonth = 1
sngBalance = 0

Do While (intMonth < 12)      ' Read 12 months worth of data
    sngDeposits = Convert.ToSingle(srInputFile.ReadLine())
    sngWithdrawals = Convert.ToSingle(srInputFile.ReadLine())
    sngBalance = sngBalance + sngDeposits - sngWithdrawals
    lstResultList.Items.Add( "Balance for month " & Month & " is " & _
        sngBalance.ToString("C")
    intMonth = intMonth + 1
    srInputFile.Close()
Loop
lblFinalBalance.Text = sngBalance
```

i. State the three types of errors that can occur in the program above and the line they occur.

ii. Explain how these errors might be detected if you were the programmer

[3 + 5 = 8 marks]
Q2 a) Explain the difference between a user-defined **subroutine** and user-defined **function**

b) Given the following snippet of VB.NET code

```vbnet
Private Sub calcPay( ByVal hours As Single, ByRef earnings As Single)
    earnings = hours * 24.38
End Sub
```

Explain why the parameter “hours” is passed **ByVal** and “earnings” is **ByRef** in the example above

[4 marks]
c) Write a VB.NET independent Sub Procedure named `swapNames` which accepts two names, and will swap the values stored in the variables passed as arguments to the procedure.

[5 marks]
d) Write a VB.NET Function named *isEven* which accepts an integer and returns TRUE if the number is even and FALSE if the number is odd. Use the following Function header:

```
Private Function isEven(ByVal intNumber As Single) As Boolean
```

[5 marks]
Q3 An array of names (called names) needs to be searched for the name “Greg” and its position in the array needs to be returned. Illustrate how you would perform the search. You do not have to write any VB.NET code. Use may use pseudo code, diagrams, anything to illustrate how you would perform the search.

names:

<table>
<thead>
<tr>
<th>Mick</th>
<th>Wei</th>
<th>Andy</th>
<th>Greg</th>
<th>Doris</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

[10 marks]
Q4 Write a Sub Procedure named `LoadFile` that opens a file named “myFriends.txt”, reads the data from the file, then adds each item to a listbox. The data file contains the following friend’s names, eg:

- Angela
- Alysha
- Taylor
- Charlotte
- Bridie

Include **Exception Handling code** to cope with the case when the data file is corrupt or missing. (If an exception does occur, simply abort the loading of the file.)

```vba
Private Sub LoadFile()
    ' Your code here
End Sub
```

[14 marks]