Time Zone With Clickable Map

No need for data tables. The Time Zones are calculated from the RGB values of the pixel color clicked. Red values ending in an even number are GMT + while those ending in an odd number are GMT -. Values ending in 1 or 2 are whole hour differences. Values ending in 3 or 4 increase that difference by 1/2 hour. There were one or two small areas that differed by 3/4. Clicking there will result in full hour differences.

The Green and Blue values determine the exact number of hours. The Green xx0 holds the tens units and the Blue xx0 holds the single units. Thus an RGB value of 121-210-238 decodes to GMT -8.

There was no attempt made to adjust for Daylight Savings Time.

There are two required external files - WikiCommonsWorldMap.PNG and PBImage DLL by Dean Hodgson

Please note: The map is a .png file, but fairly large at 1.42 mb.

Edit: The map file is now available at long term storage.
http://lbdepot.info/file/view/WikiCommonsWorldMap.PNG

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' Time Zone Extreme Challenge Contest
' http://libertybasic.conforums.com/index.cgi?board=contests&action=di
splay&num=1222370358
' Janet L Terra, October 5, 2008
' GetSystemTime Function courtesty of API's for LB by Alyce Watson
' http://alycesrestaurant.com/apilb/index.htm
' Map modified from World Time Zone Map available at WikiCommons
' http://upload.wikimedia.org/wikipedia/commons/3/3d/Timezones_optimiz
ed.png

    Struct SystemTime, _
        wYear as Short, _
        wMonth as Short, _
        wDayOfWeek as Short, _
        wDay as Short, _
        wHour as Short, _
        wMinute as Short, _
        wSecond as Short, _
        wMilliseconds as Short

    WindowWidth = 800
    WindowHeight = 600
    UpperLeftX = Int((DisplayWidth - WindowWidth) / 2)
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    UpperLeftY = Int((DisplayHeight - WindowHeight) / 2)

    dst$ = "* Daylight Savings Time is not factored into "; _
        "these time calculations."

    Graphicbox #main.map, 20, 20, 600, 500
    StaticText #main.gmt0, "", 650, 30, 120, 20
    StaticText #main.gmt1, "", 650, 50, 120, 20
    StaticText #main.gmt2, "", 650, 70, 120, 40
    StaticText #main.lct0, "", 650, 150, 120, 20
    StaticText #main.lct1, "", 650, 170, 120, 20
    StaticText #main.lct2, "", 650, 190, 120, 40
    StaticText #main.slt0, "", 650, 270, 120, 20
    StaticText #main.slt1, "", 650, 290, 120, 20
    StaticText #main.slt2, "", 650, 310, 120, 40
    StaticText #main.dst, dst$, 650, 390, 120, 120

    Open "Time Zones" for Window as #main
    #main, "Font Verdana 11 Bold"
    #main, "Trapclose [XbyTrap]"
    #main.map, "Vertscrollbar On 0 550"
    #main.map, "Horizscrollbar On 0 1800"
    #main.map, "Down; Place -2 -2"
    #main.map, "Boxfilled 2400 1200; Flush"
    #main.gmt0, "GMT / UTC"
    Call PostTimes ""

    map$ = "http://lbdepot.info/file/view/WikiCommonsWorldMap.PNG"

    Open "pbimage.dll" for DLL as #pb
    CallDLL #pb, "IxGetImage", _
        1 as Long, _
        map$ as Ptr, _
        hMap as uLong
    Loadbmp "WorldMap", hMap
    #main.map, "Down; Drawbmp WorldMap 0 0; Flush"
    Close #pb
    hDC = GetDC(hWnd(#main.map))
    noCursor = LoadCursor(32648)
    #main.map, "When leftButtonDown [MapTime]"

Wait

[XbyTrap]
    Call ReleaseDC hWnd(#main.map), hDC
    Unloadbmp "WorldMap"
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    Close #main
End

