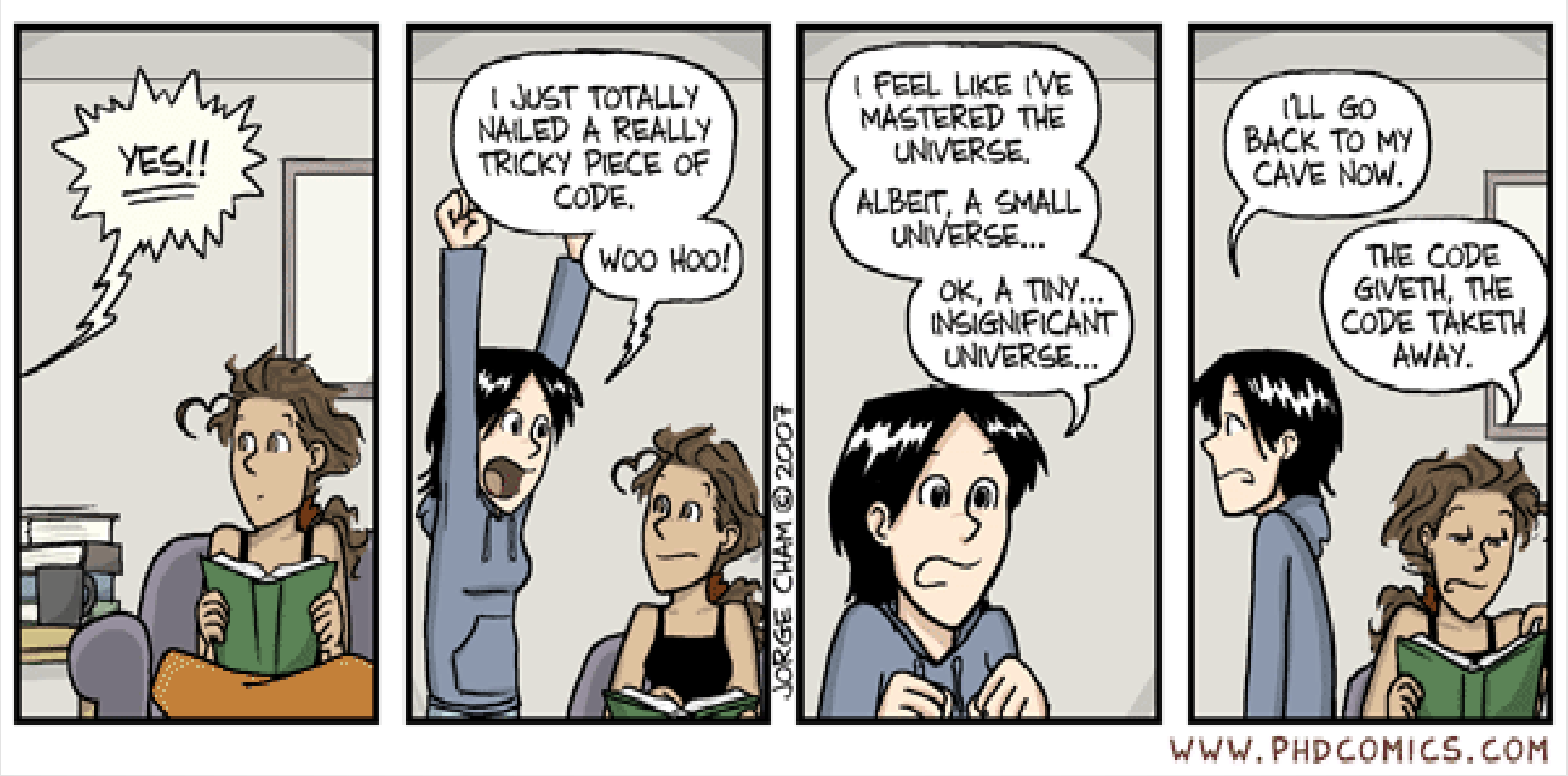

android

Getting to know Android

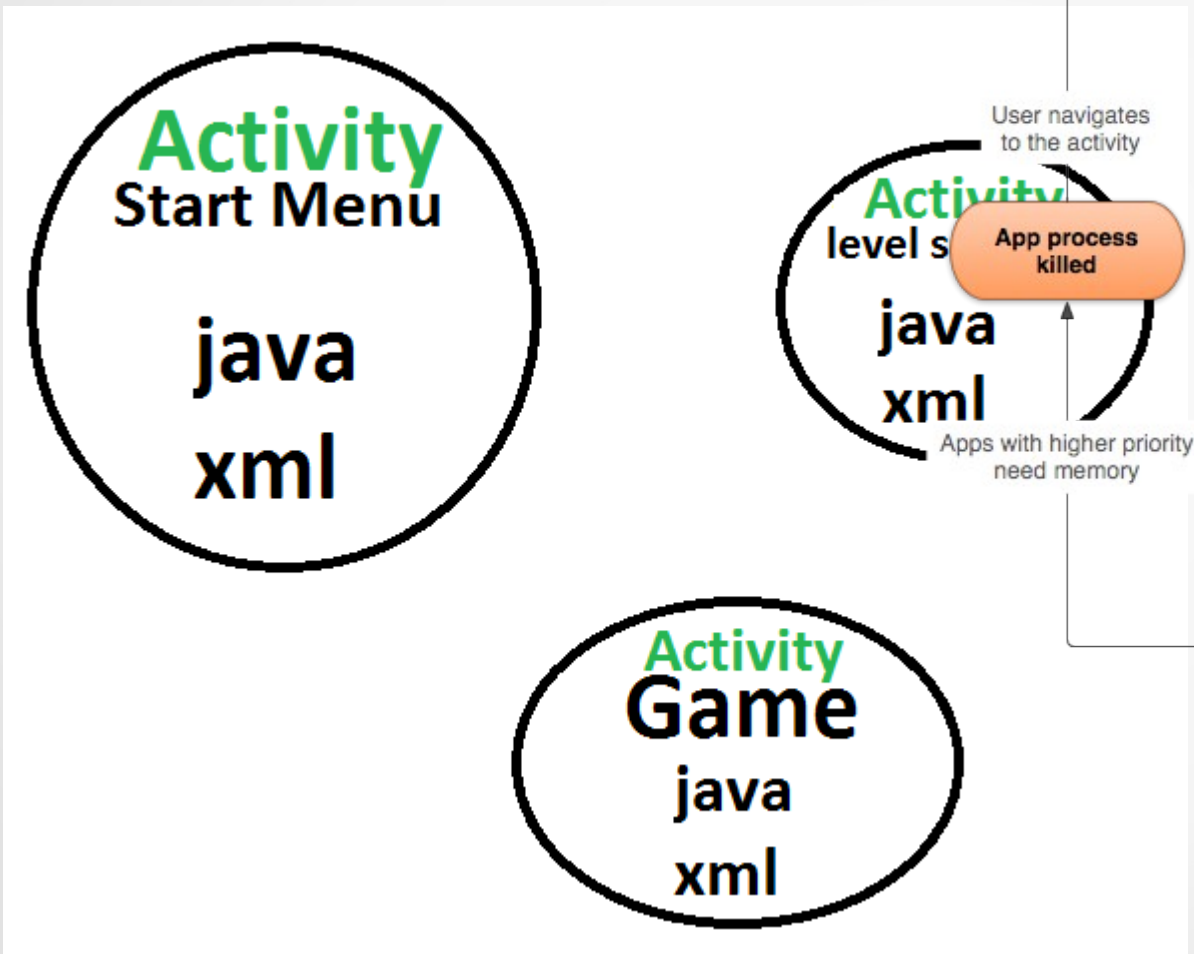


