Code Snippets

Edition 1.3

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Contributors:

Klaus Christl

Forum users

1 Documentation

In this chapter some links that might be interesting.

1.1.1.1 SQLite

http://www.sqlite.org/lang.html

1.2 Regex

http://regexlib.com/?AspxAutoDetectCookieSupport=1

http://www.regular-expressions.info/

2 Code snippets

Code snippets gathered from the forum.

2.1 Label line spacing

```
Dim Obj1 As Reflector
Obj1.Target = lbl
Obj1.RunMethod3("setLineSpacing", 1, "java.lang.float", 2, "java.lang.float
")
```

2.2 Launching another application

```
Dim in As Intent
Dim pm As PackageManager
in = pm.GetApplicationIntent("com.google.android.youtube")
If in.IsInitialized Then StartActivity(in)
StartActivity(in)
```

2.3 Reading mp3 headers

http://www.mpgedit.org/mpgedit/mpeg_format/mpeghdr.htm#MPEGTAG

```
Sub Activity_Create(FirstTime As Boolean)
    LogMp3Tags(File.DirRootExternal, "1.mp3")
End Sub

Sub LogMp3Tags(Dir As String, FileName As String)
    Dim raf As RandomAccessFile
    raf.Initialize2(Dir, FileName, True, True)
    If raf.Size < 128 Then
        Log("No TAG found.")
        Return
    End If
    Dim buffer(128) As Byte
    raf.ReadBytes(buffer, 0, 3, raf.Size - 128)
    If BytesToString(buffer, 0, 3, "UTF8") <> "TAG" Then
        Log("No TAG found.")
        Return
    End If
    'Title
    raf.ReadBytes(buffer, 0, 30, raf.CurrentPosition)
    Log("Title=" & ConvertBytesToString(buffer, 30))
    'Artist
    raf.ReadBytes(buffer, 0, 30, raf.CurrentPosition)
    Log("Artist=" & ConvertBytesToString(buffer, 30))
    'Album
    raf.ReadBytes(buffer, 0, 30, raf.CurrentPosition)
    Log("Album=" & ConvertBytesToString(buffer, 30))
    'Year
    raf.ReadBytes(buffer, 0, 4, raf.CurrentPosition)
    Log("Album=" & ConvertBytesToString(buffer, 4))
    'Comment
```

```
    raf.ReadBytes(buffer, 0, 30, raf.CurrentPosition)
    Log("Comment=" & ConvertBytesToString(buffer, 30))
    'Genre
    Dim genre As Int
    genre = raf.ReadUnsignedByte(raf.CurrentPosition)
    Log("Genre=" & genre)
End Sub

Sub ConvertBytesToString(Buffer() As Byte, MaxLength As Int) As String
    For i = 0 To MaxLength - 1
        If Buffer(i) = 0 Then Return BytesToString(Buffer, 0, i, "UTF8")
    Next
    Return BytesToString(Buffer, 0, MaxLength, "UTF8")
End Sub
```

