

Streamlining your code

Chapter 3 - Use variables for duplicate command strings

[StPendl](#) Oct 29, 2011

On a second glance we can see some places, where redundant graphics command strings are used. To reduce the amount of work to change them, we introduce string variables that hold the command strings.

This way the following lines of code:

```
#w.up      "cls;down;fill blue;flush"
#w.down    "cls;down;fill blue;flush"
#w.side1   "cls;down;fill blue;flush"
#w.adds2   "cls;down;fill blue;flush"

'General Body Resistance Color
#w.37 "cls; down; fill 21 228 255;flush"  'light blue

'Color of Terminal Wires
#w.42 "cls; down; fill 127 127 127;flush"
#w.43 "cls; down; fill 127 127 127;flush"

#w.Band1 "cls; down;fill 21 228 255;flush"
#w.Band2 "cls; down;fill 21 228 255;flush"
#w.Band3 "cls; down;fill 21 228 255;flush"
#w.Band4 "cls; down;fill 21 228 255;flush"
```

Will be replaced by their equivalents where only one line has to be changed:

```
CommandString$ = "cls;down;fill blue;flush"
#w.up      CommandString$
#w.down    CommandString$
#w.side1   CommandString$
#w.adds2   CommandString$

'Color of Terminal Wires
CommandString$ = "cls; down; fill 127 127 127;flush"
#w.42 CommandString$
#w.43 CommandString$

'General Body Resistance Color
```

```
CommandString$ = "cls; down; fill 21 228 255;flush" 'light blue
#w.37 CommandString$

#w.Band1 CommandString$
#w.Band2 CommandString$
#w.Band3 CommandString$
#w.Band4 CommandString$
```