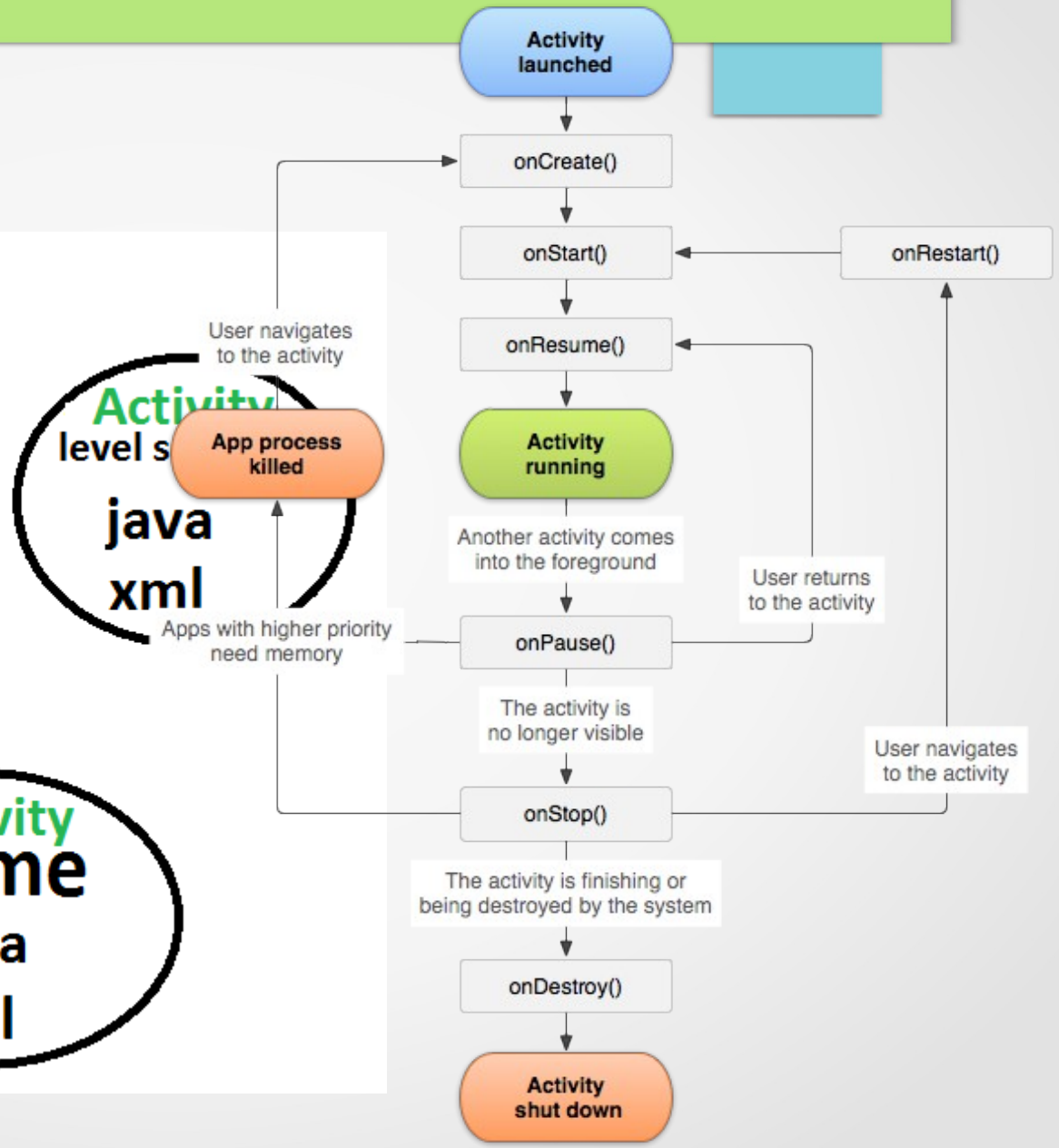
Recap

- Android Programming
  - Define behavior and datastructures: JAVA
  - Define how this data is displayed: XML
  - Define static data (resources): XML

Recap

- Activity





Problems?

