

(pokračovanie)



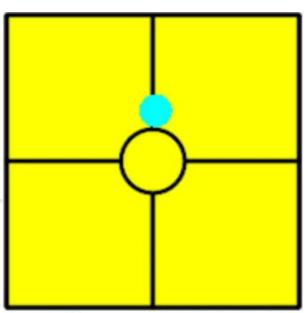


### Peter Borovanský KAI, I-18

borovan 'at' ii.fmph.uniba.sk

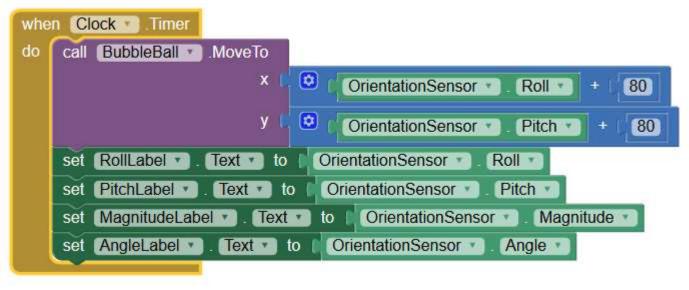
### Vodovážka

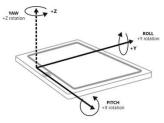
Akcelerometer meria zrýchlenie (m/s²) v troch osiach (x,y,z)



Roll: 1.83868

Pitch: -30.22783





**SpiritLevel.apk** 

Screen1

# 21.99883

## ShockMe

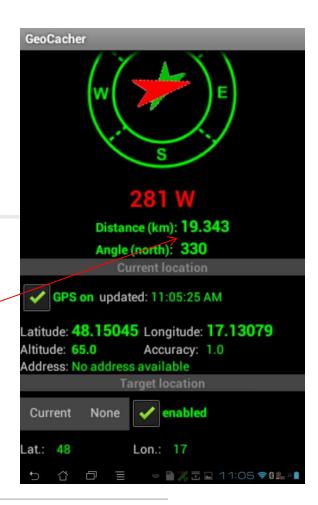
Akcelerometer meria zrýchlenie (m/s²) v troch osiach (x,y,z)

```
AccelerometerSensor1 .AccelerationChanged
        vAccel zAccel
xAccel
   set global actualAcc to square root
                                        ø
                                                                                    get xAccel xAccel
                                                                                              get yAccel × get yAc
              get global actualAcc •
                                 > get global maxAcc
                                                                  sqrt(x*x+y*y+(z-9.81)*(z-9.81))
                                get global actualAcc
         set Label1
                      Text to
         set global maxAcc v to
                               get global actualAcc
initialize global maxAcc to 0
initialize global actualAcc to 00
```

Neskôr použijeme Linear Acceleration Sensor, ktorý softwarovo počíta zrýchlenie bez gravitačného

## Geochaching

Magnetický senzor meria orientáciu v magnetickom poli zeme, možeme ho použiť ako kompas Akceleračný senzor meria zrýchlenie v 3 smeroch Gyroskop meria zmenu orientácie v 3 osiach



#### Formulas [edit source]

Let  $\phi_1, \lambda_1$  and  $\phi_2, \lambda_2$  be the geographical latitude and longitude of two points 1 and 2, and  $\Delta\phi, \Delta\lambda$  their absolute differences; then  $\Delta\sigma$ , the central angle between them, is given by the spherical law of cosines:

$$\Delta \sigma = \arccos \left( \sin \phi_1 \sin \phi_2 + \cos \phi_1 \cos \phi_2 \cos \Delta \lambda \right).$$

The distance d, i.e. the arc length, for a sphere of radius r and  $\Delta\sigma$  given in

$$d = r \Delta \sigma$$
.

