



石家莊鐵道大學  
SHIJIAZHUANG TIEDAO UNIVERSITY

网络精品课程

VB  
程序  
设计

# 第5章 数组

## 部分习题讲解

主讲：胡畅霞



## 📍 选择题8

- ◆ Option Base 1
- ◆ Private Sub Command1\_Click()
  - ◆ Dim a
  - ◆ a = Array(1, 2, 3, 4, 5)
  - ◆ For i = 1 To UBound(A)
  - ◆ a(i) = a(i) + i - 1
  - ◆ Next
  - ◆ Print a(3)
  - ◆ End Sub
- ◆ 程序运行后，单击命令按钮，则在窗体上显示的内容是（ ）。
  - ◆ A. 4                      B. 5                      C. 6                      D. 7

**B**

# 类似题：选择题10，11

- ◆ Option Base 1
- ◆ Private Sub Command1\_Click()
  - ◆ Dim a As Variant
  - ◆ a=Array(1, 2, 3, 4, 5)
  - ◆ Sum=0
  - ◆ For i=1 To 5
  - ◆ Sum = sum+a(i)
  - ◆ Next i
  - ◆ x=Sum/5
  - ◆ For i =1 To 5
  - ◆ If a(i)>x Then Print a(i);
  - ◆ Next i
  - ◆ End Sub

Sum=15

D

- ◆ 程序运行后，单击命令按钮，在窗体上显示的内容是（ ）。
  - ◆ A. 1 2                      B. 1 2 3                      C. 3 4 5                      D. 4 5

VB  
程  
序  
设  
计



# 做题方法

- ◆ 看清题目要输出什么？
- ◆ 然后倒退这个结果来自哪里？
- ◆ 接着看程序含义

Option Base 1

```
Private Sub Command1_Click()
```

```
    Dim a
```

```
    a = Array(1, 2, 3, 4, 5)
```

```
    For i = 1 To UBound(A)
```

```
        a(i) = a(i) + i - 1
```

```
    Next
```

```
    Print a(3)
```

```
End Sub
```

VB  
程  
序  
设  
计



# 编程题1

- ◆ 利用随机数生成两个 $4 \times 4$ 的矩阵A和B，前者范围为 $30 \sim 70$ ，后者范围为 $101 \sim 135$ 。
- ◆ 要求：
  - ①将两个矩阵相加结果放入C矩阵。
  - ②将矩阵A转置。
  - ③求C矩阵中元素的最大值和下标。
  - ④以下三角形式显示A，上三角形式显示B。
  - ⑤将矩阵B第一行与第三行对应元素交换位置

VB  
程  
序  
设  
计

# 分析

- 通用声明处：
- `Dim a(1 To 4, 1 To 4) As Integer, b(1 To 4, 1 To 4) As Integer, c(1 To 4, 1 To 4) As Integer`



The screenshot shows a VB application window titled "Form1" with three text boxes displaying matrices and five buttons at the bottom.

**a矩阵:**

58	53	42	30
62	31	64	44
64	67	50	32
48	54	40	63

**b矩阵:**

119	111	128	127
125	115	128	134
102	113	127	121
111	123	110	129

**c矩阵:**

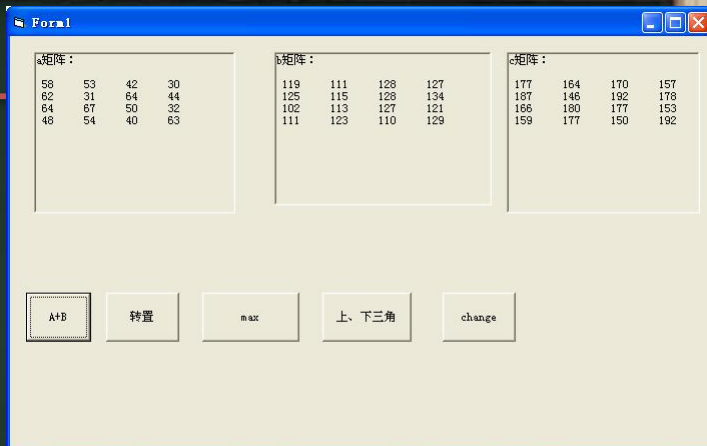
177	164	170	157
187	146	192	178
166	180	177	153
159	177	150	192

Buttons: A+B, 转置, max, 上、下三角, change

VB  
程序  
设计

# 产生a矩阵、b矩阵

- ◆ Private Sub Form\_Load ()
- ◆ Show
- ◆ Picture1.Print "a矩阵: "
- ◆ Picture1.Print
- ◆ Picture2.Print "b矩阵: "
- ◆ Picture2.Print
- ◆ For i = 1 To 4
- ◆     For j = 1 To 4
- ◆         a(i, j) = Int(Rnd \* 40 + 30)
- ◆         b(i, j) = Int(Rnd \* 35 + 101)
- ◆         Picture1.Print a(i, j); " ";
- ◆         Picture2.Print b(i, j); " ";
- ◆     Next j
- ◆     Picture1.Print
- ◆     Picture2.Print
- ◆ Next i
- ◆ End Sub

