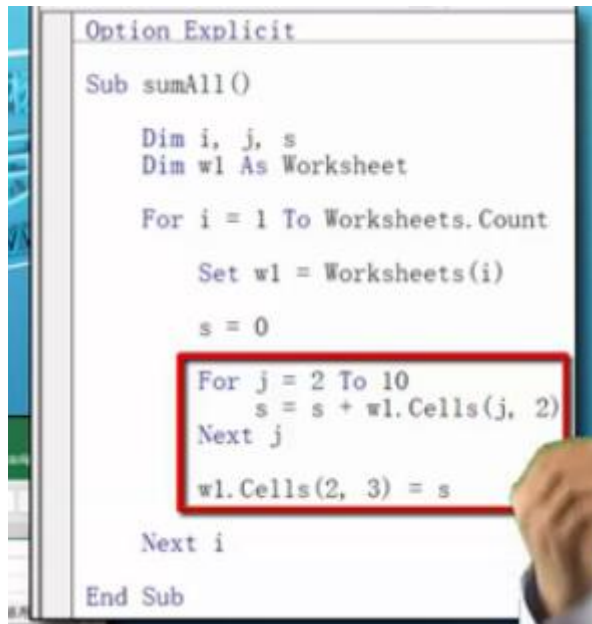


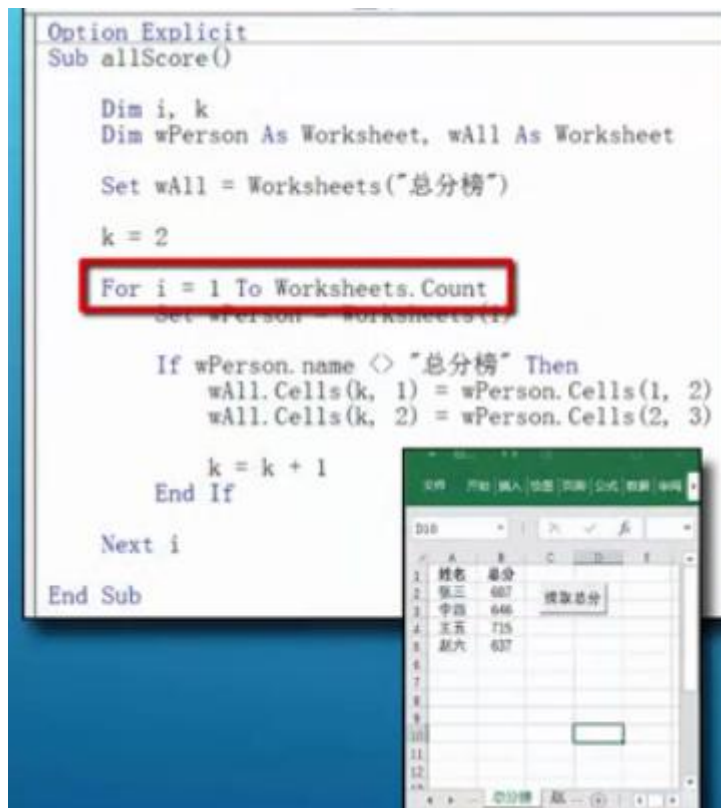
基础篇 第十五回

子过程分工明确，模块化益处良多

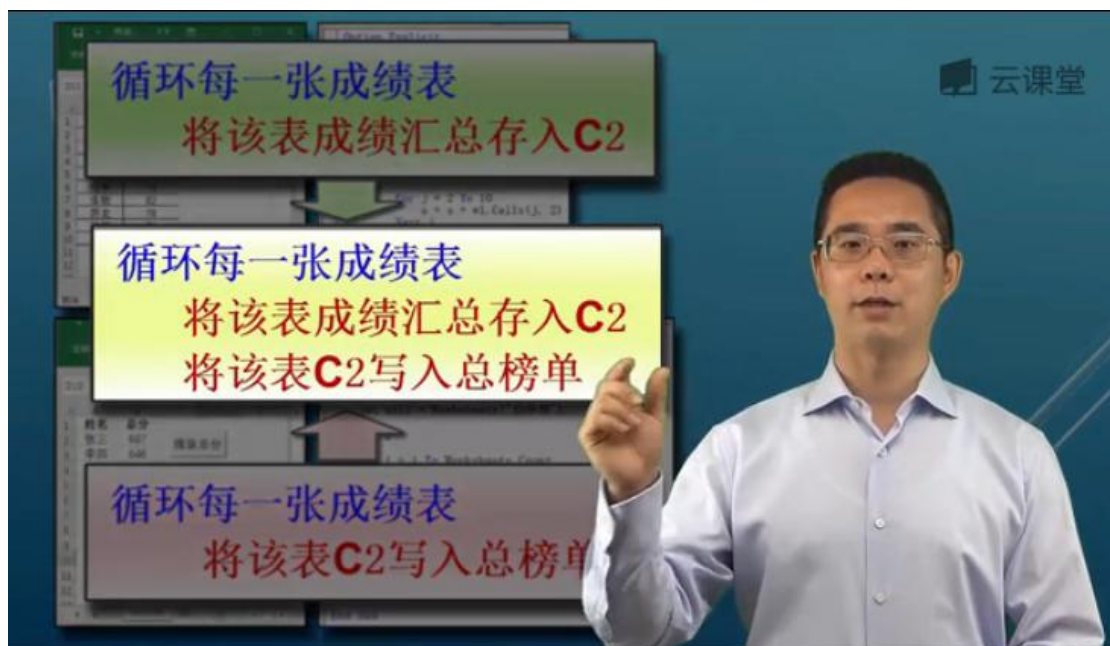
上节课布置的任务是将上节课的两个功能合并成一个程序。一个是个人成绩的汇总，另一个是把每个人的总分等级到总榜单这个工作表中，先观察这两个程序：第一个程序：先循环找到每一张工作表，每一张工作表中，把里面的成绩汇总，然后写到 C2 这个单元格里。