[MapTime]
    xVar = MouseX
    yVar = MouseY
    PixelLong = PixelLong(hDC, xVar, yVar)
    RGB$ = RGB$(PixelLong)
    ValidPixel = ValidPixel(hDC, xVar, yVar)
    If ValidPixel = 1 Then
        h0 = Val(Right$(Word$(RGB$, 1, "-"), 1))
        h1 = Val(Right$(Word$(RGB$, 2, "-"), 1))
        h2 = Val(Right$(Word$(RGB$, 3, "-"), 1))
        nHrs = h1 * 10 + h2
        If h0 > 2 Then nHrs = nHrs + 0.5
        If h0 Mod 2 = 0 Then
            hrsInc = 1
        Else
            hrsInc = -1
        End If
        Call PostTimes ""
        GetSLT$ = GetSLT$(hrsInc, nHrs)
        #main.slt0, Word$(GetSLT$, 1, "*")
        #main.slt1, Word$(GetSLT$, 2, "*")
        #main.slt2, Word$(GetSLT$, 3, "*")
    Else
        Call SetCursor noCursor
        CallDLL #kernel32, "Sleep", 250 as Long, result as Void
        Cursor Normal
    End If
Wait

Function ValidPixel(hDC, xVar, yVar)
    PixelLong = PixelLong(hDC, xVar, yVar)
    ValidPixel = 1
    For x = -3 to 3
        p = PixelLong(hDC, xVar + x, yVar)
        If p <> PixelLong Then
            ValidPixel = 0
        End If
    Next x
    If ValidPixel = 0 Then
        Exit Function
    End If
    For y = -4 to 4
        p = PixelLong(hDC, xVar, yVar + y)
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        If p <> PixelLong Then
            ValidPixel = 0
        End If
    Next y
    If ValidPixel = 0 Then
        Exit Function
    End If
End Function

Function PixelLong(hDC, xVar, yVar)
    CallDLL #gdi32, "GetPixel", _
        hDC as uLong, _
        xVar as Long, _
        yVar as Long, _
        PixelLong as Long
End Function

Function RGB$(LongPixel)
    RedHue = LongPixel And 255
    GreenHue = (LongPixel And 65280)/256
    BlueHue = (LongPixel And 16711680)/65536
    RGB$ = Str$(RedHue);"-";Str$(GreenHue);"-";Str$(BlueHue)
End Function

Function GetGMT$()
    CallDLL #kernel32, "GetSystemTime", _
        SystemTime as Struct, _
        result as Long
    hr$ = Right$("0";Str$(SystemTime.wHour.struct), 2)
    min$ = Right$("0";Str$(SystemTime.wMinute.struct), 2)
    GetGMT$ = hr$;":";min$
End Function

Function GetGMD$()
    dWeek$ =
"Sunday Monday Tuesday Wednesday Thursday Friday Saturday"
    mYear$ = "Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec"
    yr$ = Str$(SystemTime.wYear.struct)
    d = SystemTime.wDayOfWeek.struct
    d$ = Right$("0";SystemTime.wDay.struct, 2)
    day$ = Word$(dWeek$, d + 1)
    mon$ = Word$(mYear$, SystemTime.wMonth.struct)
    GetGMD$ = day$;Chr$(10);Chr$(13);mon$;" ";d$;", ";yr$
End Function

Function GetLCT$()
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    GetLCT$ = Word$(Time$(), 1, ":");":";Word$(Time$(), 2, ":")
End Function

Function GetLCD$()
    dWeek$ = "Tuesday Wednesday Thursday Friday Saturday "; _
        "Sunday Monday"
    d = Date$("days") Mod 7
    GetLCD$ = Word$(dWeek$, d + 1);Chr$(10);Chr$(13);Date$()
End Function

Function GetBias(GMT$, t2$)
    h1 = Val(Word$(GMT$, 1, ":"))
    h2 = Val(Word$(t2$, 1, ":"))
    m1 = Val(Word$(GMT$, 2, ":"))
    m2 = Val(Word$(t2$, 2, ":"))
    If m2 > m1 Then
        h1 = h1 - 1
        m1 = m1 + 60
    End If
    b1 = h1 - h2
    b2 = m1 - m2
    If b2 = 30 Then
        b2 = 0.5
    End If
    GetBias = 0 - (b1 + b2)
End Function