Activity

- How to transition between Activities?

```
Intent intent = new Intent(this, OtherActivity.class);
startActivity(intent);
```

Activity

- Transition with information?
- Put information in your intent

```
Intent pizzaIntent = new Intent(this,
ChildActivity.class);
String pizzaMessage = "pizza!";
pizzaIntent.putExtra("pizzaKey", pizzaMessage);
startActivity(pizzaIntent);
```

Activity

- Get information at other Activity

```
Intent intent = getIntent();
String message = intent.getStringExtra("pizzaKey");
```

Activity

- Don't forget to tell the AndroidManifest.xml
  - inside <application> tag

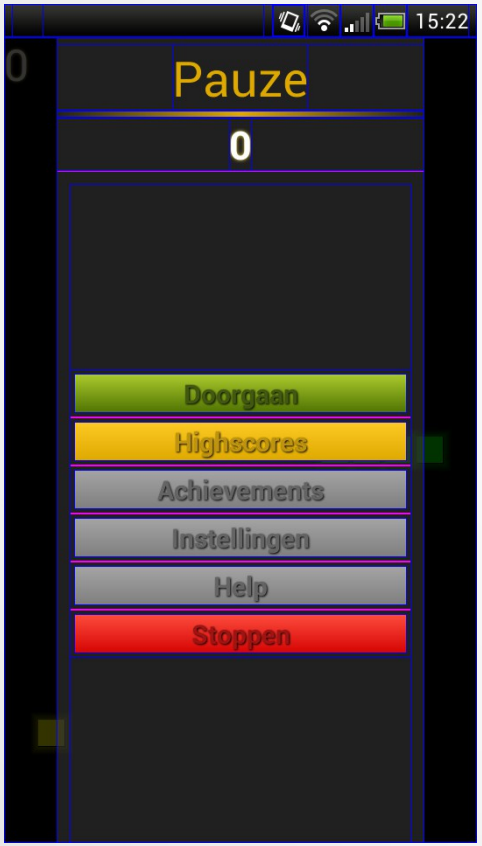
```
<activity
    android:name=".ChildActivity"

android:parentActivityName="com.example.dell.startanotheractivity.MainActivity">

</activity>
```

