

# FUTURE CHALLENGES AND TRENDS IN HCI

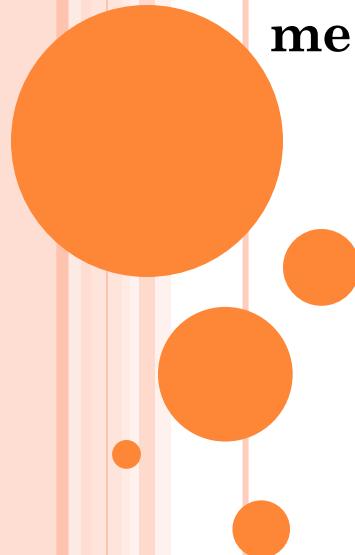
## - PHYSICAL PROTOTYPING - HARDWARE SKETCHING

By:  
 SHAHANA YEASMIN BUBLY



# SENSOR

- A device that responds to a physical stimulus (e.g. heat, light, sound, pressure, magnetism, or a particular motion) and transmits a resulting impulse (as for measurement or operating a control)



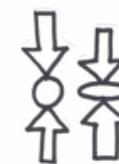
# ↔ SENSES-SENSORS



senses



sensors



# MEMS OVERVIEW

- Potentiometer

- What is potentiometer?
- Concept of potentiometer.

- Temperature sensor

- What is Temperature sensor?
- Concept of Temperature sensor.

- Acceleration sensor

- What is Acceleration sensor?
- Concept of Acceleration sensor.



# ⚡ POTENTIOMETER

- Definition:

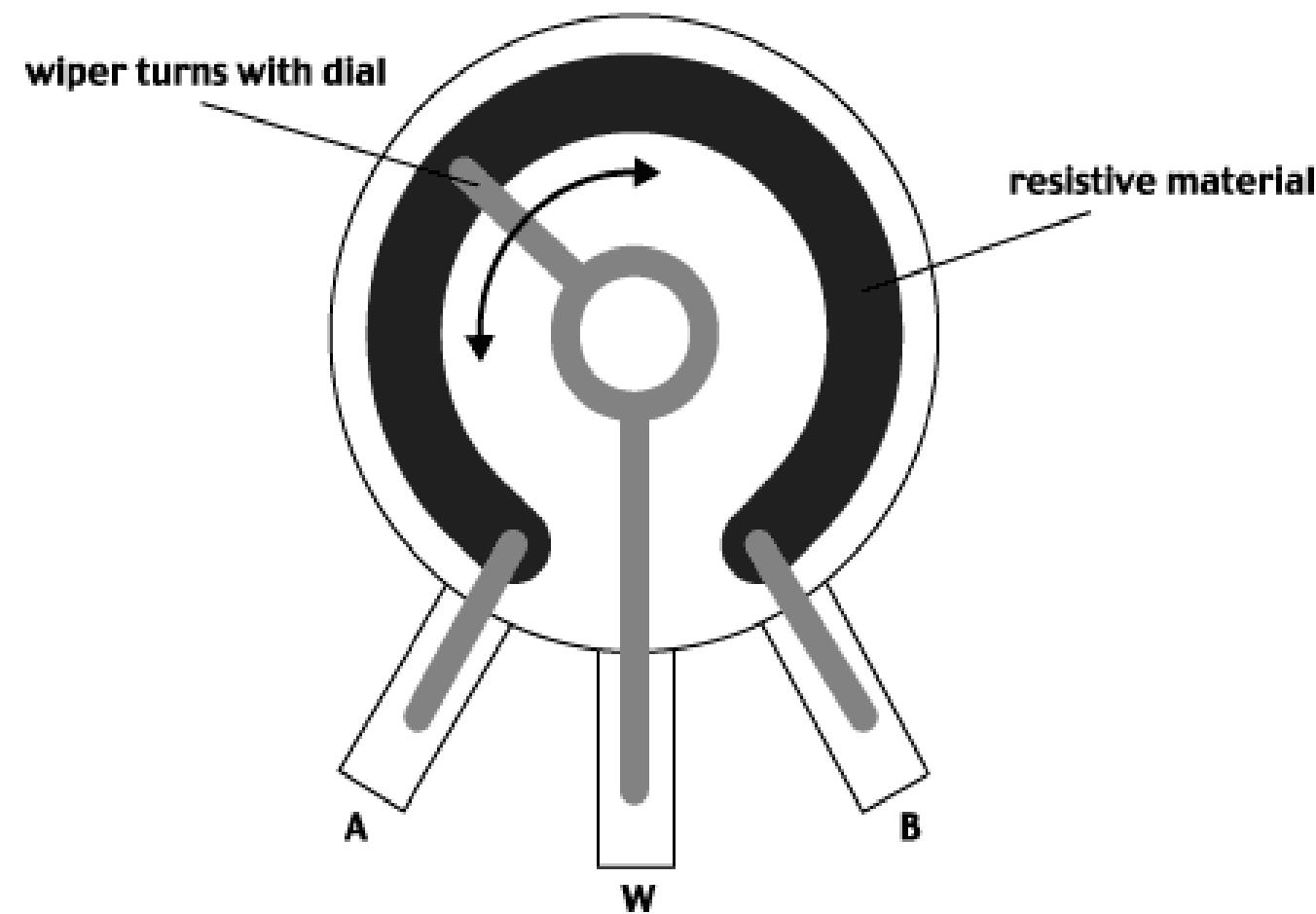
- electronic device -> concept of resistor
- manipulating resistance.