2.4 Writing wave file

```
Sub Globals
...
  Type TWaveHeader _
        (ChunkID(4) As Byte, _
        ChunkSize As Int, _
        Format(4) As Byte, _
        Subchunk1ID(4) As Byte, _
        Subchunk1Size As Int, _
        AudioFormat As Short, _
        NumChannels As Short, _
        SampleRate As Int, _
        ByteRate As Int, _
        BlockAlign As Short, _
        BitsPerSample As Short, _
        Subchunk2ID(4) As Byte, _
        Subchunk2Size As Int)

  Dim WavHead As TWaveHeader
  Dim NumSamples As Int: NumSamples = 1000
  Dim WavData(2*NumSamples) As Short
End Sub

Sub Activity_Create(FirstTime As Boolean)
  Dim l1 As Long
  Dim Buf(44+4*NumSamples), Buf2(4*NumSamples) As Byte
  Dim bc As ByteConverter
  Dim RAB, RAF As RandomAccessFile

...

  WavHead.Initialize
  bc.LittleEndian = True
  RAB.Initialize3(Buf, True)

  WavHead.ChunkID = "RIFF".GetBytes("UTF8")
  WavHead.Format = "WAVE".GetBytes("UTF8")
  WavHead.Subchunk1ID = "fmt ".GetBytes("UTF8")
  WavHead.Subchunk2ID = "data".GetBytes("UTF8")

  WavHead.Subchunk1Size = 16
  WavHead.AudioFormat = 1
```

```
  WavHead.NumChannels = 2
  WavHead.SampleRate = 44100
  WavHead.BitsPerSample = 16
  WavHead.ByteRate = WavHead.SampleRate * WavHead.NumChannels * WavHead.Bit
sPerSample / 8
  WavHead.BlockAlign = WavHead.NumChannels * WavHead.BitsPerSample / 8
  WavHead.Subchunk2Size = NumSamples * WavHead.NumChannels *     WavHead.Bi
tsPerSample / 8
  WavHead.ChunkSize = 36 + WavHead.Subchunk2Size

  l1 = GenSin(WavData, 0, 32000, 5000, NumSamples, 44100)
  Buf2 = bc.ShortsToBytes(WavData)

  RAB.WriteBytes(WavHead.ChunkID, 0, 4, 0)
  RAB.WriteInt(WavHead.Subchunk1Size, 4)
  RAB.WriteBytes(WavHead.Format, 0, 4, 8)
  RAB.WriteBytes(WavHead.Subchunk1ID, 0, 4, 12)
  RAB.WriteInt(WavHead.Subchunk1Size, 16)
  RAB.WriteShort(WavHead.AudioFormat, 20)
  RAB.WriteShort(WavHead.NumChannels, 22)
  RAB.WriteInt(WavHead.SampleRate, 24)
  RAB.WriteInt(WavHead.ByteRate, 28)
  RAB.WriteShort(WavHead.BlockAlign, 32)
  RAB.WriteShort(WavHead.BitsPerSample, 34)
  RAB.WriteBytes(WavHead.Subchunk2ID, 0, 4, 36)
  RAB.WriteInt(WavHead.Subchunk2Size, 40)

  RAB.WriteBytes(Buf2, 0, 2*l1, 44)

  RAF.Initialize2(File.DirDefaultExternal, "data.wav", False, True)
  RAF.WriteBytes(buf, 0, 44+2*l1, 0)

...

End Sub

' GenSin = (2 * pi * t * freq) / samplerate [return sample count]
' buf - sample buffer
' ch -  channel 0-left, 1-right
' v -   volume (magnitude multiplier)
' fr -  frequency
' ns -  number of samples max
' sr -  sample rate [clock time = ( 1.0 / (ns/ sr) )]

Sub GenSin(buf() As Short, ch As Int, v As Float, fr As Float, ns As Int, s
r As Int) As Int
  Dim i, j As Int
  Dim g, h, tp, fsr As Float

  tp = 2 * cPI
  fsr = sr

  For i=0 To ns-1
    j = 2 * i + ch
    g = (i * tp * fr) / fsr
    h = v * Sin(g)
    buf(j) = h
  Next

  Return(i)
End Sub
```

2.5 Initialize GPS

```
If GPS1.GPSEnabled = False Then StartActivity (GPS1.LocationSettingsIntent)
```

2.6 Minimize EditText height

Based on Reflection library.

```
Sub Globals
    Dim txt1 As EditText
End Sub

Sub Activity_Create(FirstTime As Boolean)
    txt1.Initialize("txt1")
    Dim c As Canvas
    Dim b As Bitmap
    b.InitializeMutable(1, 10)
    c.Initialize2(b)
    txt1.Text = "Hello"

    Dim size As Float
    size = c.MeasureStringHeight(txt1.Text, txt1.Typeface, txt1.TextSize)
    txt1.Gravity = Bit.Or(Gravity.TOP, Gravity.LEFT) 'Set gravity to top le
ft
    Activity.AddView(txt1, 10dip, 10dip, 100dip, size + 6dip)

    txt1.Color = Colors.White 'Removes the view edges
    Dim r As Reflector
    r.Target = txt1
    'Set padding to minimum
    r.RunMethod4("setPadding", Array As Object(0, 1dip, 0, 0), _
        Array As String("java.lang.int", "java.lang.int", "java.lang.int",
"java.lang.int"))
End Sub
```