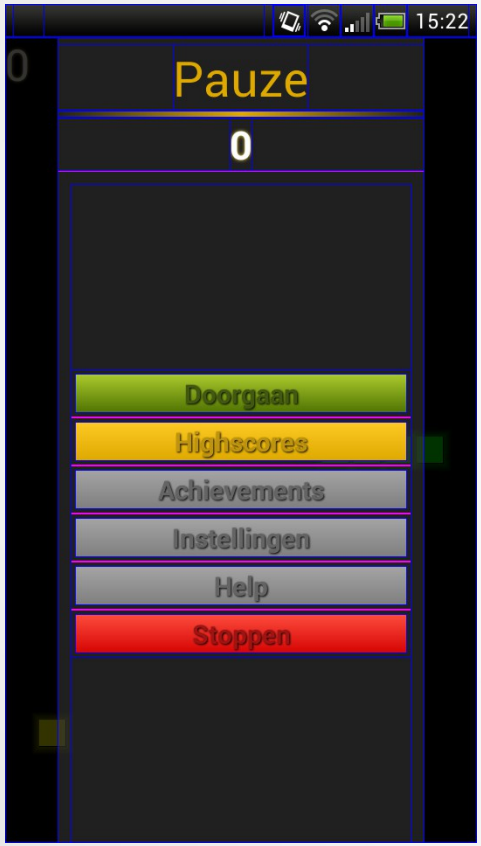
Activity Transition Example

View



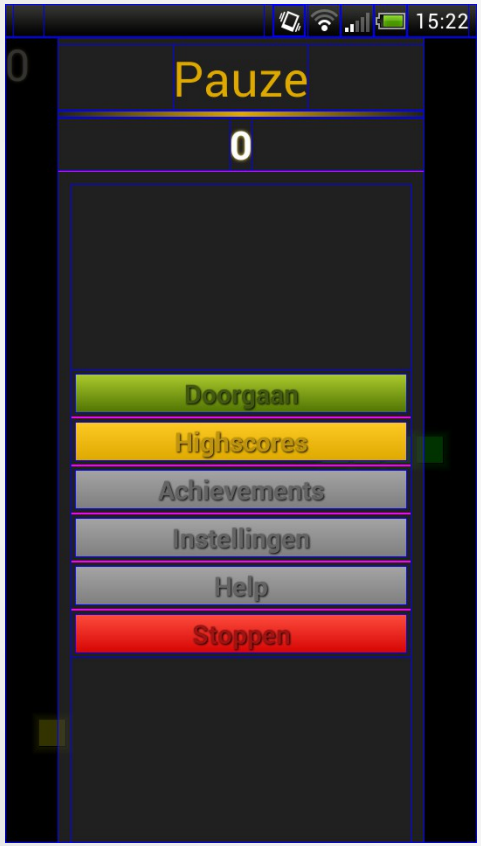
- Scherm element
- Verschillende versies
  - TextView
  - ImageView
  - EditText
  - …

View



- Aantal verplichte eigenschappen
  - *Width*
  - *Height*

ViewGroup



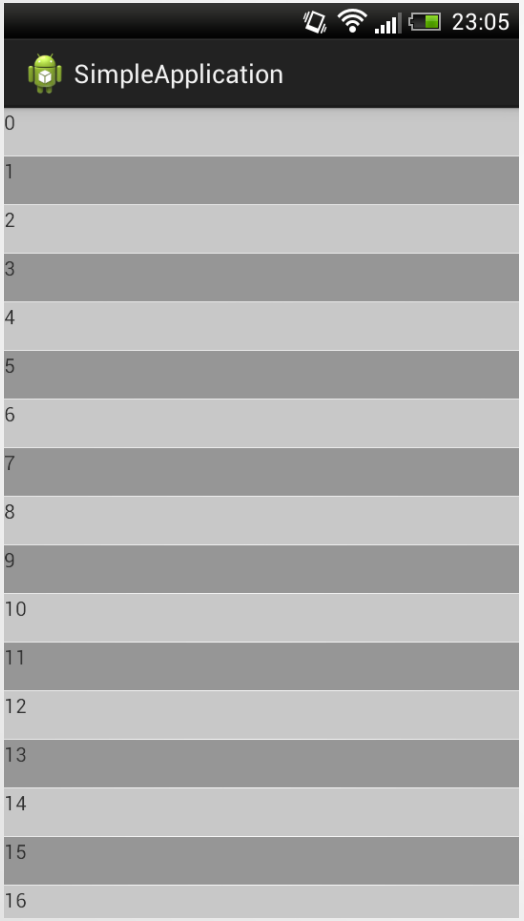
- Extensie van View
- Meerdere Views
- Voorbeelden
  - LinearLayout
  - RelativeLayout
  - GridLayout
  - …

Speciale Views

ScrollView

- Scroll verticaal
  - *Horizontaal: HorizontalScrollView*
- Bevat één View/ViewGroup
  - Uitbreiden door ViewGroup met children
- Is geen lijst!
  - inefficiënt
- Gebruik als Wrapper!