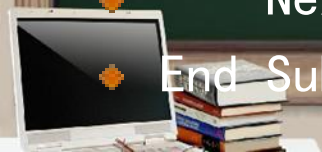
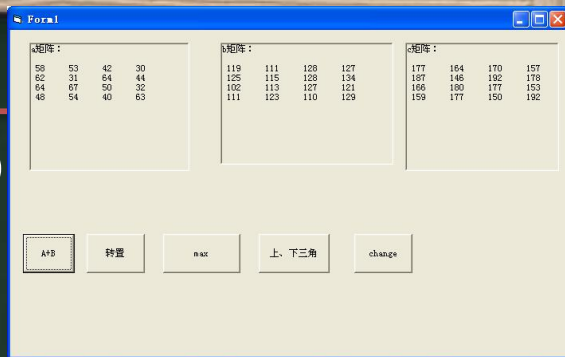


VB  
程序  
设计



# A+B

- ◆ Private Sub Command5\_Click()
- ◆     Picture3.Print "c矩阵: "
- ◆     Picture3.Print
- ◆         For i = 1 To 4
- ◆             For j = 1 To 4
- ◆                 c(i, j) = a(i, j) + b(i, j)
- ◆                 Picture3.Print c(i, j); "    ";
- ◆             Next j
- ◆         Picture3.Print
- ◆     Next i
- ◆ End Sub





# a转置

```
Private Sub Command1_Click()
```

```
For i = 1 To 4
```

```
For j = 1 To i
```

```
t = a(i, j)
```

```
a(i, j) = a(j, i)
```

```
a(j, i) = t
```

```
Next j
```

```
Next i
```

```
Picture2.Cls
```

```
Picture2.Print "a转置后: "
```

```
Picture2.Print
```

```
For i = 1 To 4
```

```
For j = 1 To 4
```

```
Picture2.Print a(i, j); " ";
```

```
Next j
```

```
Picture2.Print
```

```
Next i
```

```
End Sub
```



# C矩阵最大值和下标

```
◆ Private Sub Command2_Click()  
◆ Picture2.Cls  
◆ Max = c(1, 1)  
◆ t1 = 1  
◆ t2 = 1  
◆ For i = 1 To 4  
◆     For j = 1 To 4  
◆         If c(i, j) > Max Then  
◆             Max = c(i, j)  
◆             t1 = i  
◆             t2 = j  
◆         End If  
◆     Next j  
◆ Next i  
◆ Picture2.Print "max=", Max  
◆ Picture2.Print "c("; i; ", "; j; ")"  
◆ End Sub
```

VB  
程  
序  
设  
计

# 上下三角

- ◆ Private Sub Command3\_Click()
- ◆ Picture1.Cls
- ◆ Picture2.Cls
- ◆ For i = 1 To 4
- ◆     For j = 1 To i
- ◆         Picture1.Print a(i, j); "  ";
- ◆     Next j
- ◆     Picture1.Print
- ◆ Next i
- ◆ For i = 1 To 4
- ◆     For j = i To 4
- ◆         Picture2.Print Tab(j \* 5); b(i, j);
- ◆     Next j
- ◆     Picture2.Print
- ◆ Next i
- ◆ End Sub

VB  
程序  
设计

# 将矩阵B第一行与第三行对应元素交换位置

```
◆ Private Sub Command4_Click()  
◆ Picture1.Cls  
◆ For i = 1 To 4  
◆     t = a(1, i)  
◆     a(1, i) = a(3, i)  
◆     a(3, i) = t  
◆ Next i  
◆ For i = 1 To 4  
◆     For j = 1 To 4  
◆         Picture1.Print a(i, j); "  ";  
◆     Next j  
◆     Picture1.Print  
◆ Next i  
◆ End Sub
```

VB  
程  
序  
设  
计

## 编程题3

- 编写程序，随机产生20个两位数放在数组A中，并按由大到小的顺序排序。从键盘上输入一数X，判断此数是否在该数组A中，若在则输出其所在的位置及X值，否则输出“未找到”

VB  
程  
序  
设  
计

# 通用声明处声明 `Dim a(1 To 20) As Integer`

```
Private Sub Form_Click()
```

```
    Dim i As Integer
```

```
    randomize
```

```
    For i = 1 To 20 '生成数组
```

```
        a(i) = Int(Rnd * 90)+10
```

```
    Next i
```

```
    For i = 1 To 19 '冒泡排序
```

```
        For j = 20 To i + 1 Step -1
```

```
            If a(j) > a(j - 1) Then
```

```
                t = a(j)
```

```
                a(j) = a(j - 1)
```

```
                a(j - 1) = t
```

```
            End If
```

```
        Next j
```

```
    Next i
```

```
        For i = 1 To 20 '打印数组
```


```
            Print a(i);
```

```
            If i Mod 5 = 0 Then Print
```

```
                Next i
```

```
        End Sub
```

VB  
程序  
设计

VB  
程  
序  
设  
计

```
Private Sub Command1_Click()  
    Dim x As Integer, flag As Integer, i As Integer  
    flag = 0 '标志, 表示数组中是否存在x  
    x = InputBox("请输入x的值, 为整数", "输入", 1)  
    For i = 1 To 20  
        If x = a(i) Then  
            flag = 1 'flag改变, 说明存在  
            Exit For  
        End If  
    Next i  
    If flag = 1 Then  
        Print "数组中存在" & x  
        Print "位置:" & i  
    Else  
        Print "数组中不存在" & x  
    End If  
End Sub
```

