

Visual Basic 6.0 (V) & VB.NET
丙檢試題第二站第三題分數加減乘除

資科系
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第二站試題BASIC應用程式設計

- 編號 試題名稱
- 119-890306 身分證號碼檢查
- 119-890307 高速公路車輛統計
- **119-890308 分數加、減、乘、除運算**
- **→三選一 (80分鐘)**

第二站第三題分數加、減、乘、除運算

- 由循序檔讀入多筆記錄
- Frame物件 → 母件
- 單一物件 V.S. 物件陣列
- 標題物件如何以文字方塊設定
- 選擇項檢查(select case)
- 分數表示及運算
- 運算結果化為最簡 → 除以最大公因數

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VB.NET循序檔讀入多筆記錄檔案處理

- 循序檔
 - 讀檔 → 多筆記錄!!
 - 指令格式 → 前測迴圈!!

```
FileOpen(1, "d:\940308.sm", OpenMode.Input)
do While Not EOF(1)
Input(1, a1) : Input(1, a2) : Input(1, a3)
Input(1, a4) : Input(1, a5)
Loop
FileClose(1)
```

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VB.NET單一物件 V.S. 物件陣列

- 單一物件 V.S. 物件陣列
 - 單一文字方塊 text1
 - Text1.text → 文字方塊屬性
 - Dim a as textbox
 - 文字方塊物件陣列 → text1(5) 共六個
 - Text1(3).text → 文字方塊陣列屬性
 - Dim a(6) as textbox
- ```
For i=0 to 6
a(i)=new textbox
next
```

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## 選擇項檢查

Select case 運算式或變數

Case 選擇條件1:

指令區段1

Case 選擇條件2:

指令區段2

...

Case 選擇條件 n:

指令區段n

End select

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## 選擇項檢查範例

Select Case c

Case "+":  $e = b * x + a * y$  ' 分子

Case "-":  $e = b * x - a * y$

Case "\*":  $e = b * y$

Case "/":  $e = b * x$ :  $w = a * y$

End Select

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## 分數表示及運算

- 分數加減
  - 分子1乘分母2後 +/- 分子2乘分母1 除以分母1\*分母2
- 分數相乘
  - 分子1\*分子2 / 分母1\*分母2
- 分數相除
  - 分子1\*分母2 / 分子2\*分母1
- 歸納出結果為分母為分母1\*分母2，除法則為分子2\*分母1

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## 運算結果化為最簡 → 除以最大公因數

- 狀況1：若分子為分母的倍數則印出分子/分母
- 狀況2：若分子為0則印出0
- 狀況3：
  - 求運算結果之分子與分母之最大公因數
  - 若最大公因數為1，則不用在運算，直接印出結果
  - 分子與分母分別除以最大公因數 → 分數化為最簡

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## 顯示畫面

求出分數的加、減、乘、除

應檢人資料

姓名  准考證號碼

座號  考試日期

|  | VALUE1 | OP | VALUE2 | ANSWER |
|--|--------|----|--------|--------|
|  | 3/2    | *  | 6/9    | 1      |
|  | 4/7    | /  | 3/4    | 16/21  |
|  | 5/6    | +  | 1/3    | 7/6    |
|  | 1/4    | /  | 6/7    | 7/24   |
|  | 6/10   | -  | 12/20  | 0      |
|  | 21/47  | *  | 3/7    | 9/47   |
|  | 11/13  | /  | 1/2    | 22/13  |
|  | 4/15   | -  | 2/9    | 2/45   |

VB6第二站第三題分數加、減、乘、除運算程式

```
Private Sub Form_Activate()
```

```
Open "a:\title.txt" For Input As #1
```

```
Input #1, a, b, c, d
```

```
Text1(0).Text = a: Text1(1).Text = b
```

```
Text1(2).Text = c: Text1(3).Text = d
```

```
Close #1
```

```
Open "a:\890308.t01" For Input As #1
```

```
d = 0
```

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VB6第二站第三題分數加、減、乘、除運算程式

```
While Not EOF(1)
```

```
Input #1, b, a, c, y, x
```

```
Text2(d + 1).Text = b & "/" & a: Text3(d + 1).Text = c:
```

```
Text4(d + 1).Text = y & "/" & x
```

```
w = a * x ' 分母
```

```
Select Case c
```

```
Case "+": e = b * x + a * y ' 分子
```

```
Case "-": e = b * x - a * y
```

```
Case "*": e = b * y
```

```
Case "/": e = b * x: w = a * y
```

```
End Select
```

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VB6第二站第三題分數加、減、乘、除運算程式

```
If e = w Then '整除
 Text5(d + 1).Text = 1
Else
 If e = 0 Then '分子為0
 Text5(d + 1).Text = 0
 Else '求最大公因數
 a = e: b = w: cc = w Mod e
 While cc <> 0
 w = e: e = cc: cc = w Mod e
 Wend
```

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VB6第二站第三題分數加、減、乘、除運算程式

```
If e = 1 Then
 Text5(d + 1).Text = a & "/" & b
Else
 Text5(d + 1).Text = (a / e) & "/" & (b / e)
End If
End If
End If
d = d + 1
Wend
Close #1
```

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# 顯示畫面

求出分數的加、減、乘、除

應檢人資料

姓名 李小龍 准考證號碼 8901020304  
 座號 1 考試日期 2000/07/07

|  | VALUE1 | OP | VALUE2 | ANSWER |
|--|--------|----|--------|--------|
|  | 3/2    | *  | 6/9    | 1      |
|  | 4/7    | /  | 3/4    | 16/21  |
|  | 5/6    | +  | 1/3    | 7/6    |
|  | 1/4    | /  | 6/7    | 7/24   |
|  | 6/10   | -  | 12/20  | 0      |
|  | 21/47  | *  | 3/7    | 9/47   |
|  | 11/13  | /  | 1/2    | 22/13  |
|  | 4/15   | -  | 2/9    | 2/45   |