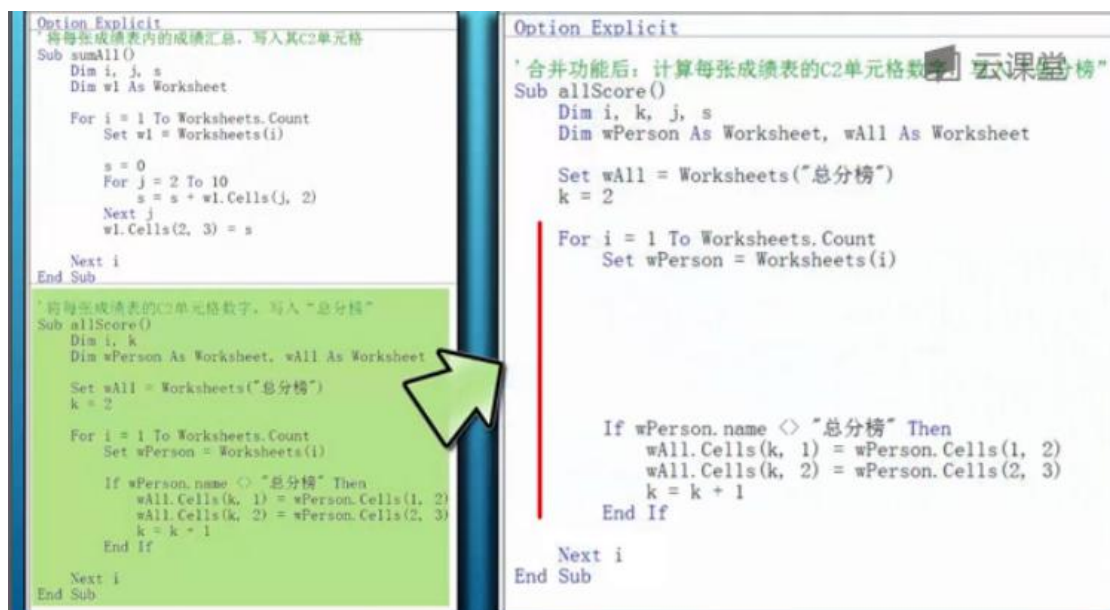
第二个程序：也有扫描所有成绩表的循环，



只不过每次循环找到一张成绩表的时候，直接把单元格的内容写到总榜单的单元格中，那么这么看来，这两个工作其实是可以同步完成的：也就是说当找到一张成绩单，先计算出这一张成绩单的总成绩，然后马上将汇总的成绩写到总榜单上。然后在处理下一个人的成绩。



加入我们保留第二个程序，



先是扫描每个成绩单，先是找到每一个成绩单的时候，我们首先做的事情是对他进行汇总：

Option Explicit

'合并功能后：计算每张成绩表的C2单元格数字，写入总分榜

```
Sub allScore()  
    Dim i, k, j, s  
    Dim wPerson As Worksheet, wAll As Worksheet
```

```
    Set wAll = Worksheets("总分榜")  
    k = 2
```

```
    For i = 1 To Worksheets.Count  
        Set wPerson = Worksheets(i)
```

**在执行下面代码前，
先对进行成绩汇总**

```
        If wPerson.name <> "总分榜" Then  
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)  
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)  
            k = k + 1  
        End If
```