example, stereo system.

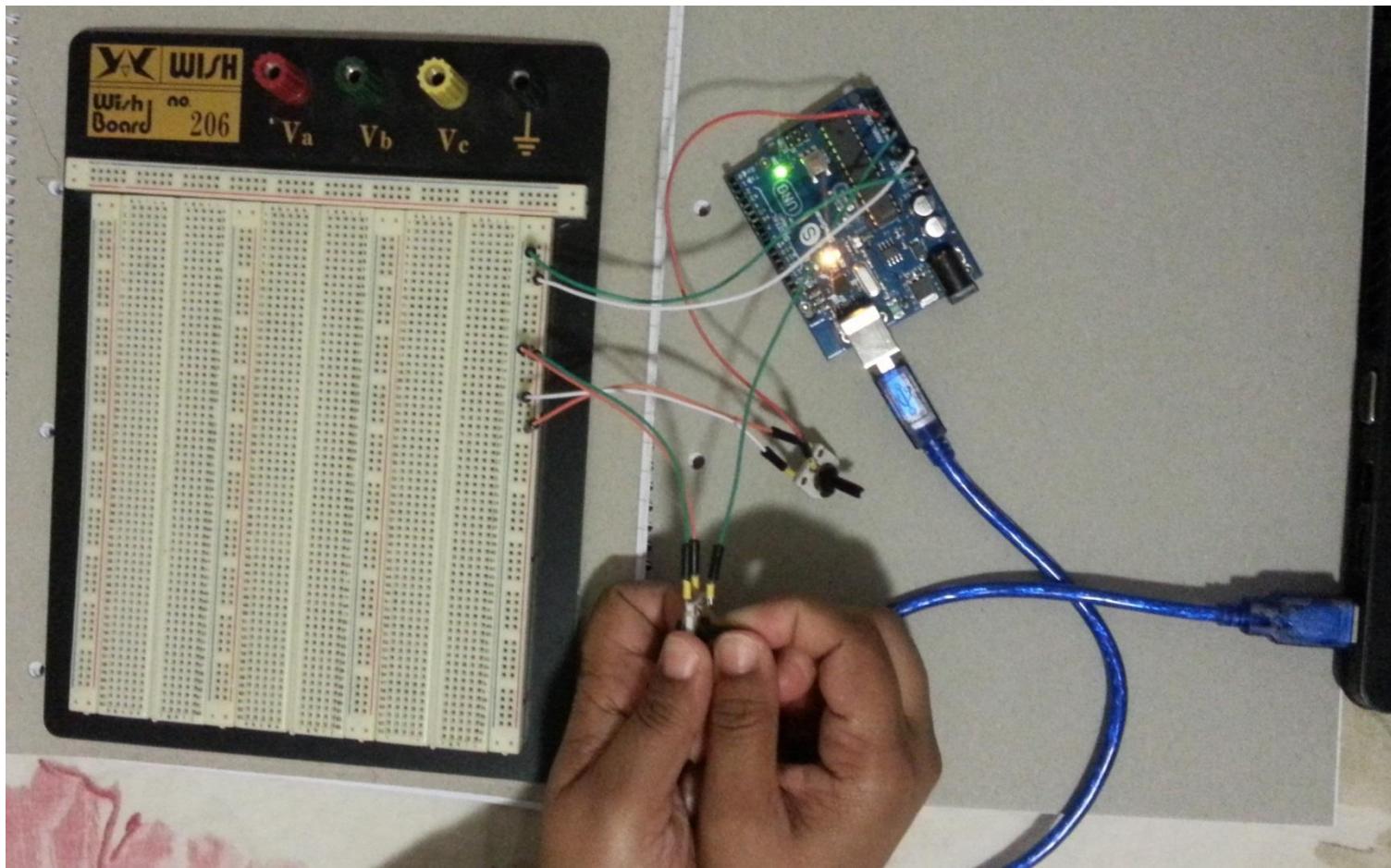
- Knob:

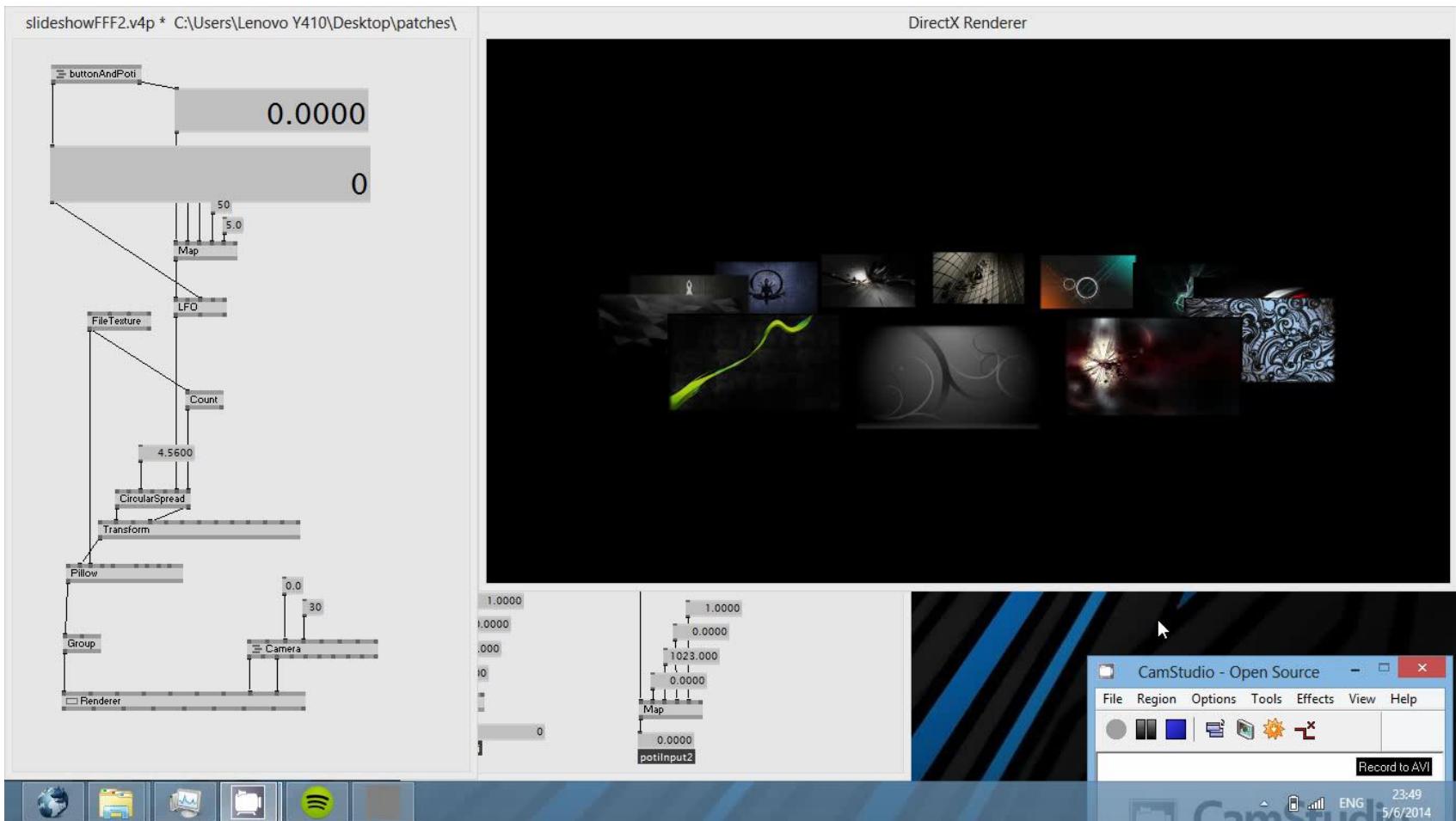
- easy, fast
- minimum and maximum





# POTENTIOMETER SETUP WITH ARDUINO





# TEMPERATUE SENSOR

- Definition

- a device, typically, a Resistance Temperature Detector, that provides for temperature measurement through an electrical Signal.

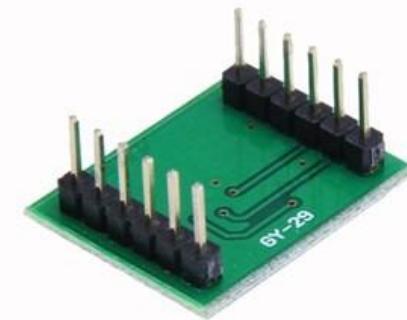