A good choice<sup>[5]</sup> for the radius is the mean earth radius,

$$R_1 = rac{1}{3}(2a+b) pprox 6371\,\mathrm{km}$$
 (for the WGS84 ellipsoid)





Pair: 1234, ak nie, skúšame 0000, 00000, potom už čítame návod

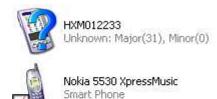
HXM012233

Connect to serial port, napr. COM5

Pozrieme si COM v termináli

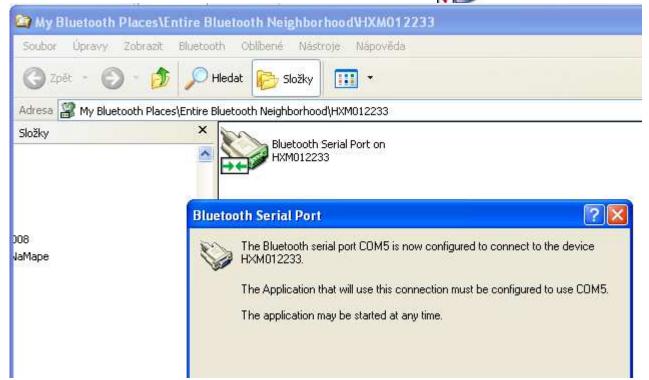


HTC Desire S

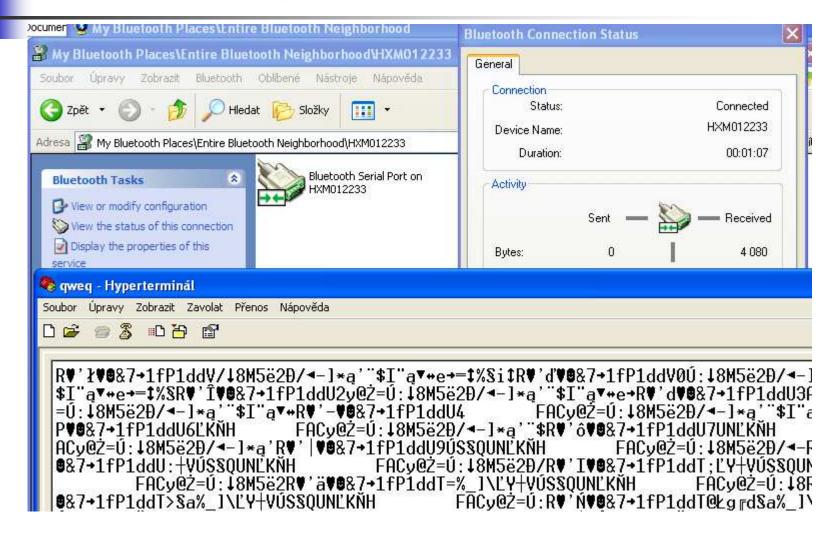




Transformer Prime TF201 Personal Digital Assistant

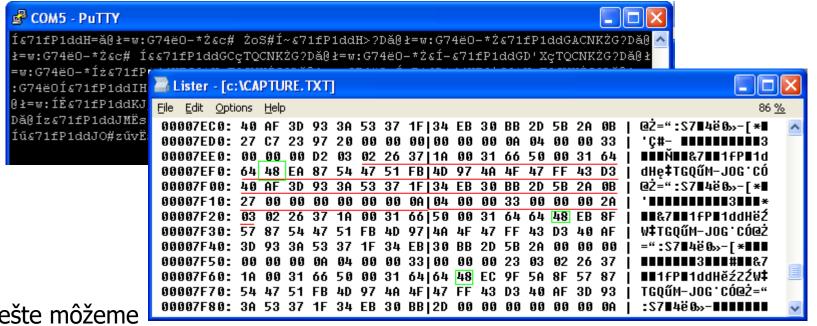


# Radosť z párovania



## Spárovené a rozpráva sám

Najpríjemnejšie, ak spárované zariadenie vysiela správy samé, hoc aj kódované. Ušetrí nám to študovanie komunikačného protokolu, riešenie problémov s rýchlosťou komunikácie, odozvou, a pod.



Vždy ešte môžeme čítať manuál, resp. použiť hotové API

#### Zephyr HxM Developer Kit

This bundled package is intended as a toolkit for implementing an API to enable communications with a Zephyr Bluetooth Heart Rate / Speed & Distance Monitor (11xM) and provides both PC and Android resources for connecting to the device to receive live data. Click here to download (185 MB).