2.7 Changing color of selected text in a Label

```
Sub Activity_Create(FirstTime As Boolean)
    Dim l As Label
    l.Initialize("l")
    Activity.AddView(l, 0, 0, 100dip, 100dip)
    l.Text = "Some text"
    SetColorList(l, Colors.Yellow, Colors.Blue)
End Sub

Sub l_Click

End Sub

Sub SetColorList (Label1 As Label, DefaultColor As Int,PressedColor As Int)
    Dim sd As StateListDrawable
    Dim clrs(2) As Int
    Dim states(2,1) As Int
    clrs(0) = DefaultColor
    clrs(1) = PressedColor
```

```
    states(0, 0) = sd.State_Pressed
    Dim r As Reflector
    Dim csl As Object
    csl = r.CreateObject2("android.content.res.ColorStateList", _
        Array As Object(states, clrs), Array As String("[[I", "[I"))
    r.Target = Label1
    r.RunMethod4("setTextColor", Array As Object(csl), _
        Array As String("android.content.res.ColorStateList"))
End Sub
```

2.8 SelectionEnd in an EditText

Based on Reflection library.

```
Sub GetSelectionEnd(txt As EditText) As Int
    Dim r As Reflector
    r.Target = txt
    Return r.RunMethod("getSelectionEnd")
End Sub
```

2.9 Turn off text correction

```
EditText1.InputType = 52428
```

2.10 SQLite BLOB UPDATE

SQL1.ExecNonQuery2("INSERT INTO table2 VALUES('smiley', ?)", Array As `Object(Buffer))`

2.11 Rename a folder

```
Sub Activity_Create(FirstTime As Boolean)
    RenameFolder(File.DirRootExternal, "test1", "test2")
End Sub

Sub RenameFolder(Parent As String, CurrentFolder As String, NewFolder)
    Dim p As Phone
    Dim args(2) As String
    args(0) = File.Combine(Parent, CurrentFolder)
    args(1) = File.Combine(Parent, NewFolder)
    p.Shell("mv", args, Null, Null)
End Sub
```

2.12 Webviewscrolling

So, in summary, to scroll a WebView to a particular DOM element, write a JavaScript function to do the scrolling:

```
function scrollToElement(id) {
    var elem = document.getElementById(id);
    var x = 0;
    var y = 0;

    while (elem != null) {
        x += elem.offsetLeft;
        y += elem.offsetTop;
        elem = elem.offsetParent;
    }
    window.scrollTo(x, y);
}
```

and then from your Android app (Java code), tell your WebView to load a URL:

```
webView.loadUrl("javascript:scrollToElement('" + elemId + "')");
```

There are some issues with this approach, such as the scroll will not be nicely animated, but the general mechanism works.

2.13 Change color of Android ProgressBar

Based on Reflection library.

```
Sub Globals
        Dim pb As ProgressBar
End Sub
Sub Activity_Create(FirstTime As Boolean)
        pb.Initialize("pb")
        Dim gd As GradientDrawable
        gd.Initialize("TOP_BOTTOM", Array As Int(Colors.Blue, Colors.Red))
         gd.CornerRadius = 3dip
        SetProgressDrawable(pb, gd)

        pb.Progress = 50
        Activity.AddView(pb, 10dip, 10dip, 300dip, 50dip)

End Sub

Sub SetProgressDrawable(p As ProgressBar, drawable As Object)
        Dim r As Reflector
        Dim clipDrawable As Object
        clipDrawable =
r.CreateObject2("android.graphics.drawable.ClipDrawable", _
                Array As Object(drawable, Gravity.LEFT, 1), _
                Array As String("android.graphics.drawable.Drawable",
"java.lang.int", "java.lang.int"))
        r.Target = p
        r.Target = r.RunMethod("getProgressDrawable") 'Gets the
layerDrawable
        r.RunMethod4("setDrawableByLayerId", _
```

```
                Array As Object(r.GetStaticField("android.R$id",
"progress"), clipDrawable), _
                Array As String("java.lang.int",
"android.graphics.drawable.Drawable"))
End Sub
```

2.14 Change the padding (margins) of an EditText view

```
Dim refl As Reflector
refl.Target=EditFeld
refl.RunMethod4("setPadding", Array As Object(Left, Top, Right, Bottom), _
        Array As String("java.lang.int", "java.lang.int", _
"java.lang.int","java.lang.int"))
```

2.15 Search on the Internet

```
Dim SearchWord As String
SearchWord = "apples"

Dim i As Intent
i.Initialize(i.ACTION_VIEW,"http://www.google.com/#q=" & SearchWord)
```

2.16 Get the pressure on the screen

```
Sub Activity_Create(FirstTime As Boolean)

        Dim r As Reflector
        Dim btn As Button
        btn.Initialize("")
        Activity.AddView(btn, 10dip, 10dip, 300dip, 300dip)
        r.Target = btn
        r.SetOnTouchListener("btn_touch")
End Sub

Sub btn_touch (viewtag As Object, action As Int, X As Float, Y As Float,
motionevent As Object) As Boolean
        Dim r As Reflector
        r.Target = motionevent
        Dim pressure As Float
        pressure = r.RunMethod("getPressure")
        Log(pressure)
        Return True
End Sub
```