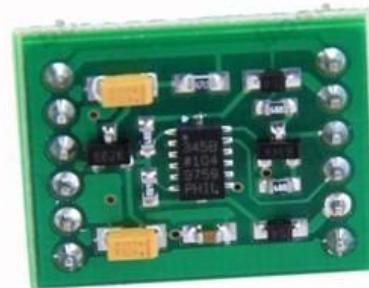
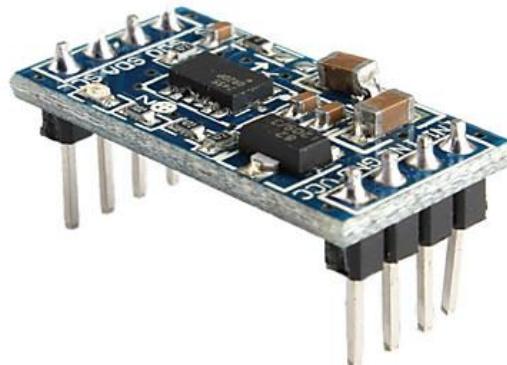
- manipulates the resistance





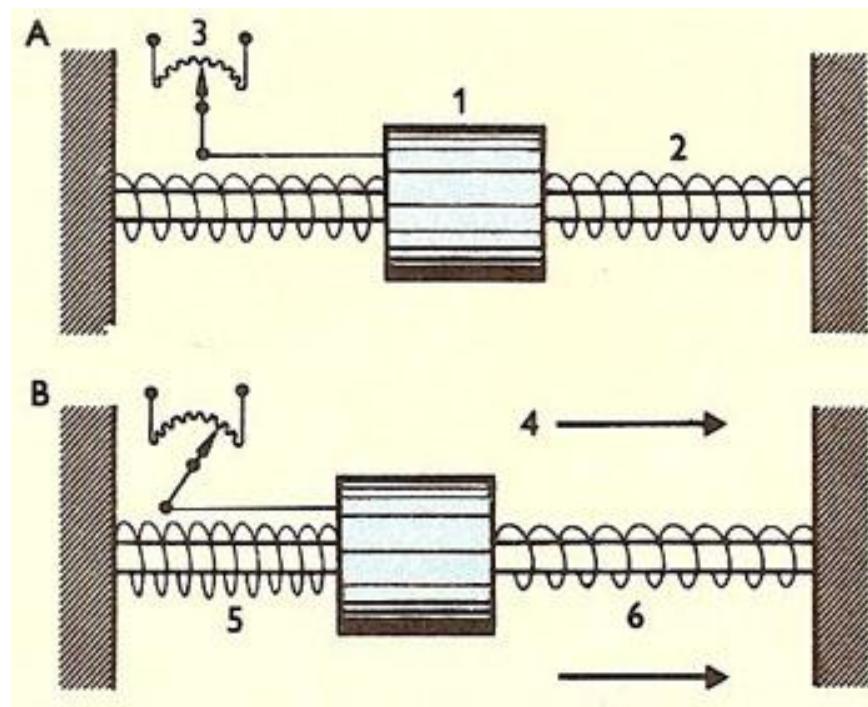
# ACCELERATION SENSOR

- o by David Haidl



# WHAT IS IT?

- also called accelerometer
- to measure relative acceleration
- use inertia of mass