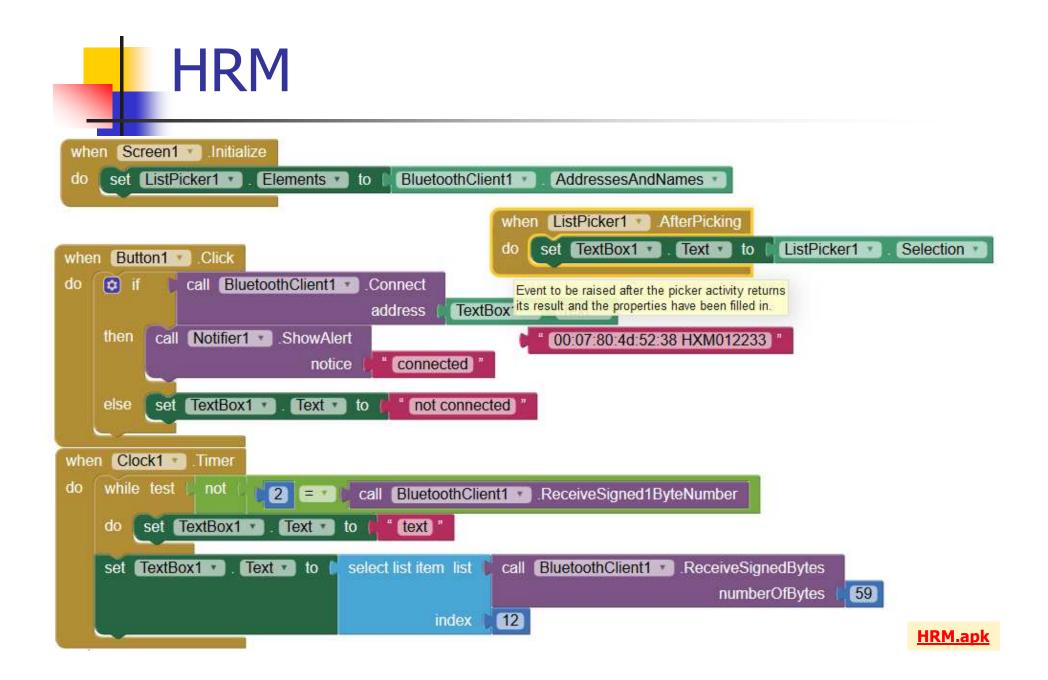
## HRM (HxM Zephyr)

c:\borovan\HxM SDK 9700.0124.v1d\*.*			
Name	Ext	Size	↓Date
<b>1</b> € []		<dir></dir>	17.11.2012 23:09
[DotNetFX35SP1]	200	608 888	17.11.2012 23:09
(HxM Example Android Project)		293 223	17.11.2012 23:09
[HxM Packet Logger 9500.0030.v1f]		584 465	17.11.2012 23:09
Thum Android API User Guide 2011-06-24	pdf	268 525	17.11.2012 23:09
Bluetooth HXM API Guide 2011-05-05	pdf	748 453	17.11.2012 23:09

#### 7.1. MSG:0x26 - Heart Rate, Speed & Distance packet

This message contains the heart rate data, including the last 15 RR timestamps, and speed & distance data. The packet is transmitted periodically at 1Hz.

Byte/Bit	7	6	5	4	3	2	1	0	Field
0	STX								STX
1	0x26								Msg ID
2	55							DLC	
3	Firmware ID								
5	Firmware Version								
7	Hardware ID								
9	Hardware Version								
11	Battery Charge Indicator								
12	Heart Rate								
13	Heart Beat Number								
14									
16									
18									
		1							





```
when Screen1 Initialize
    set NearField1 *
                      ReadMode *
                                   to true
       set NearField. ReadMode *
                                  NearField1 *
                    of component
                             to
                                  true *
when NearField1
                  TagRead
 message
    call Notifier1 .LogInfo
                             get message *
                 message
    set TextBox1 *
                    Text *
                            to get message
when Button1 Click
       set NearField ReadMode *
                                  NearField1 *
                    of component
                                   false
       NearField1 *
                      ReadMode *
                                   to
                                        false *
    set NearField1
                      TextToWrite
                                         TextBox1
                                                      Text *
      NearField1
                   TagWritten
     call Notifier1 .LogInfo
                               written
                  message
```