The complete code now looks like this.

```
'Resistor Calculator.bas
'Author: salaion Yahoo! Group
'Date: 27.11.10
'
' 27.11.10 00:18:50 - Initial as posted

' 27.11.10 00:21:40 - added array for colors and reduced redundant code for color boxes

' 27.11.10 00:34:07 - replaced duplicate command strings by variables

nomainwin
WindowWidth = 850:WindowHeight = 600
UpperLeftX=int( (DisplayWidth- WindowWidth) /2)
UpperLeftY=int( (DisplayHeight- WindowHeight) /2)
BackgroundColor$ = "green"

dim Colors$(10,2), Tolerances$(3,2)

[Colors]
DATA "Black",    "  0  0  0"
DATA "Brown",    "170 100 20"
DATA "Red",       "255  0  0"
DATA "Orange",   "255 180  0"
DATA "Yellow",   "255 255 55"
DATA "Green",     " 45 157 40"
DATA "Blue",      "  0  0 255"
DATA "Violet",    "170  0 180"
DATA "Gray",      "127 127 127"
DATA "White",     "255 255 255"

[Tolerances]
DATA "Gold",      "255 238 51"
DATA "Silver",    "200 200 250"
```

```
DATA "None", " 21 228 255"

'Fill the arrays
RESTORE [Colors]

FOR i = 1 to 10
    READ ColorName$, ColorValue$
    Colors$(i,1) = ColorName$
    Colors$(i,2) = ColorValue$
NEXT

RESTORE [Tolerances]

FOR i = 1 to 3
    READ ColorName$, ColorValue$
    Tolerances$(i,1) = ColorName$
    Tolerances$(i,2) = ColorValue$
NEXT

STATICTEXT #w.0hm, "" , 500, 200, 300, 20
STATICTEXT #w.Tole,"" , 500, 230, 300, 20

STATICTEXT #w,Colors$( 1,1), 10, 42, 50, 20
STATICTEXT #w,Colors$( 2,1), 10, 82, 50, 20
STATICTEXT #w,Colors$( 3,1), 10, 122, 50, 20
STATICTEXT #w,Colors$( 4,1), 10, 162, 50, 20
STATICTEXT #w,Colors$( 5,1), 10, 202, 50, 20
STATICTEXT #w,Colors$( 6,1), 10, 242, 50, 20
STATICTEXT #w,Colors$( 7,1), 10, 282, 50, 20
STATICTEXT #w,Colors$( 8,1), 10, 322, 50, 20
STATICTEXT #w,Colors$( 9,1), 10, 362, 50, 20
STATICTEXT #w,Colors$(10,1), 10, 402, 50, 20

STATICTEXT #w,Tolerances$(1,1), 470, 42, 50, 20
STATICTEXT #w,Tolerances$(2,1), 470, 82, 50, 20
STATICTEXT #w,Tolerances$(3,1), 470, 122, 50, 20

STATICTEXT #w,"K=Kilo " , 500, 300,100, 20
STATICTEXT #w,"M=Mega " , 500, 330,100, 20
STATICTEXT #w,
"Light Blue is The Default Color of Resistance " , 500, 360,400, 20

'Band1
groupbox #w.FirstDigit, "First Digit", 70,10,80,430
radiobutton #w.Blackr1 , "", [Band1],[Band1] ,75, 45,20,20
```

```
'Black=0
    radiobutton #w.Brownr1 , "", [Band1],[Band1] ,75, 85,20,20
'Brown=1
    radiobutton #w.Redr1 , "", [Band1],[Band1] ,75,125,20,20'Red=2
    radiobutton #w.Oranger1 , "", [Band1],[Band1] ,75,165,20,20
'Orange=3
    radiobutton #w.Yellowr1 , "", [Band1],[Band1] ,75,205,20,20
'Yellow=4
    radiobutton #w.Greenr1 , "", [Band1],[Band1] ,75,245,20,20
'Green=5
    radiobutton #w.Bluer1 , "", [Band1],[Band1] ,75,285,20,20'Blue=6
    radiobutton #w.Violetr1 , "", [Band1],[Band1] ,75,325,20,20
'Violet=7
    radiobutton #w.Grayr1 , "", [Band1],[Band1] ,75,365,20,20'Gray=8
    radiobutton #w.Whiter1 , "", [Band1],[Band1] ,75,405,20,20
'White=9

    'Band2
    groupbox #w.SecondtDigit, "Second Digit", 180,10,80,430
    radiobutton #w.Blackr2 , "", [Band2],[Band2] ,185, 45,20,20
'Black=0
    radiobutton #w.Brownr2 , "", [Band2],[Band2] ,185, 85,20,20
'Brown=1
    radiobutton #w.Redr2 , "", [Band2],[Band2] ,185,125,20,20'Red=2
    radiobutton #w.Oranger2 , "", [Band2],[Band2] ,185,165,20,20
'Orange=3
    radiobutton #w.Yellowr2 , "", [Band2],[Band2] ,185,205,20,20
'Yellow=4
    radiobutton #w.Greenr2 , "", [Band2],[Band2] ,185,245,20,20
'Green=5
    radiobutton #w.Bluer2 , "", [Band2],[Band2] ,185,285,20,20
'Blue=6
    radiobutton #w.Violetr2 , "", [Band2],[Band2] ,185,325,20,20
'Violet=7
    radiobutton #w.Grayr2 , "", [Band2],[Band2] ,185,365,20,20
'Gray=8
    radiobutton #w.Whiter2 , "", [Band2],[Band2] ,185,405,20,20
'White=9

    'Band3
    groupbox #w.Multiplier, "Multiplier", 280,10,80,430
    radiobutton #w.Blackr3 , "", [Band3],[Band3] ,285, 45,20,20
'Black=0
    radiobutton #w.Brownr3 , "", [Band3],[Band3] ,285, 85,20,20
'Brown=1
    radiobutton #w.Redr3 , "", [Band3],[Band3] ,285,125,20,20'Red=2
```

```
    radiobutton #w.Oranger3 , "", [Band3],[Band3] ,285,165,20,20
'Orange=3
    radiobutton #w.Yellowr3 , "", [Band3],[Band3] ,285,205,20,20
'Yellow=4
    radiobutton #w.Greenr3 , "", [Band3],[Band3] ,285,245,20,20
'Green=5
    radiobutton #w.Bluer3 , "", [Band3],[Band3] ,285,285,20,20
'Blue=6
    radiobutton #w.Violetr3 , "", [Band3],[Band3] ,285,325,20,20
'Violet=7
    radiobutton #w.Grayr3 , "", [Band3],[Band3] ,285,365,20,20
'Gray=8
    radiobutton #w.Whiter3 , "", [Band3],[Band3] ,285,405,20,20
'White=9

    'Band4
    groupbox #w.Tolerance, "Tolerance", 380,10,80,430
    radiobutton #w.Goldr , "", [Band4],[Band4] ,385, 45,20,20
'Gold=5%
    radiobutton #w.Silverr , "", [Band4],[Band4] ,385, 85,20,20
'Silver=10%
    radiobutton #w.Noner , "", [Band4],[Band4] ,385,125,20,20
'None=20%

    'Fram
    graphicbox #w.add, 530,60,292,30
'xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
    stylebits #w.add, 0,_WS_BORDER, 0,0

    graphicbox #w.up, 523,53,306,7
    stylebits #w.up, 0,_WS_BORDER, 0,0'

    graphicbox #w.down, 523,90,306,7
    stylebits #w.down, 0,_WS_BORDER, 0,0'

    graphicbox #w.side1, 523,53,7,44
    stylebits #w.side1, 0,_WS_BORDER, 0,0'

    graphicbox #w.adds2, 822,53,7,44
    stylebits #w.adds2, 0,_WS_BORDER, 0,0'

    'Band1
    graphicbox #w.Black1 , 100, 40,30,30
    graphicbox #w.Brown1 , 100, 80,30,30
    graphicbox #w.Red1 , 100,120,30,30
    graphicbox #w.Orange1, 100,160,30,30
```

```
graphicbox #w.Yellow1, 100,200,30,30
graphicbox #w.Green1 , 100,240,30,30
graphicbox #w.Blue1 , 100,280,30,30
graphicbox #w.Violet1, 100,320,30,30
graphicbox #w.Gray1 , 100,360,30,30
graphicbox #w.White1 , 100,400,30,30
```