2.17 Calculate the Number of Days Between Two Dates

```
Sub Activity_Create(FirstTime As Boolean)
    DateTime.SetTimeZone(0)
    Dim Date1, Date2 As Long
    DateTime.DateFormat = "M/d/yyyy h:mm:ss a Z"
    Date1 = DateTime.DateParse("12/29/2011 11:04:17 AM -5")
    Date2 = DateTime.DateParse("12/27/2011 11:04:17 AM -5")
    Log(DaysBetweenDates(Date1, Date2))
End Sub

Sub DaysBetweenDates(Date1 As Long, Date2 As Long)
    Return Floor((Date2 - Date1) / DateTime.TicksPerDay)
End Sub
```

2.18 Display a PDF file

```
Sub Btn_Tarif_Click
    Dim nom_file As String
    nom_file =  "file:///sdcard/_lelong/fiches_tarif/" & nomdoc
    'Msgbox(nom_file,"nom fichier")
Dim zz As Intent 'Requires a reference to the Phone library
    zz.Initialize(zz.ACTION_VIEW, nom_file)
    zz.SetType("application/pdf")
    'zz.WrapAsIntentChooser("Choose PDF Viewer")
    StartActivity(zz)
End Sub
```

2.19 Select Case with True

```
i = 10
Select True
 Case (i < 9)
      Log("False")
 Case (i = 10)
      Log("True")
End Select
```

2.20 Fill an array with random numbers without repetition

```
Sub Activity_Create (FirstTime As Boolean)
    Dim numbers(10) As Int
    'put numbers 1 - 10 in the array
    For i = 0 To 9
        numbers(i) = i + 1
    Next
    ShuffleArray(numbers)
    For i = 0 To 9
        Log(numbers(i)) 'print the numbers to the log
    Next
End Sub

Sub ShuffleArray(arr() As Int)
    For i = arr.Length - 1 To 0 Step -1
```

```
        Dim j, k As Int
        j = Rnd(0, i + 1)
        k = arr(j)
        arr(j) = arr(i)
        arr(i) = k
    Next
End Sub
```

2.21 Change Alpha property of a view

```
Sub SetAlpha(Control As View, Alpha As Int)
    Dim r as Reflector
    r.Target = Control.Background
    r.RunMethod2("setAlpha", Alpha, "java.lang.int")
End Sub
```

2.22 Getting a views' index

```
Sub Activity_Create(FirstTime As Boolean)
    Activity.LoadLayout("1")
    Log(PanelIndexOf(Panel1, EditText2))
End Sub

Sub PanelIndexOf(p As Panel, v As View) As Int
    For i = 0 To p.NumberOfViews - 1
        If p.GetView(i) = v Then Return i
    Next
    Return -1
End Sub
```

2.23 How Can I Hide the Scrollbar on Scrollview

```
Dim r As Reflector
r.Target = ScrollView1
r.RunMethod2("setVerticalScrollBarEnabled", False, "java.lang.boolean")
```

2.24 How to call the internal calculator

```
Sub Calculator
    Dim i As Intent
    i.Initialize("", "")
    i.SetComponent("com.android.calculator2/.Calculator")
    Try
        StartActivity(i)
    Catch
        ToastMessageShow("Calculator app not found.", True)
    End Try
End Sub
```

2.25 Get pixel colors

```
Sub Activity_Create(FirstTime As Boolean)
    Dim argb() As Int
    argb = GetARGB(Colors.Transparent)
    Log("A = " & argb(0))
    Log("R = " & argb(1))
    Log("G = " & argb(2))
    Log("B = " & argb(3))
End Sub

Sub GetARGB(Color As Int) As Int()
    Dim res(4) As Int
    res(0) = Bit.UnsignedShiftRight(Bit.And(Color, 0xff000000), 24)
    res(1) = Bit.UnsignedShiftRight(Bit.And(Color, 0xff0000), 16)
    res(2) = Bit.UnsignedShiftRight(Bit.And(Color, 0xff00), 8)
    res(3) = Bit.And(Color, 0xff)
    Return res
End Sub
```