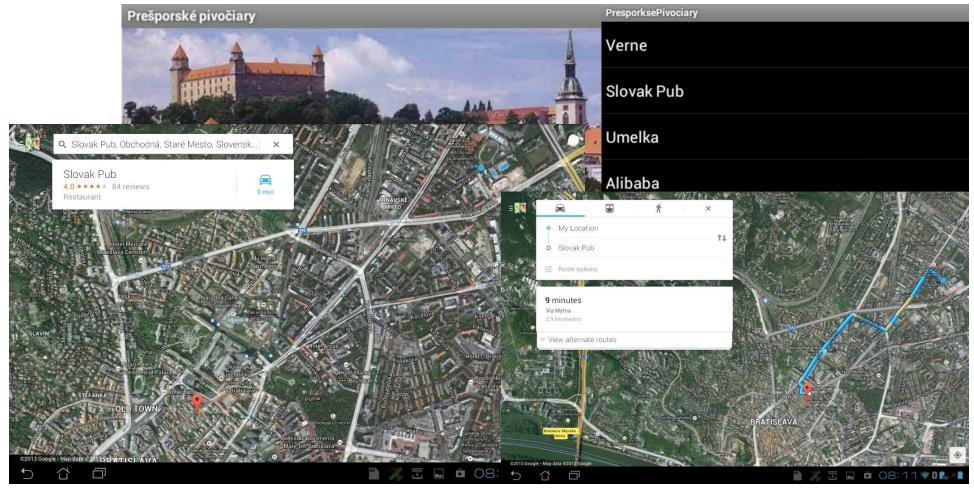
### **NFC**



# Prešporské pivočiary

ilustrácia ActivityStarter

Malý turistický sprievodca pamiatkami Bratislavy



## ActivityStarter

(google.maps)

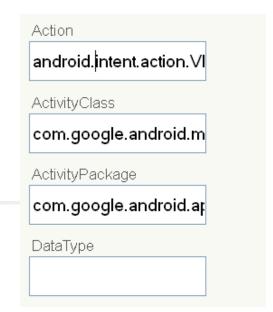
Action: android.intent.action.VIEW

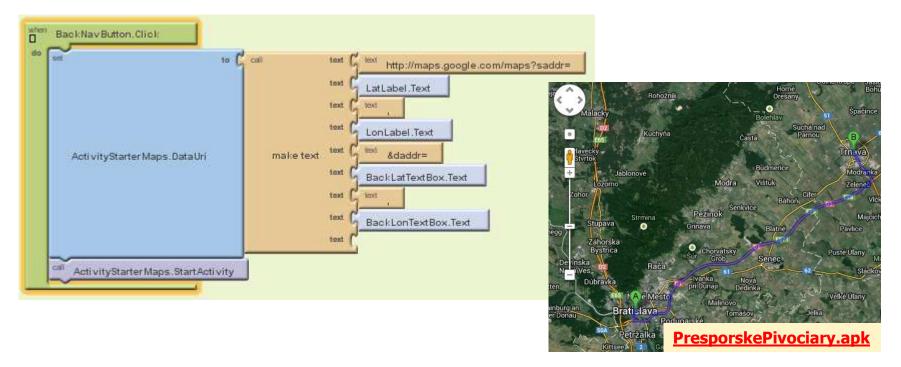
ActivityClass: com.google.android.maps.MapsActivity

ActivityPackage: com.google.android.apps.maps

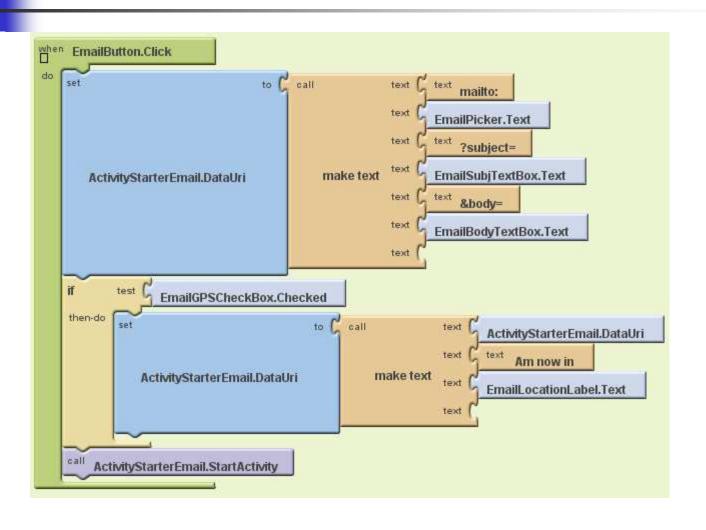
DataUri: <a href="http://maps.google.com///?saddr=...&daddr=...">http://maps.google.com///?saddr=...&daddr=...</a>