'Band2

```
graphicbox #w.Black2 , 210, 40,30,30
graphicbox #w.Brown2 , 210, 80,30,30
graphicbox #w.Red2 , 210,120,30,30
graphicbox #w.Orange2, 210,160,30,30
graphicbox #w.Yellow2, 210,200,30,30
graphicbox #w.Green2 , 210,240,30,30
graphicbox #w.Blue2 , 210,280,30,30
graphicbox #w.Violet2, 210,320,30,30
graphicbox #w.Gray2 , 210,360,30,30
graphicbox #w.White2 , 210,400,30,30
```

'Band3

```
graphicbox #w.Black3 , 310, 40,30,30
graphicbox #w.Brown3 , 310, 80,30,30
graphicbox #w.Red3 , 310,120,30,30
graphicbox #w.Orange3, 310,160,30,30
graphicbox #w.Yellow3, 310,200,30,30
graphicbox #w.Green3 , 310,240,30,30
graphicbox #w.Blue3 , 310,280,30,30
graphicbox #w.Violet3, 310,320,30,30
graphicbox #w.Gray3 , 310,360,30,30
graphicbox #w.White3 , 310,400,30,30
```

'Band4

```
graphicbox #w.Gold , 410, 40,30,30
graphicbox #w.Silver, 410, 80,30,30
graphicbox #w.None , 410,120,30,30
```