2.26 Get device type

```
Sub Activity_Create(FirstTime As Boolean)
    If GetDevicePhysicalSize > 6 Then
        '7'' or 10'' tablet
    Else
        'phone
    End If
End Sub

Sub GetDevicePhysicalSize As Float
    Dim lv As LayoutValues
    lv = GetDeviceLayoutValues
    Return Sqrt(Power(lv.Height / lv.Scale / 160, 2) + Power(lv.Width / lv.
Scale / 160, 2))
End Sub
```

2.27 Generate a Click event

```
Sub Globals
    Dim sp As Spinner
End Sub

Sub Activity_Create(FirstTime As Boolean)
    sp.Initialize("sp")
    sp.AddAll(Array As String("a", "b", "c", "d"))
    Activity.AddView(sp, 10dip, 10dip, 200dip, 50dip)
End Sub

Sub Activity_Click
    OpenSpinner(sp)
End Sub

Sub OpenSpinner(s As Spinner)
    Dim r As Reflector
    r.Target = s
    r.RunMethod("performClick")
End Sub
```

2.28 Pseudo Custom Controls

Here is a very simplistic implementation:
Code module named C1

```
Sub Process_Globals
    Type MyView (p As Panel, b1 As Button, l1 As Label)
End Sub

Sub CreateMyView(ButtonEvent As String, ButtonText As String, LabelText As
String) As MyView
    Dim m As MyView
    m.Initialize
    m.p.Initialize("")
    m.b1.Initialize(ButtonEvent)
    m.b1.Text = ButtonText
    m.l1.Initialize("")
    m.l1.Text = LabelText
    m.b1.Tag = m 'store the structure in the button's Tags property.
    m.p.AddView(m.b1, 10dip, 10dip, 100dip, 40dip)
    m.p.AddView(m.l1, 10dip, 50dip, 100dip, 40dip)
    Return m
End Sub

Sub ChangeValue(m As MyView, value As String)
    m.l1.Text = value
End Sub
```

Activity:

```
Sub Process_Globals

End Sub

Sub Globals
    Dim m1, m2 As MyView
End Sub

Sub Activity_Create(FirstTime As Boolean)
    m1 = c1.CreateMyView("m1", "Button #1", "Label #1")
    Activity.AddView(m1.p, 10dip, 10dip, 100dip, 200dip)
    m2 = c1.CreateMyView("m2", "Button #2", "Label #2")
    Activity.AddView(m2.p, 10dip, 110dip, 100dip, 200dip)
End Sub

Sub m1_Click
    c1.ChangeValue(m1, "new value")
End Sub

Sub m2_Click
    c1.ChangeValue(m2, "new value2")
End Sub
```

2.29 Elipsize a Label

Ellipsizes the text in a Label. Needs the reflection library.
Example Label1.Text = "This is a test text"
Display with Mode = "END" *This is a t...*

```
Sub Activity_Create(FirstTime As Boolean)
    Activity.LoadLayout(1)
    Label1.Text = "this is a very long text."
    SetEllipsize(Label1, "END")
End Sub
Sub SetEllipsize(TextView As Label, Mode As String)
    Dim r As Reflector
    r.Target = TextView
    r.RunMethod2("setSingleLine", True, "java.lang.boolean")
    r.RunMethod2("setEllipsize", Mode, "android.text.TextUtils$TruncateAt")
End Sub
```

Possible Mode values:

Full text :	This is a text text.
• END	This is a t...
• MARQUEE	This is a tex
• START	... a test text.
• MIDDLE	This ... t text.

Remove Ellipsize:

```
Sub RemoveEllipsize(TextView As Label)
    Dim r As Reflector
    r.Target = TextView
    r.RunMethod2("setSingleLine", False, "java.lang.boolean")
End Sub
```

2.30 Get the dpi values (dot per inch)

Needs the reflection library.

```
    Dim Xdpi,Ydpi As Float
    Dim r As Reflector
    r.Target = r.GetContext
    r.Target = r.RunMethod("getResources")
    r.Target = r.RunMethod("getDisplayMetrics")
    Xdpi = r.GetField("xdpi")
    Ydpi = r.GetField("ydpi")
```

2.31 Android settings indents

Code :

```
Dim DoIntent As Intent
DoIntent.Initialize("android.settings.LOCATION_SOURCE_SETTINGS", "")
StartActivity(DoIntent)
```

Action Details(Activity action)