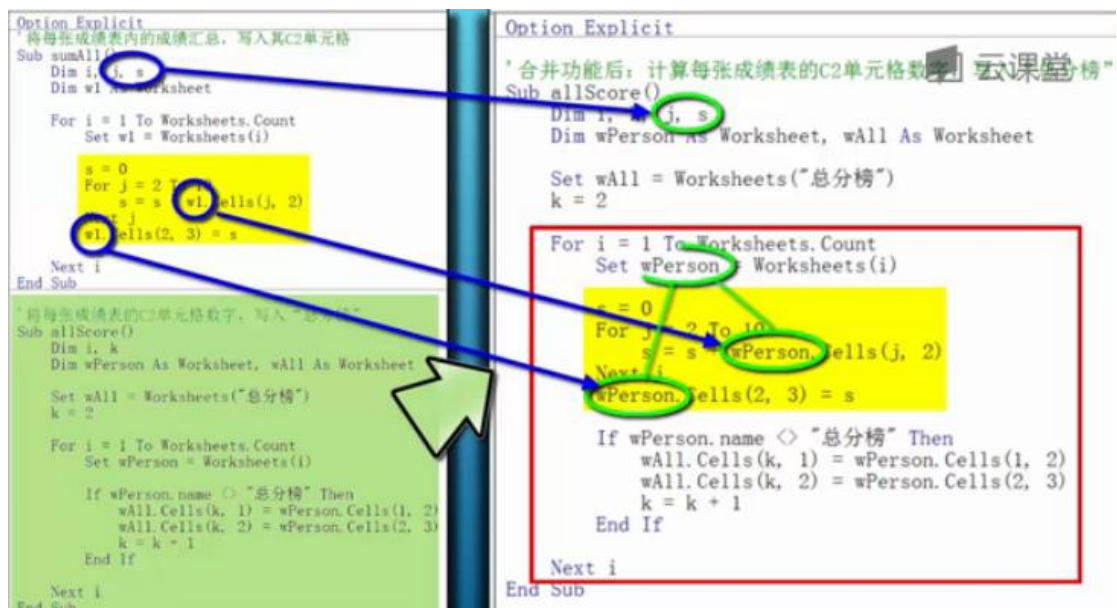
```
    Next i
```

```
End Sub
```

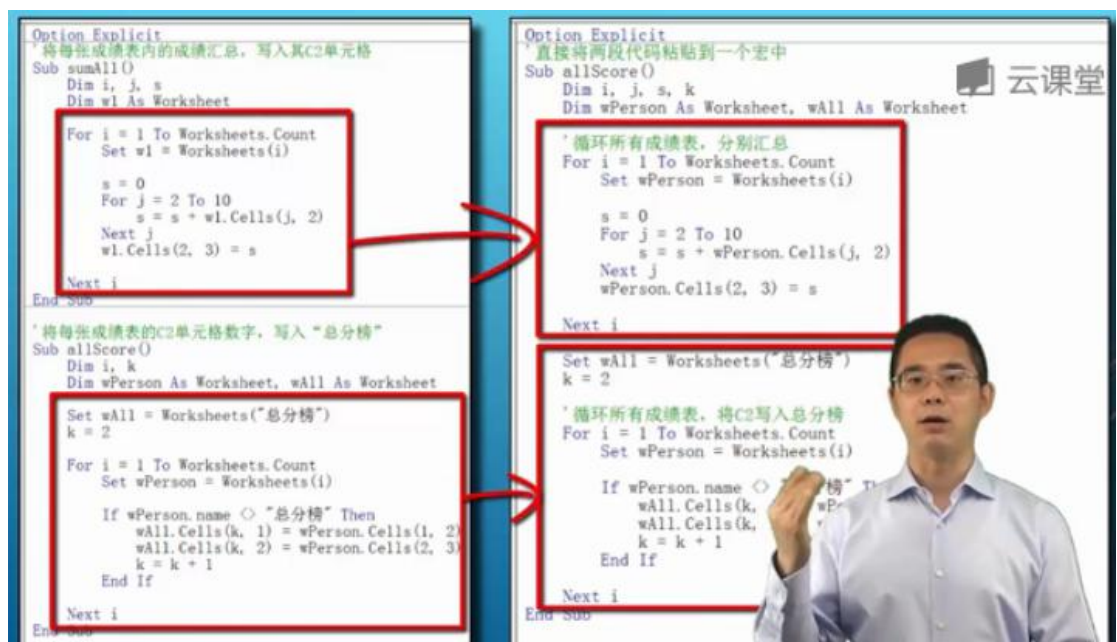
怎么汇总？把我们第一个程序里面的 sumAll 这个循环，复制过来。

The diagram illustrates the process of integrating a subprocedure. On the left, the `sumAll` subprocedure is shown, which calculates the sum of values in column 2 of a worksheet and stores it in cell C3. On the right, the `allScore` subprocedure is shown, which iterates through all worksheets and copies data to a '总分榜' (Total Score List) worksheet. A red arrow points from the `sumAll` code block to the `allScore` code block, indicating that the `sumAll` code is to be inserted into the `allScore` procedure at the point where the summary is performed.

```
Option Explicit  
'将每张成绩表内的成绩汇总，写入其C2单元格  
Sub sumAll()  
    Dim i, j, s  
    Dim w1 As Worksheet  
    For i = 1 To Worksheets.Count  
        Set w1 = Worksheets(i)  
        s = 0  
        For j = 2 To 10  
            s = s + w1.Cells(j, 2)  
        Next j  
        w1.Cells(2, 3) = s  
    Next i  
End Sub  
  
'合并功能后：计算每张成绩表的C2单元格数字，写入"总分榜"  
Sub allScore()  
    Dim i, k, j, s  
    Dim wPerson As Worksheet, wAll As Worksheet  
    Set wAll = Worksheets("总分榜")  
    k = 2  
    For i = 1 To Worksheets.Count  
        Set wPerson = Worksheets(i)  
        s = 0  
        For j = 2 To 10  
            s = s + wPerson.Cells(j, 2)  
        Next j  
        wPerson.Cells(2, 3) = s  
        If wPerson.name <> "总分榜" Then  
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)  
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)  
            k = k + 1  
        End If  
    Next i  
End Sub
```



那么有的同学可能要问，问什么要把程序写到一个循环里面呢？如果我仅仅是将两个按钮用一个按钮控制，我直接用将代码拷贝到一个 sub，end sub 不就可以了吗？



说的非常好，如果把两个程序的代码拷贝到一个程序里，同样可以完成这个任务，当然要注意变量要统一，dim 要放到最前面等等，这样做的唯一的问题就是我们做了两次工作表的循环。

Option Explicit
直接将两段代码粘贴到一个宏中

```
Sub allScore()
    Dim i, j, s, k
    Dim wPerson As Worksheet, wAll As Worksheet
```

' 循环所有成绩表，分别汇总

```
For i = 1 To Worksheets.Count
    Set wPerson = Worksheets(i)
    ' 循环一次
    For j = 2 To 10
        s = s + wPerson.Cells(j, 2)
    Next j
    wPerson.Cells(2, 3) = s
Next i
```

' 循环所有成绩表，将C2写入总分榜

```
For i = 1 To Worksheets.Count
    Set wPerson = Worksheets(i)
    ' 又循环一次
    If wPerson.name <> "总分榜" Then
        wAll.Cells(k, 1) = wPerson.name
        wAll.Cells(k, 2) = wPerson.Cells(2, 3)
        k = k + 1
    End If
Next i
```

```
End Sub
```

云课堂

所以说效率上要比我们用一个 for 循环要慢一些。不过这个速度对于我们日常的工作来说，已经完全可以接受了。

Option Explicit
每张成绩表内的成绩汇总，写入其C2单元格

```
Sub sumAll()
    Dim i, j, s
    Dim w1 As Worksheet

    For i = 1 To Worksheets.Count
        Set w1 = Worksheets(i)

        s = 0
        For j = 2 To 10
            s = s + w1.Cells(j, 2)
        Next j
        w1.Cells(2, 3) = s
    Next i
End Sub
```

Option Explicit
直接将两段代码粘贴到一个宏中

```
Sub allScore()
    Dim i, j, s, k
    Dim wPerson As Worksheet, wAll As Worksheet
```

**黑鼠白鼠，
抓住TOM才是好鼠！**

```

        ' 循环所有成绩表，分别汇总
        For i = 1 To Worksheets.Count
            Set wPerson = Worksheets(i)
            ' 循环一次
            For j = 2 To 10
                s = s + wPerson.Cells(j, 2)
            Next j
            wPerson.Cells(2, 3) = s
        Next i

        ' 循环所有成绩表，将C2写入总分榜
        For i = 1 To Worksheets.Count
            Set wPerson = Worksheets(i)
            ' 又循环一次
            If wPerson.name <> "总分榜" Then
                wAll.Cells(k, 1) = wPerson.name
                wAll.Cells(k, 2) = wPerson.Cells(2, 3)
                k = k + 1
            End If
        Next i
    End Sub
```

云课堂

不过如果你要真的这么做，杨老师还有更简单的办法，简单到什么程度呢？直接在连代码的赋值粘贴都不需要，直接在原来的两个 sub 里面添加一行代码就行。

```

Option Explicit
'将每张成绩表内的成绩汇总，写入其C2单元格
Sub sumAll()
    Dim i, j, s
    Dim w1 As Worksheet

    For i = 1 To Worksheets.Count
        Set w1 = Worksheets(i)

        s = 0
        For j = 2 To 10
            s = s + w1.Cells(j, 2)
        Next j
        w1.Cells(2, 3) = s
    Next i
End Sub

'将每张成绩表的C2单元格数字，写入“总分榜”
Sub allScore()
    Dim i, k
    Dim wPerson As Worksheet, wAll As Worksheet

    Set wAll = Worksheets("总分榜")
    k = 2

    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub

```



怎么解决，假设我们想保留第二个按钮，就是运行 allscore 这个环节，

```

Option Explicit
'将每张成绩表内的成绩汇总，写入其C2单元格
Sub sumAll()
    Dim i, j, s
    Dim w1 As Worksheet

    For i = 1 To Worksheets.Count
        Set w1 = Worksheets(i)

        s = 0
        For j = 2 To 10
            s = s + w1.Cells(j, 2)
        Next j
        w1.Cells(2, 3) = s
    Next i
End Sub

'将每张成绩表的C2单元格数字，写入“总分榜”
Sub allScore()
    Dim i, k
    Dim wPerson As Worksheet, wAll As Worksheet

    Set wAll = Worksheets("总分榜")
    k = 2

    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub

```

那么能不能让 allscore 这个宏自己说一句话，请在运行我的时候先运行 sumall(),运行结束再运行我这行代码。

```
Option Explicit
'将每张成绩表内的成绩汇总，写入其C2单元格
Sub sumAll()
    Dim i As Integer, s As Integer
    Dim w As Worksheet

    For i = 1 To Worksheets.Count
        Set w = Worksheets(i)

        s = 0
        For j = 2 To 10
            s = s + w.Cells(j, 2)
        Next j
        w.Cells(2, 3) = s
    Next i
End Sub

'将每张成绩表的C2单元格数字，写入“总分榜”
Sub allScore()
    Dim i, k
    Dim wPerson As Worksheet, wAll As Worksheet

    '请在此处先运行 sumAll，然后再运行下面的代码

    Set wAll = Worksheets("总分榜")
    k = 2

    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub
```

如果 allscore() 可以这么说话，那么我们运行了一个人就相当于同时运行了两个人。那么这句话怎么写？在 VBA 中怎么写？

```
'将每张成绩表的C2单元格数字，写入“总分榜”
Sub allScore()
    Dim i, k
    Dim wPerson As Worksheet, wAll As Worksheet

    '请在此处先运行 sumAll，然后再运行下面的代码
    Call sumAll

    Set wAll = Worksheets("总分榜")
    k = 2

    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub
```

Call 这个词在英语里是打电话呼叫的意思。呼叫 sumall () ,就是调用 sumall()

```
Option Explicit
'将每个成绩表的C2单元格求和，存入其C2单元格
Sub sumAll()
    Dim j As Integer
    Dim w1 As Worksheet

    For i = 1 To Worksheets.Count
        Set w1 = Worksheets(i)

        s = 0
        For j = 2 To 10
            s = s + w1.Cells(j, 2)
        Next j
        w1.Cells(2, 3) = s
    Next i
End Sub

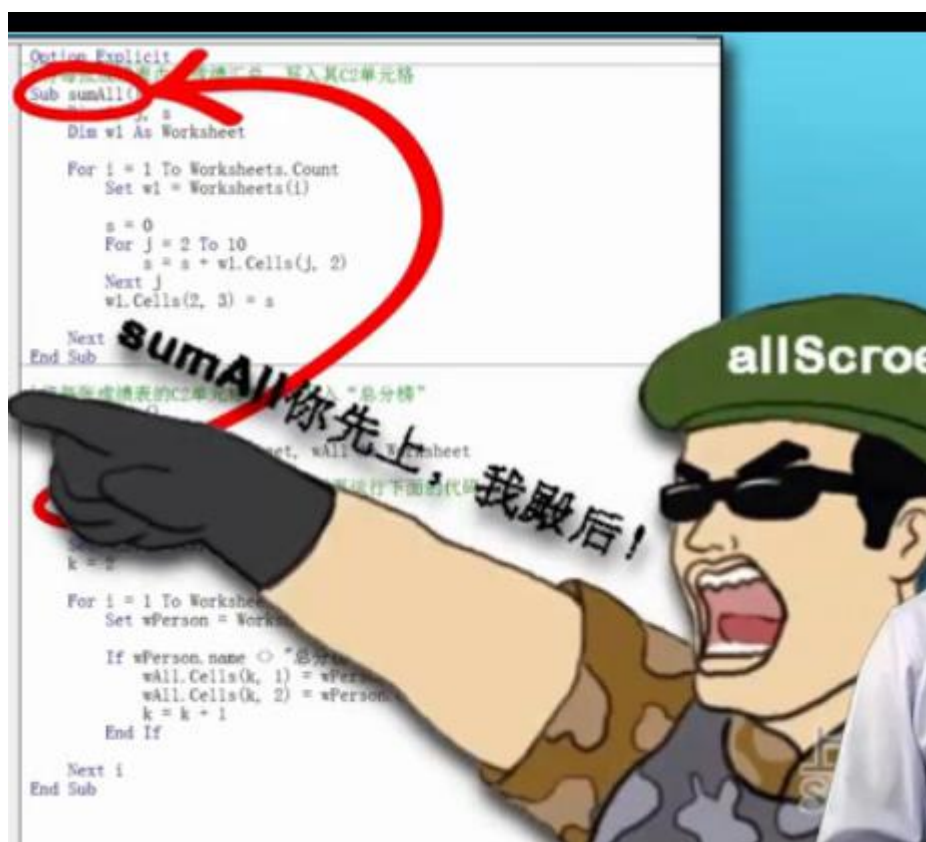
'将每个成绩表的C2单元格求和，存入“总分榜”
Sub allScore()
    Dim i As Integer, k As Integer
    Dim wPerson As Worksheet, wAll As Worksheet

    '调用sumAll，然后再运行下面的代码
    Call sumAll

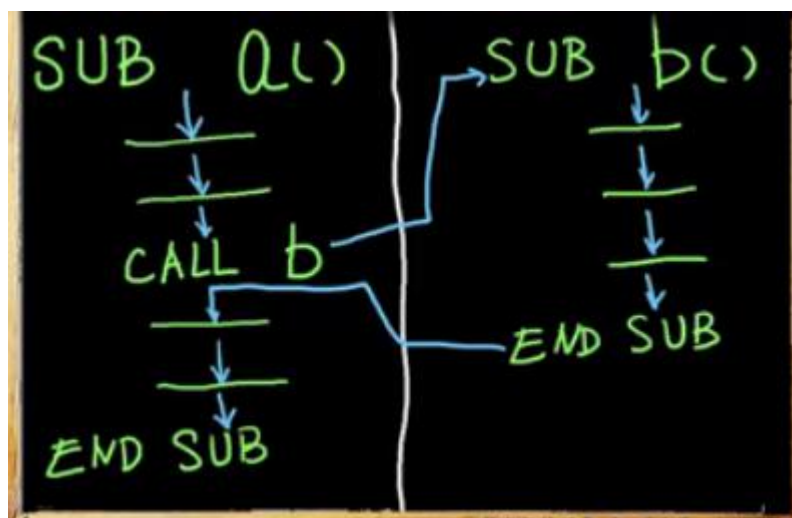
    Set wAll = Worksheets("总分榜")
    k = 2

    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

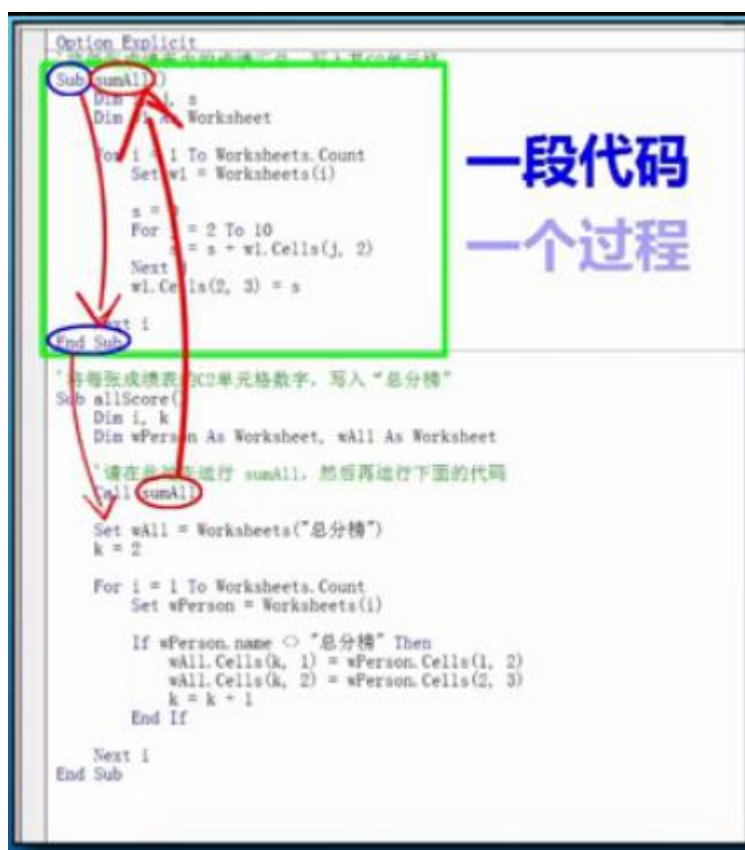
        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub
```