napr.: <a href="https://maps.google.com/?saddr=bratislava&daddr=trnava">https://maps.google.com/?saddr=bratislava&daddr=trnava</a>

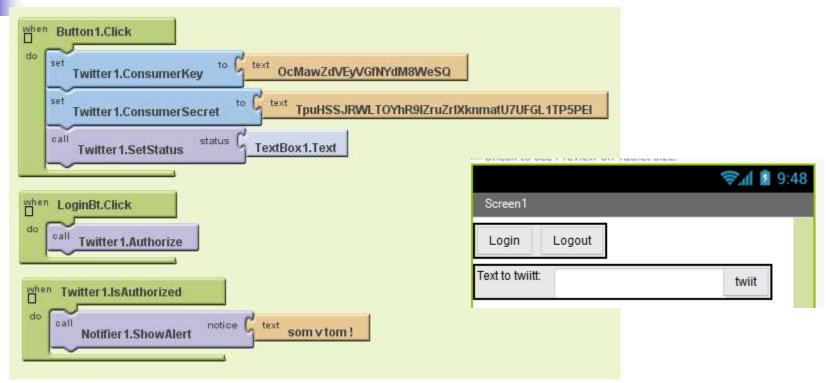




## ActivityStarter: mailto



### **Twitter**



Aplikáciu treba zaregistrovať na

https://dev.twitter.com/

http://twitter.com/oauth\_clients/new



## app.twitter.com

#### **Application Details**

#### Name: \*

### Twiitingo

Your application name. This is used to attribute the sc Application Type

#### Description: \*

#### prvy pokus

Your application description, which will be shown in

#### Website: \*

#### http://dai.fmph.uniba.sk/courses/VMA/

Your application's publicly accessible home page, wh

#### OAuth Settings

#### Consumer key: \*

OcMawZdVEyVGfNYdM8WeSQ

#### Consumer secret: \*

TpuHSSJRWLTOYhR9IZruZrlXknmatU7UFGL1TP5PEI

Remember this should not be shared.

### https://apps.twitter.com/

#### Access:

- Read only
- Read and Write
- Read, Write and Access direct messages

What type of access does your application need? Note: @Anywhere applications require read & write access. Find out more about our Application Permission Model.

#### Callback URL:

#### http://twitter.com

Where should we return after successfully authenticating? For @Anywhere applications, only the domain specified in the call specify their oauth callback URL on the request token step, regardless of the value given here. To restrict your application

Allow this application to be used to Sign in with Twitter

## Social Sharing

```
9:48
                                                                  Screen1
    Button1 - Glick
                                                                 cislo
                   PhoneNumber *
                                        cislotb
                                                   Text *
    set Texting1
                   Message v to
                                    msgtb *
    set Texting1 *
                                              Text *
                                                                 Text SMS
    call Texting1 . SendMessage
                                                                  Posli
                                                                  Zdielaj obrazok
     Texting1 MessageReceived
                                                                  Text for ImagePicker1
          messageText
 number
    set cislotb *
                               get number
                  Text to
    set msqtb v
                  Text *
                               get messageText *
                         to
when Button2 Click
                   Picture to ImagePicker1
    set Image1 v
                                                  Image *
    call Sharing1 ShareFileWithMessage
                                            /storage/sdcard0/Appinventor/assets/ANDROID.png
                                     file
                                            omg!
                               message
    call Notifier1
                   .ShowAlert
                                 a je to tam
                       notice
```