'Selected Bands of Body Resistance

```
graphicbox #w.Band1, 155,470,15,35
graphicbox #w.Band2, 185,470,15,35
graphicbox #w.Band3, 215,470,15,35
graphicbox #w.Band4, 255,470,15,35
```

```
stylebits #w.Band1, 0,_WS_BORDER,0,0
stylebits #w.Band2, 0,_WS_BORDER,0,0
stylebits #w.Band3, 0,_WS_BORDER,0,0
stylebits #w.Band4, 0,_WS_BORDER,0,0
```

```
'General Body Resistance
graphicbox #w.37, 130,470,168,35
stylebits #w.37, 0,_WS_BORDER,0,0

'Terminal Wires
graphicbox #w.42, 80,485,50,5
graphicbox #w.43, 300,485,50,5

open "Resistor Calculator" for window_nf as #w
#w "trapclose [quit]"
#w "font Times_New_Roman 13"

#w.add
"cls;down;fill yellow;font Times_New_Roman 16 bold;color red;backcolor
yellow"
#w.add "place 5 20;\Resistor Color Code of 4 Bands"
#w.add "flush"

CommandString$ = "cls;down;fill blue;flush"
#w.up CommandString$
#w.down CommandString$
#w.side1 CommandString$
#w.adds2 CommandString$

FOR Band = 1 to 3
    FOR Color = 1 to 10
        Handle$ = "#w."; Colors$(Color,1); Band

        #Handle$ "cls;down;fill "; Colors$(Color,2); ";flush"
    NEXT
NEXT

FOR Tolerance = 1 to 3
    Handle$ = "#w."; Tolerances$(Tolerance,1)

    #Handle$ "cls;down;fill "; Tolerances$(Tolerance,2); ";flush"
NEXT

'Color of Terminal Wires
CommandString$ = "cls; down; fill 127 127 127;flush"
#w.42 CommandString$
#w.43 CommandString$

'General Body Resistance Color
CommandString$ = "cls; down; fill 21 228 255;flush" 'light blue
```

```
#w.37 CommandString$
```

```
#w.Band1 CommandString$  
#w.Band2 CommandString$  
#w.Band3 CommandString$  
#w.Band4 CommandString$
```

```
[Band1]
```

```
#w.Blackr1 "value? Blackr1$"  
#w.Brownr1 "value? Brownr1$"  
#w.Redr1 "value? Redr1$"  
#w.Oranger1 "value? Oranger1$"  
#w.Yellowr1 "value? Yellowr1$"  
#w.Greenr1 "value? Greenr1$"  
#w.Bluer1 "value? Bluer1$"  
#w.Violetr1 "value? Violetr1$"  
#w.Grayr1 "value? Grayr1$"  
#w.Whiter1 "value? Whiter1$"
```

```
select case  
  case Blackr1$="set"  
    case1=1  
    #w.Band1, "home; down; fill 0 0 0;flush"  
    Band1value=0*10'Black  
  case Brownr1$="set"  
    case1=1  
    #w.Band1, "home; down; fill 170 100 20;flush"  
    Band1value=1*10'Brown  
  case Redr1$="set"  
    case1=1  
    #w.Band1, "home; down; fill 255 0 0;flush"  
    Band1value=2*10'Red  
  case Oranger1$="set"  
    case1=1  
    #w.Band1, "home; down; fill 255 180 0;flush"  
    Band1value=3*10  
  case Yellowr1$="set"  
    case1=1  
    #w.Band1, "home; down; fill 255 255 55;flush"  
    Band1value=4*10  
  case Greenr1$="set"  
    case1=1  
    #w.Band1, "home; down; fill 45 157 40;flush"  
    Band1value=5*10  
  case Bluer1$="set"  
    case1=1
```

```
#w.Band1, "home; down; fill 0 0 255;flush"
Band1value=6*10
case Violetr1$="set"
case1=1
#w.Band1, "home; down; fill 170 0 180;flush"
Band1value=7*10
case Grayr1$="set"
case1=1
#w.Band1, "home; down; fill 127 127 127;flush"
Band1value=8*10
case Whiter1$="set"
case1=1
#w.Band1, "home; down; fill 255 255 255;flush"
Band1value=9*10

case else
wait
```

```
end select
```

[Band2]

```
#w.Blackr2 "value? Blackr2$"
#w.Brownr2 "value? Brownr2$"
#w.Redr2 "value? Redr2$"
#w.Oranger2 "value? Oranger2$"
#w.Yellowr2 "value? Yellowr2$"
#w.Greenr2 "value? Greenr2$"
#w.Bluer2 "value? Bluer2$"
#w.Violetr2 "value? Violetr2$"
#w.Grayr2 "value? Grayr2$"
#w.Whiter2 "value? Whiter2$"

select case
case Blackr2$="set"
case2=2
#w.Band2, "home; down; fill 0 0 0;flush"
Band2value=0'Black
case Brownr2$="set"
case2=2
#w.Band2, "home; down; fill 170 100 20;flush"
Band2value=1'Brown
case Redr2$="set"
case2=2
#w.Band2, "home; down; fill 255 0 0;flush"
Band2value=2'Red
case Oranger2$="set"
```

```
case2=2
#w.Band2, "home; down; fill 255 180 0;flush"
Band2value=3
case Yellowr2$="set"
case2=2
#w.Band2, "home; down; fill 255 255 55;flush"
Band2value=4
case Greenr2$="set"
case2=2
#w.Band2, "home; down; fill 45 157 40;flush"
Band2value=5
case Bluer2$="set"
case2=2
#w.Band2, "home; down; fill 0 0 255;flush"
Band2value=6
case Violetr2$="set"
case2=2
#w.Band2, "home; down; fill 170 0 180;flush"
Band2value=7
case Grayr2$="set"
case2=2
#w.Band2, "home; down; fill 127 127 127;flush"
Band2value=8
case Whiter2$="set"
case2=2
#w.Band2, "home; down; fill 255 255 255;flush"
Band2value=9

case else
wait
end select
```