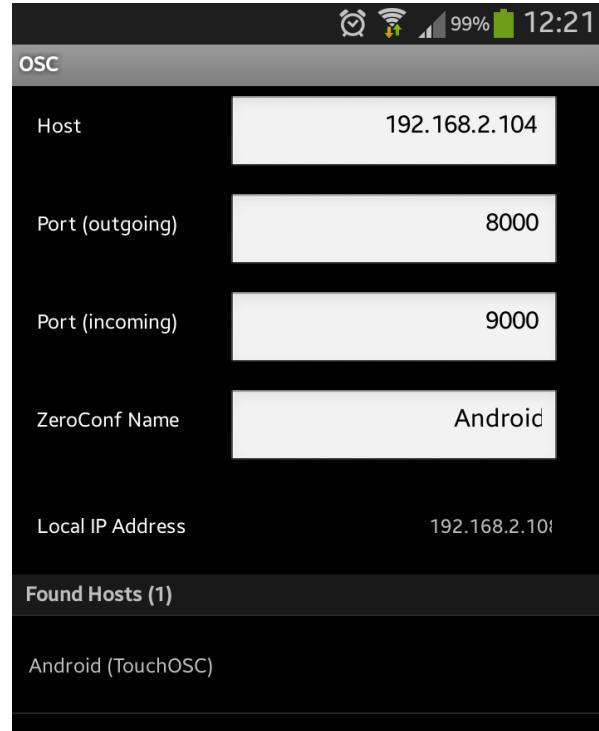
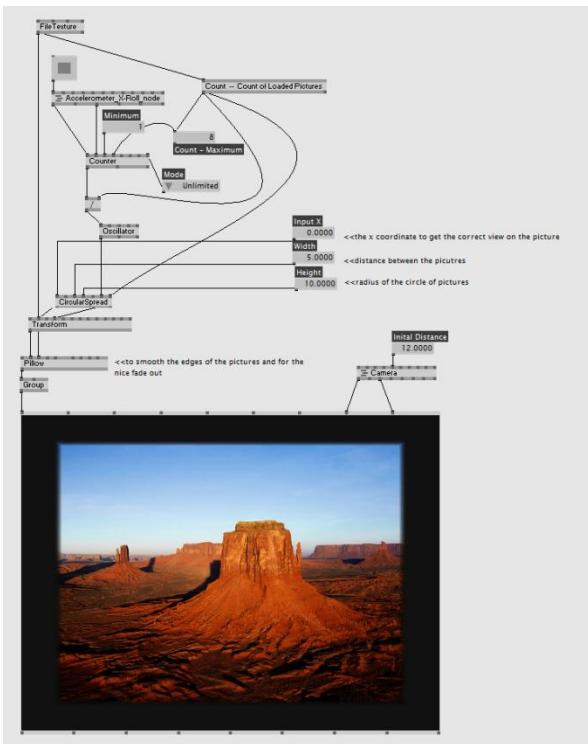
# WHERE IS IT USED IN?