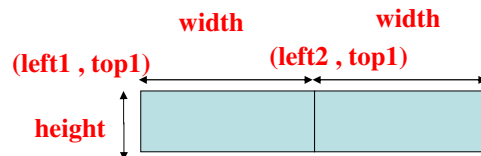
|  | VALUE1 | OP | VALUE2 | ANSWER |
|--|--------|----|--------|--------|
|  |        |    |        |        |
|  |        |    |        |        |
|  |        |    |        |        |
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|  |        |    |        |        |
|  |        |    |        |        |
|  |        |    |        |        |

LA a b c d 16



## Label、TextBox共通屬性

- Left、Top：左上x、左上y
- Width、Height：寬度、高度
- Text：顯示內容
- 位置調整： $\text{left2} = \text{left1} + \text{width}$
- 標籤預設無邊框，要能顯示邊框BorderStyle屬性設為BorderStyle.FixedSingle



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## 第二站第三題完整程式(VB.NET)

```
Dim a(10), b(10), c(10), d(10) As TextBox
Dim la(4), ll(11) As Label
Dim i, j As Integer
j = 100
For i = 1 To 4 ' 第一列說明標籤
 la(i) = New Label() : la(i).Left = j : j += 70
 la(i).Height = 20 : la(i).Width = 70 : la(i).Top = 130
 la(i).BorderStyle = BorderStyle.FixedSingle
 Me.Controls.Add(la(i))
Next
la(1).Text = "VALUE1" : la(2).Text = "OP"
la(3).Text = "VALUE2" : la(4).Text = "ANSWER"
```

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### 第二站第三題完整程式(VB.NET)

```
j = 130
For i = 1 To 11 ' 第一欄空白標籤
 ll(i) = New Label()
 ll(i).Width = 70 : ll(i).Height = 20 : ll(i).Left = 30
 ll(i).BorderStyle = BorderStyle.FixedSingle
 ll(i).Top = j : j += 20 : Me.Controls.Add(ll(i))
Next
```

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### 第二站第三題完整程式(VB.NET)

```
j = 150
For i = 1 To 10 ' 中間文字方塊
 a(i) = New TextBox : b(i) = New TextBox
 c(i) = New TextBox : d(i) = New TextBox
 a(i).Left = 100 : a(i).Top = j : a(i).Width = 70 : a(i).Height = 20
 b(i).Left = 170 : b(i).Top = j : b(i).Width = 70 : b(i).Height = 20
 c(i).Left = 240 : c(i).Top = j : c(i).Width = 70 : c(i).Height = 20
 d(i).Left = 310 : d(i).Top = j : d(i).Width = 70 : d(i).Height = 20
 j += 20
 Me.Controls.Add(a(i)) : Me.Controls.Add(b(i))
 Me.Controls.Add(c(i)) : Me.Controls.Add(d(i))
Next
```

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### 第二站第三題完整程式(VB.NET)

```
Dim a1, a2, a4, a5 As Integer
Dim a3 As String
FileOpen(1, "e:\940308.sm", OpenMode.Input)
i = 1
While Not EOF(1)
 Input(1, a1) : Input(1, a2) : Input(1, a3)
 Input(1, a4) : Input(1, a5)
 a(i).Text = a1 & "/" & a2
 b(i).Text = a3
 c(i).Text = a4 & "/" & a5
 Dim div1, div2 As Integer
 div2 = a2 * a5
```

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### 第二站第三題完整程式(VB.NET)

```
Select Case a3
 Case "+"
 div1 = a1 * a5 + a2 * a4
 Case "-"
 div1 = a1 * a5 - a2 * a4
 Case "*"
 div1 = a1 * a4
 Case "/"
 div2 = a2 * a4 : div1 = a1 * a5
End Select
```

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第二站第三題完整程式(VB.NET)

```
If div1 = div2 Then
 d(i).Text = 1
Else
 If div1 = 0 Then
 d(i).Text = 0
 Else
 Dim m1, m2, m3 As Integer
 m1 = div1 : m2 = div2
 m3 = m1 Mod m2
```

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第二站第三題完整程式(VB.NET)

```
do while m3 <> 0
 m1 = m2 : m2 = m3 : m3 = m1 Mod m2
Loop
' m2為最大公因數
d(i).Text = (div1 \ m2) & "/" & (div2 \ m2)
End If
End If
i = i + 1
End While
FileClose(1)
```

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## 範例 (數字系統轉換)



The image shows a screenshot of a Visual Basic IDE. The main window is titled "Project1 - f1 (程式碼)". The code editor displays the following code:

```
Dim t As String
For i = 1 To Len(T1.Text)
 t = Mid$(T1.Text, i, 1)
 If t > "9" Then
 Select Case t
 Case "A", "a": m = 10
 Case "B", "b": m = 11
 Case "C", "c": m = 12
 Case "D", "d": m = 13
 Case "E", "e": m = 14
 Case "F", "f": m = 15
 End Select
 Else
 m = Val(t)
 End If
 s = s * 16 + m
Next
MsgBox "輸入的數字轉成十進位為" & s
End Sub

Private Sub c1_Click()
 common
End Sub

Private Sub c2_Click()
 End
End Sub
```

Overlaid on the code editor is a small application window titled "數字轉換". It contains a text box with the prompt "輸入16進位數字" and two buttons labeled "開始轉換" and "結束".