[Band3]

```
#w.Blackr3 "value? Blackr3$"
#w.Brownr3 "value? Brownr3$"
#w.Redr3 "value? Redr3$"
#w.Oranger3 "value? Oranger3$"
#w.Yellowr3 "value? Yellowr3$"
#w.Greenr3 "value? Greenr3$"
#w.Bluer3 "value? Bluer3$"
#w.Violetr3 "value? Violetr3$"
#w.Grayr3 "value? Grayr3$"
#w.Whiter3 "value? Whiter3$"

select case
case Blackr3$="set"
```

```
case3=3
#w.Band3, "home; down; fill 0 0 0;flush"
Band3value=1'Black
case Brownr3$="set"
case3=3
#w.Band3, "home; down; fill 170 100 20;flush"
Band3value=10'Brown
case Redr3$="set"
case3=3
#w.Band3, "home; down; fill 255 0 0;flush"
Band3value=100'Red
case Oranger3$="set"
case3=3
#w.Band3, "home; down; fill 255 180 0;flush"
Band3value=1000
case Yellowr3$="set"
case3=3
#w.Band3, "home; down; fill 255 255 55;flush"
Band3value=10000
case Greenr3$="set"
case3=3
#w.Band3, "home; down; fill 45 157 40;flush"
Band3value=100000
case Bluer3$="set"
case3=3
#w.Band3, "home; down; fill 0 0 255;flush"
Band3value=1000000
case Violetr3$="set"
case3=3
#w.Band3, "home; down; fill 170 0 180;flush"
Band3value=10000000
case Grayr3$="set"
case3=3
#w.Band3, "home; down; fill 127 127 127;flush"
Band3value=100000000
case Whiter3$="set"
case3=3
#w.Band3, "home; down; fill 255 255 255;flush"
Band3value=1000000000

case else

if case1= 0 then notice "Please Select Color of Band 1"

wait
end select
```

```
vv=(Band1value+Band2value)*Band3value

if vv<=999 then Print #w.Ohm, "Resistance Value=";vv;" Ohm"
if vv>=1000 and vv<=999999 then Print #w.Ohm,
"Resistance Value=";vv/1000;" K Ohm"
if vv>=1000000 then Print #w.Ohm,
"Resistance Value=";vv/1000000;" M Ohm"

[Band4]
#w.Golldr "value? Golldr$"
#w.Silverr "value? Silverr$"
#w.Noner "value? Noner$"

select case
  case Golldr$="set"
    'case4=4
    #w.Band4, "home; down; fill 250 235 90;flush"
    Band4value=5'Black

  case Silverr$="set"
    'case4=4
    #w.Band4, "home; down; fill 200 200 250;flush"
    Band4value=10'Brown

  case Noner$="set"
    'case4=4
    #w.Band4, "home; down; fill 21 228 255;flush"
    Band4value=20'Brown

  case else

    'if case4= 0 then notice "Please Select Color of Band 3"
    if case2= 0 then notice "Please Select Color of Band 2"
    if case1= 0 then notice "Please Select Color of Band 1"

    wait

    'notice "Please Select Color"
end select
'if case4= 0 then notice "Please Select Color of Band 3"

if Band4value>0 then Print #w.Tole,
"Tolerance Value =" ";" -+ ";"Band4value;"%"

wait
```

```
[quit]
  close #w
END
```

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