ACCESSIBILITY_SETTINGS = Show settings for accessibility modules.
ADD_ACCOUNT = Show add account screen for creating a new account.
AIRPLANE_MODE_SETTINGS = Show settings to allow entering/exiting airplane mode.
APN_SETTINGS = Show settings to allow configuration of APNs.
APPLICATION_DETAILS_SETTINGS = Show screen of details about a particular application.
APPLICATION_DEVELOPMENT_SETTINGS = Show settings to allow configuration of application development-related settings.
APPLICATION_SETTINGS = Show settings to allow configuration of application-related settings.
BLUETOOTH_SETTINGS = Show settings to allow configuration of Bluetooth.
DATA_ROAMING_SETTINGS = Show settings for selection of 2G/3G.
DATE_SETTINGS = Show settings to allow configuration of date and time.
DEVICE_INFO_SETTINGS = Show general device information settings (serial number, software version, phone number, etc.).
DISPLAY_SETTINGS = Show settings to allow configuration of display.
INPUT_METHOD_SETTINGS = Show settings to configure input methods, in particular allowing the user to enable input methods.
INPUT_METHOD_SUBTYPE_SETTINGS = Show settings to enable/disable input method subtypes.
INTERNAL_STORAGE_SETTINGS = Show settings for internal storage.
LOCALE_SETTINGS = Show settings to allow configuration of locale.
LOCATION_SOURCE_SETTINGS = Show settings to allow configuration of current location sources.
MANAGE_ALL_APPLICATIONS_SETTINGS = Show settings to manage all applications.
MANAGE_APPLICATIONS_SETTINGS = Show settings to manage installed applications.
MEMORY_CARD_SETTINGS = Show settings for memory card storage.
NETWORK_OPERATOR_SETTINGS = Show settings for selecting the network operator.
NFCSHARING_SETTINGS = Show NFC Sharing settings.
NFC_SETTINGS = Show NFC settings.
PRIVACY_SETTINGS = Show settings to allow configuration of privacy options.
QUICK_LAUNCH_SETTINGS = Show settings to allow configuration of quick launch shortcuts.
SEARCH_SETTINGS = Show settings for global search.
SECURITY_SETTINGS = Show settings to allow configuration of security and location privacy.
SETTINGS = Show system settings.
SOUND_SETTINGS = Show settings to allow configuration of sound and volume.
SYNC_SETTINGS = Show settings to allow configuration of sync settings.
USER_DICTIONARY_SETTINGS = Show settings to manage the user input dictionary.
WIFI_IP_SETTINGS = Show settings to allow configuration of a static IP address for Wi-Fi.
WIFI_SETTINGS = Show settings to allow configuration of Wi-Fi.
WIRELESS_SETTINGS = Show settings to allow configuration of wireless controls such as Wi-Fi, Bluetooth and Mobile networks.
EXTRA_AUTHORITIES = Limit available options in launched activity based on the given authority.

2.32 Out of memory problem with orientation change

In many cases the error happens when you change the orientation several times. These kinds of memory problems can be resolved by loading the images only once.

```
Sub Process_Globals
 Dim Image1, Image2 As Bitmap
 Dim ImageView1 As ImageView
End Sub

Sub Activity_Create(FirstTime As Boolean)
 If FirstTime Then
  Image1 = LoadBitmap(...)
  Image2 = LoadBitmap(...)
 End If
 ImageView1.Bitmap =
 '
 '
End Sub
```

2.33 Changing character set encoding

In the example code a text with encoding is changed to UTF-8 encoding.

```
Dim var, result As String
var = "Gestió"
Dim arrByte() As Byte
arrByte = var.GetBytes("ISO-8859-1")
result = BytesToString(arrByte, 0, arrByte.Length, "UTF8")
```

2.34 EditText pseudo Tab order

In Android there is no Tab order property for views, below you find a workaround.