### Phone

```
$ 1 9:48
                                  when Button1 Click
Screen1
                                                                               to "
                                       set PhoneCall1 *
                                                            PhoneNumber •
                                                                                       0911775039
                                  do
Text for ContactPicker1
                                       call PhoneCall1
                                                           MakePhoneCall
Text for PhoneNumberPicker1
Call Me
Text Me
                                        Button2
                                  when
                                                                                  " 0911775039 "
                                                         PhoneNumber *
                                  do
                                           Texting1 *
                                           Texting1 *
                                                         Message *
                                                                               0918972645
                                                                       to
                                                        .SendMessage
                                       call Texting1
        Non-visible components
                  PhoneCall1 Texting1
```

### **Firebase**

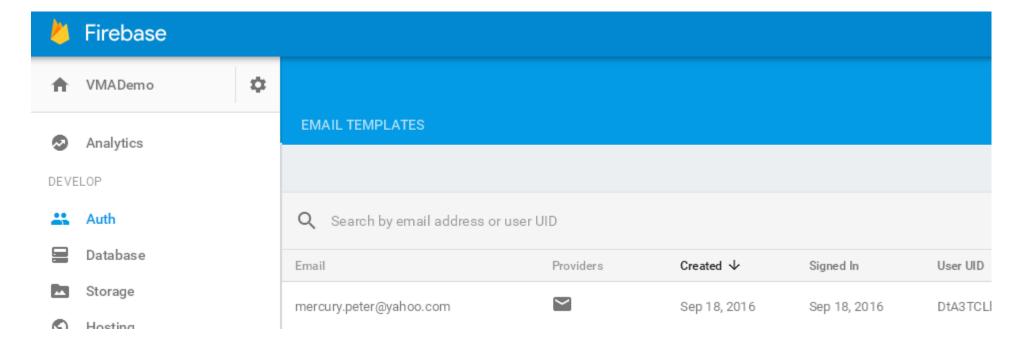
https://firebase.google.com/

Cloud vlastnený Google od 2014

- Firebase Cloud Messaging
- Firebase Auth
- •Realtime Database
- •Firebase Storage
- Firebase Web Hosting
- •Firebase Remote Config
- Firebase Test Lab for Android
- Crash Reporting



### FireBaseConsole



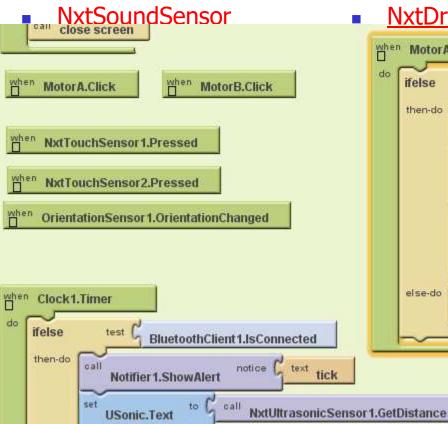




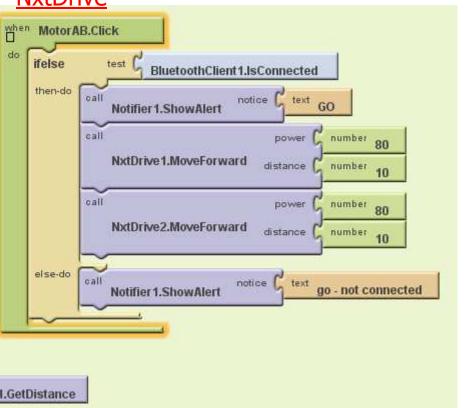
- **NxtColorSensor**
- <u>NxtLightSensor</u>

- **NxtTouchSensor**
- **NxtUltrasonicSensor**





light.Text to G call NxtLightSensor1.GetLightLevel





next.aia, next.apk



### Domáca úloha

Ak vás niečo netriviálne napadne (príklad: Prešporské Pivočiary :-), skúste to vytvoriť, ale tak, že sa za to nebudete hanbiť, hodnotí to Michal Kováč.

#### Ak nie:

- Labilo
  - dorobiť na niečo ako vodováhu
- GPSArt
  - Kreslí čiary, nie bodky
  - Plocha obrázku sa škáluje podľa reálne prejdenej vzdialenosti
  - Má Pause na prerušenie maľovania za účelom presunu
  - Vie uložiť obrázok
  - Nakreslí sever
- HRM
  - Grafické zobrazenie
  - Priebeh, vývoj
- NXT-EV3
  - Čokoľvek pekné (segway :-)

