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## Introduction to Android Smartphone Programming

<http://proglang.informatik.uni-freiburg.de/teaching/androidpracticum/>

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### Exercise Sheet 5

## 1 Cast the Dice (16 points)

In this exercise you will create an app that shows a dice, which can be cast. This dice should be a 3D-graphic created by using OpenGL ES. It should be possible to cast the dice via touch screen interaction. Whenever the dice is cast, it will rotate, stop, and display a random number between 1 and 6.

**OpenGL ES** Use OpenGL ES to draw a 3D-graphic of a dice, which will be rotated when it is cast.

**TouchEventint** Your dice should react to the TouchEvent, which is thrown whenever the user does touch the screen. The reaction should include the animation of a rotating dice in at least two (x, y, or z) directions.

**MediaPlayer** Use the class MediaPlayer to play a sound when the dice rolls.

*Hint:* The implementation of a dice is given on the course page.

## 2 Cast the Dice again (4 points)

Copy your solution from the previous exercise and extend it with the possibility that the dice can be cast by using a sensor (gyroscope, acceleration, orientation, or something else). You can choose one of the given sensors.

**Simulation** To test your application it could be important to simulate gyroscope sensors, which is not possible by using the standard Android Emulator you used before. However, there is an application called *Sensor Simulator*<sup>1</sup> that enables you to simulate various sensors in real time.

## Submission

**Deadline** The submission deadline is **31.01.2013, 12:00 (noon)**. Late submissions will not be accepted.

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<sup>1</sup><http://code.google.com/p/openintents/wiki/SensorSimulator>

**Project** Create an *Eclipse Project* **exercise5\_⟨number⟩** for each exercise. Use **androidlab.exercise5\_⟨number⟩** as package name. Make sure that your project include all source files.

**Report** Your solution will consist of a *pdf file* **report5\_⟨number⟩.pdf** with a description. The description must be limited to one page per exercise. Submitting more than one page will lead to reduction in points. The description may be either in German or in English. Clear and understandable style is required.

**Submission** Submit your solution to the subversion repository. Your solution will consist of one *folder* **exercise5\_⟨number⟩** for each exercise which include the eclipse project and the report.

You are strongly encouraged to test your solution. Provide your source code with comments to understand the intention. Clear and understandable style is required.