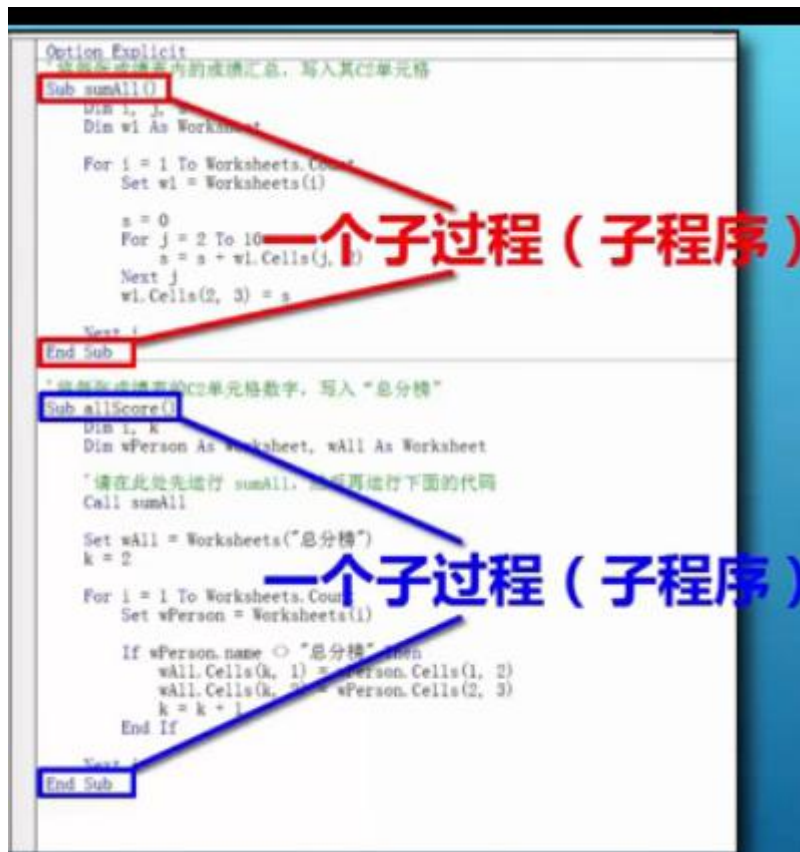
那么加入了 call 语句我们的程序怎么运行呢?我们用单步调试功能观察一下。下面就是程序执行的过程，这就是程序执行的过程调用。



什么是过程？在 C 语言中，过程就是一段代码。有自己的开始和自己的结束。而且还有自己的名字。在其他的程序里，我们可以随时地呼叫这个小程序。程序执行完再回到被呼叫的地方继续执行，这样的一段小程序就叫一个过程。



我们看到的 sub 和 end sub 构成的就是一个子过程。



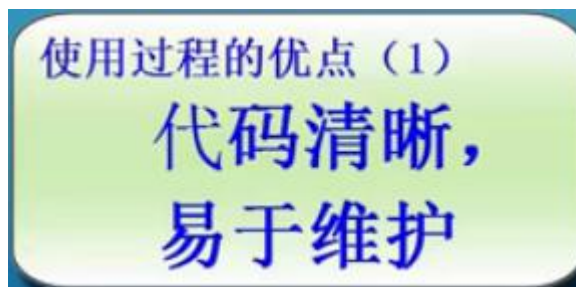
大家说 sub end sub 不是叫做宏吗？没错！在 VBE 中



大家可能会问，之前我们把程序写到一个宏里面不是挺好的吗？为什么还要分成子过程，这么麻烦。如果我们的程序稍微复杂一点点，大家就会感觉到用过程的方式，会有很多好处，



第一个好处，他可以让我们的程序更加的清晰易读，



下面的是按照子过程的方法

Option Explicit
主调过程，先调用“汇总”过程，再调用“登记”过程
Sub 汇总及登记()
 Call 汇总
 Call 登记
End Sub

Sub 汇总()
 Dim i, j As Integer
 Dim w1 As Worksheet
 '循环扫描每张成绩表，分别进行汇总并计入某C2单元格
 For i = 1 To Worksheets.Count
 Set w1 = Worksheets(i)

 s = 0
 For j = 2 To 10
 s = s + w1.Cells(j, 2)
 Next j
 w1.Cells(2, 3) = s
 Next i
End Sub