- Set ForceDone of all the EditTexts to True.
- Set their EventName to EditText

Use the tag property to set the next EditText:

```
EditText1.Tag = EditText2
EditText2.Tag = EditText3
EditText3.Tag = EditText4
EditText4.Tag = EditText1

Sub EditText_EnterPressed
    Dim currentView, nextView As View
    currentView = Sender
    nextView = currentView.Tag
    nextView.RequestFocus
End Sub
```

2.35 Get Package name

Gets the package name of your application (posted by Erel).
Requires the Reflection library.

```
Sub GetPackageName As String
    Dim r As Reflector
    Return r.GetStaticField("anywheresoftware.b4a.BA", "packageName")
End Sub
```

2.36 Get the current screen orientation in the code

Gets the current screen orientation in the code (posted by Erel).
Requires the Reflection library.

```
Sub GetOrientation As Int
    Dim r As Reflector
    r.Target = r.GetContext
    r.Target = r.RunMethod2("getSystemService", "window", "java.lang.String")
    r.Target = r.RunMethod("getDefaultDisplay")
    Return r.RunMethod("getOrientation")
End Sub
```

The orientations are:

Smartphones	Tablets
0 = portrait	0 = landscape
1 = landscape turn left	1 = portrait turn left
2 = portrait upside down	2 = landscape upside down
3 = landscape turn right	3 = portrait turn right

Not all devices return upside down.

2.37 CreateScaledBitmap

Requires the Reflection library.

```
Sub Activity_Create(FirstTime As Boolean)
    Dim b As Bitmap
    b = LoadBitmap(File.DirAssets, "small_logo.png")
    b = CreateScaledBitmap(b, 16, 16, True)
End Sub

Sub CreateScaledBitmap(Original As Bitmap, Width As Int, Height As Int, Filter A
s Boolean) As Bitmap
    Dim r As Reflector
    Dim b As Bitmap
    b = r.RunStaticMethod("android.graphics.Bitmap", "createScaledBitmap", _
        Array As Object(Original, Width, Height, Filter), _
        Array As String("android.graphics.Bitmap", "java.lang.int", "java.lang.i
nt", "java.lang.boolean"))
    Return b
End Sub
```

2.38 Scale a View in code like AutoScale

AutoScale and AutoScaleAll scale the designer views when the script runs (after you call LoadLayout). Any later changes will override their effect.

You can use this method to scale a view by code:

```
Sub ScaleView(v As View, rate As Double)
    Dim delta, scaleRate As Double
    delta = (100%x + 100%y) / ((320 + 430) * 100dip / 100) - 1
    scaleRate = 1 + rate * delta

    v.SetLayout(v.Left * scaleRate, v.Top * scaleRate, v.Width * scaleRate, v.He
ight * scaleRate)
    If v Is Label Then 'this will catch ALL views with text (EditText, Button, .
..)
        Dim lbl As Label = v
        lbl.TextSize = lbl.TextSize * scaleRate
    End If
End Sub
```

2.39 Get physical screen size

```
Sub Activity_Create(FirstTime As Boolean)
    If GetDevicePhysicalSize > 6 Then
        '7'' or 10'' tablet
    Else
        'phone
    End If
End Sub

Sub GetDevicePhysicalSize As Float
    Dim lv As LayoutValues
    lv = GetDeviceLayoutValues
    Return Sqrt(Power(lv.Height / lv.Scale / 160, 2) + Power(lv.Width / lv.Scale
 / 160, 2))
End Sub
```

2.40 Check if a device has a built in GPS

```
Dim p As Phone
Dim gps As String

gps = p.GetSettings("location_providers_allowed")

If gps.IndexOf("gps") > -1 Then
   Msgbox("This device has GPS built in", "")
Else
   Msgbox("No GPS found", "")
End If
```

2.41 Set Button to Pressed state

Requires the Reflection library.

```
Sub SetPressed(cmd As Button, Pressed As Boolean)
    Dim ref As Reflector
    ref.Target = cmd
    ref.RunMethod2("setPressed", Pressed, "java.lang.boolean")
End Sub
```

2.42 Converting Drawable object to a Bitmap

Posted by Erel.

1. Create a mutable bitmap with Bitmap.InitializeMutable.
2. Create a canvas for this bitmap.
3. Draw the drawable with Canvas.DrawDrawable
4. Save the bitmap to a file (Bitmap.WriteToStream)

In some cases the drawable might actually be a BitmapDrawable.
In that case it is simpler:

```
If d Is BitmapDrawable Then
 Dim bd = d
 bd.Bitmap.WriteToStream(...)
End If
```

2.43 Special characters

In some cases special characters could be useful_
Example the 'check mark' U+2713 or `Chr(10003).`

```
lblTest.Text = Chr(10003) & " Checked"
```

You find a complete list in Wikipedia : List of Unicode characters

Some specialized character lists :

Geometric shapes	like	■ □ ▲ ▶ ▼ ◀ ◆.
Miscellaneous symbols	like	☎ ☀ ☘ ☂ ♠ ♣ ♥ ♦ ♕ ♘
Dingbats	like	✓ ✔ ✻ ❒ ❶ ② ➜

2.44 Go back from a WebView

Adds the `canGoBack` property to a WebView which adds the possibility that the back button closes the app if there are no previous web pages any more.