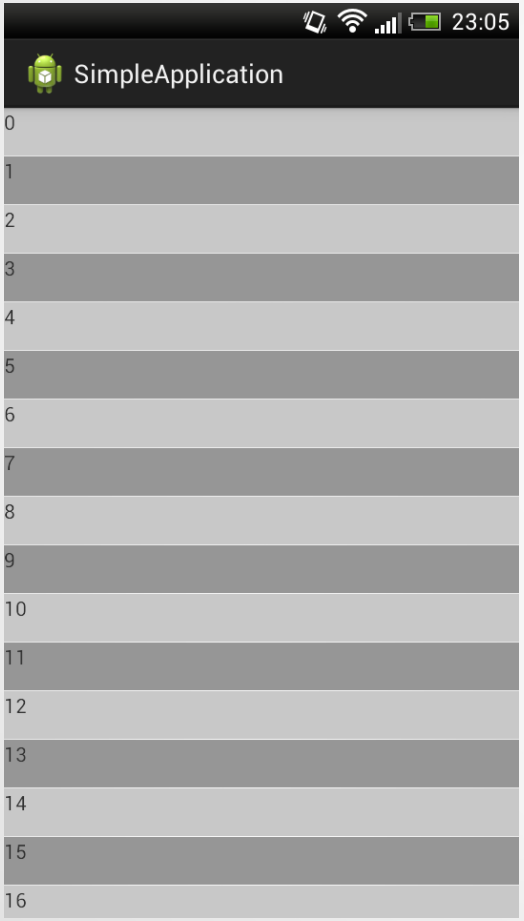
Speciale Views



ListView

- Zoals ScrollView maar specifiek
- Gebruikt ListAdapter voor data

Speciale Views



ListAdapter

- Houdt data vast
- Verzoekt om items zodra nodig
- Houd het efficiënt

ListView Example

Custom View

```
package rend1.example.simpleapplication;

import android.content.Context;
import android.util.AttributeSet;
import android.view.View;

public class SimpleView extends View {

    public SimpleView(Context context, AttributeSet attrs, int defStyleAttr) {
        super(context, attrs, defStyleAttr);
        // TODO Auto-generated constructor stub
    }

    public SimpleView(Context context, AttributeSet attrs) {
        super(context, attrs);
        // TODO Auto-generated constructor stub
    }

    public SimpleView(Context context) {
        super(context);
        // TODO Auto-generated constructor stub
    }

}
```

Constructor

- Moet super aanroepen met Context
- Gebruik je geen XML?
  - Constructor met alleen Context genoeg

Custom View

```
<rend1.example.simpleapplication.SimpleView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content" />
```

```
public SimpleView(Context context, AttributeSet attrs, int defStyleAttr) {
    super(context, attrs, defStyleAttr);
    // TODO Auto-generated constructor stub
}

public SimpleView(Context context, AttributeSet attrs) {
    super(context, attrs);
    // TODO Auto-generated constructor stub
}
```

XML

- XML attributes zitten in AttributeSet
- Kunt eigen XML attributen definiëren

Custom View Example

Gestures

Listeners

- Event driven
- Methodes worden aangeroepen bij gebeurtenis
- Voorbeelden
  - onTouch
  - onClick

Gestures

Touches

- onTouch(View, MotionEvent)
- MotionEvent
  - Waar aangeraakt?
  - Hoe aangeraakt?
- Returned boolean
  - Has event been consumed?
- View.setOnTouchListener

Gestures

Long Clicks

- onLongClick(View)
- Lange klik
  - Welke view?
- Returned boolean
  - Has event been consumed?
- View.setOnLongClickListener

Gestures

Clicks

- onClick(View)
- Klik event
  - Welke view?
- Alleen als onTouch/onLongClick niet consumed is!
- View.setOnClickListener

Gestures

Gestures

- onDoubleTab, onFling, onSingleTab, …
- Aangeroepen als *complexere* bediening wordt gedaan
- Sommige returnen boolean
  - Has event been consumed?
- View.setOnGestureListener
- View.setOnDoubleTabListener
- …

Snake example

Geheugen

- small collection of key/value -> sharedPreferences
- inside activity:

```
SharedPreferences sharedPref =
this.getPreferences(Context.MODE_PRIVATE);
```

Geheugen

- Save data

```
int highscore = 10;
SharedPreferences sharedPref =
this.getPreferences(Context.MODE_PRIVATE);
SharedPreferences.Editor editor = sharedPref.edit();
editor.putInt("highscore", highscore);
editor.commit();
```

Geheugen

- retrieve data:

```
SharedPreferences sharedPref =
this.getPreferences(Context.MODE_PRIVATE);
int defaultValue = 0;
int highScore = sharedPref.getInt("highscore", defaultValue);
```

Geheugen

- Save complex data
  - Save in files
    - external / internal (do not forget to add permissions)

      Android.permission.WRITE_EXTERNAL_STORAGE

      Android.permission.READ_EXTERNAL_STORAGE
  - Save in SQL

    http://developer.android.com/training/basics/data-storage/databases.html