Sub 登记()
 Dim i, k
 Dim wPerson As Worksheet, wAll As Worksheet
 Set wAll = Worksheets("总分榜")
 k = 2
 '循环扫描每张成绩表，把每张表的C2单元格分数，写入总分榜
 For i = 1 To Worksheets.Count
 Set wPerson = Worksheets(i)

 If wPerson.name <> "总分榜" Then
 wAll.Cells(k, 1) = wPerson.Cells(1, 2)
 wAll.Cells(k, 2) = wPerson.Cells(2, 3)
 k = k + 1
 End If
 Next i
End Sub

Excel 工作簿: 总分榜-子过程.adam...
文件 开始 插入 图表 数据 公式 数据 审阅 视图 开发工具 帮助
H10
A B C D E F G H I
1 姓名 总分
2
3 汇总并登记
4
5
6
7
8
9
10
总分榜 张三 李四 王
就绪 79%

这是按照一个过程的方法：比较产生优劣。

Option Explicit
直接将两段代码粘贴到一个宏中
Sub 汇总及登记()
 Dim i, j, s, k
 Dim wPerson As Worksheet, wAll As Worksheet

 '循环所有成绩表，分别汇总
 For i = 1 To Worksheets.Count
 Set wPerson = Worksheets(i)

 s = 0
 For j = 2 To 10
 s = s + wPerson.Cells(j, 2)
 Next j
 wPerson.Cells(2, 3) = s
 Next i

 Set wAll = Worksheets("总分榜")
 k = 2

 '循环所有成绩表，将C2写入总分榜
 For i = 1 To Worksheets.Count
 Set wPerson = Worksheets(i)

 If wPerson.name <> "总分榜" Then
 wAll.Cells(k, 1) = wPerson.Cells(1, 2)
 wAll.Cells(k, 2) = wPerson.Cells(2, 3)
 k = k + 1
 End If
 Next i
End Sub


```

Option Explicit
'主调过程，先调用“汇总”过程，再调用“登记”过程
Sub 汇总及登记()
    Call 汇总
    Call 登记
End Sub

Sub 汇总()
    Dim i, j, s
    Dim w1 As Worksheet
    '循环扫描每张
    For i = 1 To
        Set w1 =
        s = 0
        For j = 2 To
            s = s + w1.Cells(j, 2)
        Next j
        w1.Cells
    Next i
End Sub

Sub 登记()
    Dim i, k
    Dim wPerson As Worksheet, wAll As Worksheet
    Set wAll = Worksheets("总分榜")
    k = 2
    '循环扫描每张成绩表，把每张表的C2单元格分数，写入总分榜
    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)
        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub

```

过程的第二个好处就是他的灵活性：例如我们在程序里面增加两个按钮“只登记”“只汇总”

那么我们只需要添加两个按钮，然后关联到两个过程上，就一切 ok 了。

The image shows a VBA editor window on the left and an Excel spreadsheet on the right. The VBA code defines two subroutines: `Sub 汇总及登记()` which calls `汇总` and `登记`, and `Sub 登记()` which writes scores to a '总分榜' (Total Score List) worksheet. The Excel spreadsheet has columns for '姓名' (Name) and '总分' (Total Score), and buttons for '汇总并登记', '只汇总', and '只登记'. Red arrows point from the code to the corresponding buttons in the spreadsheet.

```
Option Explicit
'主调过程，先调用“汇总”过程，再调用“登记”过程
Sub 汇总及登记()
    Call 汇总
    Call 登记
End Sub

Sub 汇总()
    Dim i, j As Integer
    Dim w1 As Worksheet
    '循环扫描每成绩表，分别进行汇总并计入其C2单元格
    For i = 1 To Worksheets.Count
        Set w1 = Worksheets(i)

        s = 0
        For j = 2 To 10
            s = s + w1.Cells(j, 2)
        Next j
        w1.Cells(2, 3) = s
    Next i
End Sub

Sub 登记()
    Dim i, k
    Dim wPerson As Worksheet, wAll As Worksheet

    Set wAll = Worksheets("总分榜")
    k = 2
    '循环扫描每成绩表，把每张表的C2单元格分数，写入总分榜
    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub
```

但是在一个过程的代码里我们怎么办？

The image shows a VBA editor window on the left and an Excel spreadsheet on the right. The VBA code now contains both the summarizing and recording logic within a single `Sub 汇总及登记()`. Red arrows point from the code to the buttons in the spreadsheet, and red question marks are placed over the code to highlight the merged logic.

```
Option Explicit
'直接将两段代码粘贴到一个宏中
Sub 汇总及登记()
    Dim i, j As Integer, s, k
    Dim wPerson As Worksheet, wAll As Worksheet

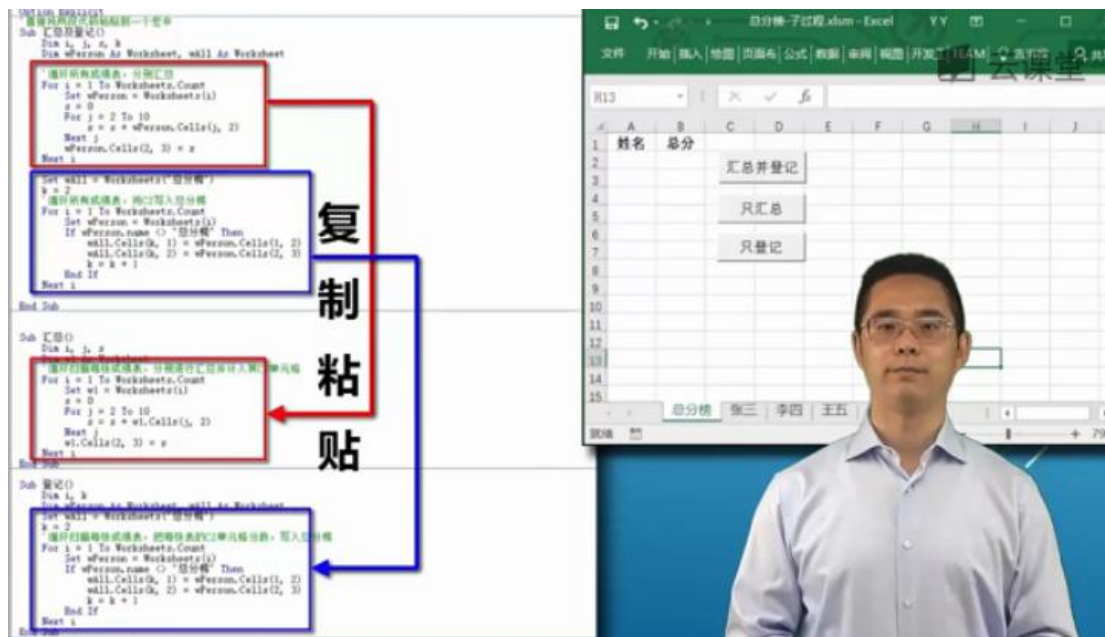
    '循环所有成绩表，分别汇总
    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

        s = 0
        For j = 2 To 10
            s = s + wPerson.Cells(j, 2)
        Next j
        wPerson.Cells(2, 3) = s
    Next i

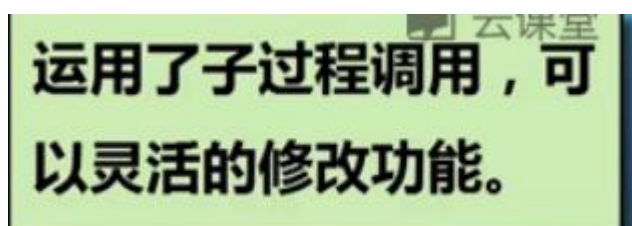
    Set wAll = Worksheets("总分榜")
    k = 2
    '循环所有成绩表，将C2写入总分榜
    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)

        If wPerson.name <> "总分榜" Then
            wAll.Cells(k, 1) = wPerson.Cells(1, 2)
            wAll.Cells(k, 2) = wPerson.Cells(2, 3)
            k = k + 1
        End If
    Next i
End Sub
```