Needs the Reflection library.

```
Sub CanGoBack(wv As WebView) As Boolean
 Dim r As Reflector
 r.Target = wv
 return r.RunMethod("canGoBack")
End Sub
```

2.45 Get Resource drawables

Get images from Android resources.
Needs the Reflection library.
You find the list of drawables here.
http://developer.android.com/reference/android/R.drawable.html

```
Dim ph As Phone
Dim bd As BitmapDrawable
bd = ph.GetResourceDrawable(17301555)
Activity.AddMenuItem2 ("Acerca de..","Button3", bd.Bitmap)'Value of Android.R.dr
awable.ic_menu_add.
```

```
Dim p As Phone
EditText1.Background = p.GetResourceDrawable(17301528) 'Value of Android.R.drawa
ble.editbox_background.
```

2.46 Change the Disabled Drawable of an EditText view

Code provided in the forum by Erel.

```
Sub Activity_Create(FirstTime As Boolean)
    Activity.LoadLayout("1")
    ChangeDisabledDrawable(EditText1)
End Sub

Sub ChangeDisabledDrawable(et As EditText)
    et.TextColor = et.TextColor 'removes the ColorStateList and sets a constant
value
    Dim sd As StateListDrawable = et.Background
    Dim r As Reflector
    r.Target = sd
    Dim stateSet() As Int = Array As Int(sd.State_Enabled)
    Dim index As Int = r.RunMethod4("getStateDrawableIndex", Array As Object(sta
teSet), _
        Array As String("[I"))
    et.Background = r.RunMethod2("getStateDrawable", index, "java.lang.int")
End Sub
```

2.47 Set Left and Right volume level for MediaPlayer

Needs the Reflection library.
The values of `left` and `right` must be between 0 and 1.

```
r.Target = MediaPlayer1
r.Target = r.GetField("mp")
r.RunMethod3("setVolume", left, "java.lang.float", right, "java.lang.float")
```

2.48 Get a screenshot

Get a sort of screenshot, but only from within the displayed Basic4android Activity.
Needs the Reflection library.

```
Sub Btn1_Click
    Dim Obj1, Obj2 As Reflector
    Dim bmp As Bitmap
    Dim cvs As Canvas
    Obj1.Target = Obj1.GetActivityBA
    Obj1.Target = Obj1.GetField("vg")
    bmp.InitializeMutable(Activity.Width, Activity.Height)
    cvs.Initialize2(bmp)
    Dim args(1) As Object
    Dim types(1) As String
    Obj2.Target = cvs
    Obj2.Target = Obj2.GetField("canvas")
    args(0) = Obj2.Target
    types(0) = "android.graphics.Canvas"
    Obj1.RunMethod4("draw", args, types)
    Dim Out As OutputStream
    Out = File.OpenOutput(File.DirRootExternal, "Test.png", False)
    bmp.WriteToStream(out, 100, "PNG")
    Out.Close
End Sub
```

2.49 Get a Bitmap of a View

This code is derived from the previous one.
Needs the Reflection library.

```
Sub viewAsBitmap (aView As View) As Bitmap
    Dim bmp As Bitmap
    Dim cvs As Canvas
    ' Initialize mutable bitmap to contain size of aView
    bmp.InitializeMutable(aView.Width, aView.Height)
    cvs.Initialize2(bmp) ' Get bitmap canvas ...
    Dim args(1) As Object
    Dim types(1) As String
    Dim obj As Reflector
    obj.Target = cvs
    args(0) = r.GetField("canvas") ' Get android.graphics.Canvas field
    types(0) = "android.graphics.Canvas"
    ' Draw aView content onto the bitmap canvas
    obj.Target = aView
    obj.RunMethod4("draw", args, types)
    Return bmp
End Sub
```

2.50 Play camera click sound

```
Dim mp As MediaPlayer
mp.Initialize
mp.Load("/", system/media/audio/ui/camera_click.ogg")
mp.Play
```

It is possible to check the different system sound files in the "system/media/audio/" folder and subfolders.

2.51 Remove the click sound from a button

Needs the JavaObject library.

```
Dim jo As JavaObject = Button1
jo.RunMethod("setSoundEffectsEnabled", Array As Object(false))
```