Function GetSLT$(hrInc, hrBias)
    If hrInc = 1 Then
        GetSLT$ = "GMT + "
    Else
        GetSLT$ = "GMT - "
    End If
    GetSLT$ = GetSLT$;hrBias
    GetGMT$ = GetGMT$()
    SLD$ = GetGMD$()
    hG = Val(Word$(GetGMT$, 1, ":"))
    mG = Val(Word$(GetGMT$, 2, ":"))
    hS = hG + Int(hrBias) * hrInc
    mS = mG
    If hrBias <> Int(hrBias) Then
        If hrInc < 1 Then
            mS = mS - 30
            If mS < 0 Then
                mS = 60 + mS
                hS = hS - 1
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            End If
        Else
            mS = mS + 30
            If mS > 60 Then
                mS = mS - 60
                hS = hS + 1
            End If
        End If
    End If
    dWeek$ = Word$(SLD$, 1, Chr$(10);Chr$(13))
    SLD$ = Mid$(SLD$, Len(dWeek$) + 3)
    mG$ = Word$(SLD$, 1)
    dG$ = Left$(Word$(SLD$, 2), 2)
    yG$ = Word$(SLD$, 3)
    dt$ = mG$;"/";dG$;"/";yG$
    dG = Date$(dt$)
    dWeek$ = "Tuesday Wednesday Thursday Friday Saturday "; _
        "Sunday Monday"
    mYear$ = "Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec"
    If hS > 23 Then
        hS = hS - 24
        dG = dG + 1
    End If
    If hS < 0 Then
        hS = hS + 24
        dG = dG - 1
    End If
    GetSLT$ = GetSLT$;"*";Right$("0";hS, 2);":";Right$("0";mS, 2)
    dWeek$ = Word$(dWeek$, (dG Mod 7) + 1)
    dt$ = Date$(dG)
    m$ = Word$(mYear$, Val(Word$(dt$, 1, "/")))
    d$ = Word$(dt$, 2, "/")
    y$ = Word$(dt$, 3, "/")
    GetSLT$ = GetSLT$;"*";dWeek$;Chr$(10);Chr$(13);m$;" ";d$;", ";y$
End Function

Sub PostTimes GetSLT$
    GetGMT$ = GetGMT$()
    #main.gmt1, GetGMT$
    GetGMD$ = GetGMD$()
    #main.gmt2, GetGMD$()
    #main.lct0, "Local Time"
    GetLCT$ = GetLCT$()
    #main.lct1, GetLCT$
    GetLCD$ = GetLCD$()
    #main.lct2, GetLCD$
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    If GetSLT$ = "" Then
        #main.slt0, "Select Zone"
    End If
End Sub


Function LoadImageToSize(pFile$, wPic, hPic)
    CallDLL #pb, "IxLoadImageSize", _
        1 as Long, _
        pFile$ as Ptr, _
        wPic as Long, _
        hPic as Long, _
        LoadImageToSize as uLong
End Function

Function GetDC(handle)
    CallDLL #user32, "GetDC", _
        handle as uLong, _
        GetDC as uLong
End Function

Sub ReleaseDC handle, hDC
    CallDLL #user32, "ReleaseDC", _
        handle as uLong, _
        hDC as uLong, _
        result as Long
End Sub

Function LoadCursor(nCursor)
    flags = HexDec("8000") or _LR_DEFAULTSIZE
    CallDLL #user32, "LoadImageA", _
        0 as Long, _
        nCursor as Long, _
        _IMAGE_CURSOR as Long, _
        0 as Long, _
        0 as Long, _
        flags as Long, _
        LoadCursor as uLong
        Call SetCursor LoadCursor
End Function

Sub SetCursor hCursor
    CallDLL #user32, "SetCursor", _
        hCursor as uLong, _
        result as Long
End Sub
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Sub SetClass handle
    index = _GCL_HCURSOR or 0
    CallDLL #user32, "SetClassLongA", _
        handle as uLong, _
        index as Long, _
        0 as Long, _
        result as Long
End Sub
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