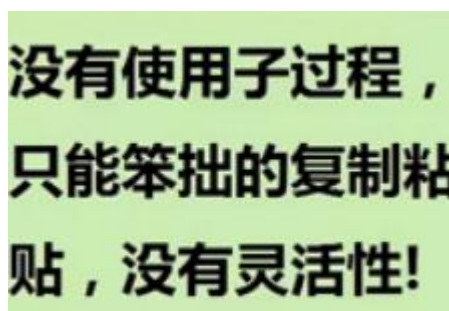
我们唯一的办法就是，将两个过程的代码复制出来，然后粘贴进去。



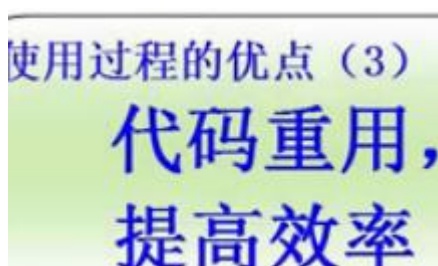
那么我们可以看出来，对于使用子过程的代码，我们可以随时添加新的按钮，添加新的功能。



而没有使用过程的代码没有这种灵活性。



那么灵活性就衍生出了第三个好处就是代码的重用性》



例如我们不适用过程的话，需要拷贝并建立两个过程;

1. 初始化

Dim i, j, k
Dim wPerson As Worksheet, wAll As Worksheet

遍历所有成绩表，分别汇总

For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
s = 0
For j = 2 To 10
s = s + wPerson.Cells(i, 2)
Next j
wPerson.Cells(2, 3) = s
Next i

遍历所有成绩表，将汇总后的总分写入总分表

k = 2
For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
If wPerson.Name <> "总分表" Then
wAll.Cells(k, 1) = wPerson.Cells(1, 2)
wAll.Cells(k, 2) = wPerson.Cells(2, 3)
k = k + 1
End If
Next i

2. 汇总

Dim i, j, s

遍历所有成绩表，分别进行汇总并写入总分表

For i = 1 To Worksheets.Count
Set w1 = Worksheets(i)
s = 0
For j = 2 To 10
s = s + w1.Cells(j, 2)
Next j
w1.Cells(2, 3) = s
Next i

3. 登记

Dim i, k

遍历所有成绩表，将每个表的口算成绩分数，写入总分表

k = 2
For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
If wPerson.Name <> "总分表" Then
wAll.Cells(k, 1) = wPerson.Cells(1, 2)
wAll.Cells(k, 2) = wPerson.Cells(2, 3)
k = k + 1
End If
Next i

总分表-子过程

文件 开始 插入 绘图 页面布局 公式 数据 审阅 开发工具 窗口 帮助

H13

	A	B	C	D
1	姓名	总分		
2			汇总并登记	
3				
4			只汇总	
5				
6			只登记	
7				
8				
9				
10				
11				
12				
13				
14				
15				

总分表 张三 李四

张晴

也就是说：

1. 初始化

Dim i, j, k
Dim wPerson As Worksheet, wAll As Worksheet

遍历所有成绩表，分别汇总

For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
s = 0
For j = 2 To 10
s = s + wPerson.Cells(i, 2)
Next j
wPerson.Cells(2, 3) = s
Next i

遍历所有成绩表，将汇总后的总分写入总分表

k = 2
For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
If wPerson.Name <> "总分表" Then
wAll.Cells(k, 1) = wPerson.Cells(1, 2)
wAll.Cells(k, 2) = wPerson.Cells(2, 3)
k = k + 1
End If
Next i

2. 汇总

Dim i, j, s

遍历所有成绩表，分别进行汇总并写入总分表

For i = 1 To Worksheets.Count
Set w1 = Worksheets(i)
s = 0
For j = 2 To 10
s = s + w1.Cells(j, 2)
Next j
w1.Cells(2, 3) = s
Next i

3. 登记

Dim i, k

遍历所有成绩表，将每个表的口算成绩分数，写入总分表

k = 2
For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
If wPerson.Name <> "总分表" Then
wAll.Cells(k, 1) = wPerson.Cells(1, 2)
wAll.Cells(k, 2) = wPerson.Cells(2, 3)
k = k + 1
End If
Next i

总分表-子过程

文件 开始 插入 绘图 页面布局 公式 数据 审阅 开发工具 窗口 帮助

H13

	A	B	C	D	E	F	G	H	I	J
1	姓名	总分								
2			汇总并登记							
3										
4			只汇总							
5										
6			只登记							
7										
8										
9										
10										
11										
12										
13										
14										
15										

总分表 张三 李四 王五


张晴

大段代码被重复多遍，
效率低下且容易出错。

Option Explicit
说明过程、宏调用“汇总”过程，再调用“登记”过程
Sub 汇总及登记()
Call 汇总
Call 登记
End Sub
Sub 汇总()
Dim i, j, s
Dim w1 As Worksheet
循环扫描每张成绩表，分数进行汇总并计入其总分
For i = 1 To Worksheets.Count
Set w1 = Worksheets(i)
s = 0
For j = 2 To 10
s = s + w1.Cells(j, 2)
Next j
w1.Cells(2, 3) = s
Next i
End Sub
Sub 登记()
Dim i, k
Dim wPerson As Worksheet, wAll
Set wAll = Worksheets("总分表")
k = 2
循环扫描每张成绩表，把每张表的总分计入总分表
For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
If wPerson.name <> "总分表" Then
wAll.Cells(k, 1) = wPerson.Cells(1, 2)
wAll.Cells(k, 2) = wPerson.Cells(2, 3)
k = k + 1
End If
Next i
End Sub

云课堂

没有重复的大段代码



Option Explicit
说明过程、宏调用“汇总”过程，再调用“登记”过程
Sub 汇总及登记()
Call 汇总
Call 登记
End Sub
Sub 汇总()
Dim i, j, s
Dim w1 As Worksheet
循环扫描每张成绩表，分数进行汇总并计入其总分
For i = 1 To Worksheets.Count
Set w1 = Worksheets(i)
s = 0
For j = 2 To 10
s = s + w1.Cells(j, 2)
Next j
w1.Cells(2, 3) = s
Next i
End Sub
Sub 登记()
Dim i, k
Dim wPerson As Worksheet, wAll
Set wAll = Worksheets("总分表")
k = 2
循环扫描每张成绩表，把每张表的总分计入总分表
For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
If wPerson.name <> "总分表" Then
wAll.Cells(k, 1) = wPerson.Cells(1, 2)
wAll.Cells(k, 2) = wPerson.Cells(2, 3)
k = k + 1
End If
Next i
End Sub

大段代码被重复多遍，
效率低下且容易出错。

实际上在复杂的程序里面都会看到一个程序被成千上百次的使用。

把可能被多次使用的代码，写成过程供其他程序调用！

Option Explicit
说明过程、宏调用“汇总”过程，再调用“登记”过程
Sub 汇总及登记()
Call 汇总
Call 登记
End Sub
Sub 汇总()
Dim i, j, s
Dim w1 As Worksheet
循环扫描每张成绩表，分数进行汇总并计入其总分
For i = 1 To Worksheets.Count
Set w1 = Worksheets(i)
s = 0
For j = 2 To 10
s = s + w1.Cells(j, 2)
Next j
w1.Cells(2, 3) = s
Next i
End Sub
Sub 登记()
Dim i, k
Dim wPerson As Worksheet, wAll
Set wAll = Worksheets("总分表")
k = 2
循环扫描每张成绩表，把每张表的总分计入总分表
For i = 1 To Worksheets.Count
Set wPerson = Worksheets(i)
If wPerson.name <> "总分表" Then
wAll.Cells(k, 1) = wPerson.Cells(1, 2)
wAll.Cells(k, 2) = wPerson.Cells(2, 3)
k = k + 1
End If
Next i
End Sub

模块化 程序设计

为什么使用过程：

- (1) 程序结构清晰
- (2) 功能灵活易改
- (3) 避免代码重复

```
Option Explicit
' 主调过程，先调用“汇总”过程，再调用“登记”过程
Sub 汇总及登记()
    Call 汇总
    Call 登记
End Sub

Sub 汇总()
    Dim i, j, s
    Dim w1 As Worksheet
    ' 循环扫描每张成绩表，分别进行汇总并计入其C3单元格
    For i = 1 To Worksheets.Count
        Set w1 = Worksheets(i)
        s = 0
        For j = 1 To w1.Cells(1, 2)
            s = s + w1.Cells(j, 2)
        Next j
        w1.Cells(2, 3) = s
    Next i
End Sub

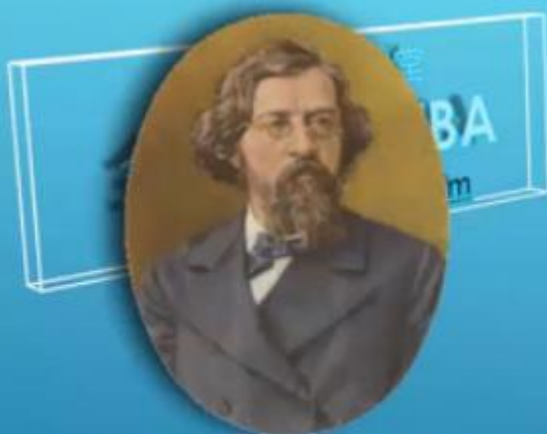
Sub 登记()
    Dim i, k
    Dim wPerson As Worksheet, wAll As Worksheet
    Set wAll = Worksheets("总分榜")
    k = 2
    ' 循环扫描每张成绩表，把每张表的C3单元格分数，写入总分榜
    For i = 1 To Worksheets.Count
        Set wPerson = Worksheets(i)
        wAll.Cells(k, 1) = wPerson.Cells(1, 2)
        wAll.Cells(k, 2) = wPerson.Cells(2, 3)
        k = k + 1
    Next i
End Sub
```

厂长，负责协调

一车间，负责汇总

二车间，负责登记

模块化设计，过程化管理！



“程序来源于生活，却又高于生活”

——（俄）车尔尼雪夫斯基

```
Option Explicit
```

```
' 主调过程，先调用“汇总”过程，再调用“登记”过程
```

```
Sub 汇总及登记()
```

```
    Call 汇总
```

```
    Call 登记
```

```
End Sub
```

```
Sub 汇总()
```

```
    Dim i, j, s
```

```
    Dim w1 As Worksheet
```

```
' 循环扫描每张成绩表，分别进行汇总并计入其C2单元格
```

```
    For i = 1 To Worksheets.Count
```

```
        Set w1 = Worksheets(i)
```

```
        s = 0
```

```
        For j = 2 To 10
```

```
            s = s + w1.Cells(j, 2)
```

```
        Next j
```

```
        w1.Cells(2, 3) = s
```

```
    Next i
```

```
End Sub
```

```
Sub 登记()
```

```
    Dim i, k
```

```
    Dim wPerson As Worksheet, wAll As Worksheet
```

可以省略！

Option Explicit

'主调过程，先调用“汇总”过程，再调用“登记”过程

Sub 汇总及登记

 汇总

 登记

End Sub

Sub 汇总()

 Dim i, j, s

 Dim w1 As Worksheet

 '循环扫描每张成

 For i = 1 To Worksheets.Count

 Set w1 = Worksheets(i)

 s = 0

 For j = 2 To 10

 s = s + w1.Cells(j, 2)

 Next j

 w1.Cells(2, 3) = s

 Next i

End Sub

Sub 登记()

 Dim i, k

 Dim wPerson As Worksheet, wAll As Worksheet

调用过程时，直接
写过程名即可！