- hard disc drive
- cars
- drones
- smartphones



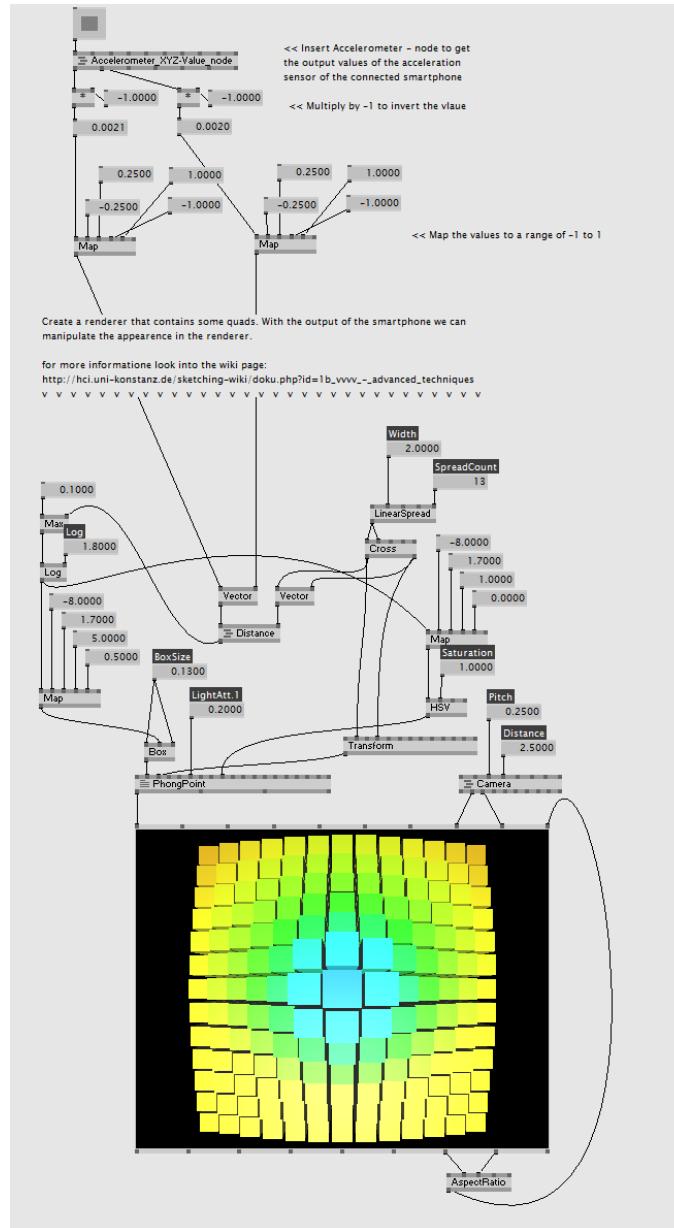
# PATCHES

- VVVV to smartphone
- slide show



# PATCHES

## o box transform



Questions???



Thank you for  
your attention.



## Sources:

- Prototyping interfaces: Interaktives skizzieren mit vvvv: Hermann Schmidt Mainz Verlag 2013
- <http://en.wikipedia.org/wiki/Accelerometer>
- <http://prototypinginterfaces.com/>
- <http://hci.uni-konstanz.de/sketching-wiki/doku.php?id=start&do=login&sectok=f51c01af91f6f0a7927bf3a8c815bd52>
- [http://www.ruhrnachrichten.de/nachrichten/vermisches/aktuelles\\_berichte/Nach-Bahn-Vorstoss-Polizei-und-Feuerwehr-nutzen-bereits-Drohnen;art29854,2020134](http://www.ruhrnachrichten.de/nachrichten/vermisches/aktuelles_berichte/Nach-Bahn-Vorstoss-Polizei-und-Feuerwehr-nutzen-bereits-Drohnen;art29854,2020134)
- [http://de.mario.wikia.com/wiki/Datei:MKW\\_Artwork\\_Mario\\_2.jpg](http://de.mario.wikia.com/wiki/Datei:MKW_Artwork_Mario_2.jpg)
- [http://r3.whistleout.com.au/public/images/blog/2012/07/samsung\\_galaxy\\_s3\\_review\\_10.jpg](http://r3.whistleout.com.au/public/images/blog/2012/07/samsung_galaxy_s3_review_10.jpg)
- <http://module.blog.com/gy-29-3-axis-accelerometer-sensor-module-adxl345-for-arduino/>
- [http://www.miniinthebox.com/de/digitale-neigungswinkelsensorbeschleunigungsmodul-i2c-spi-fuer-arduino\\_p411843.html](http://www.miniinthebox.com/de/digitale-neigungswinkelsensorbeschleunigungsmodul-i2c-spi-fuer-arduino_p411843.html)
- <http://images.highspeedbackbone.net/skuimages/large/Seagate72007-main-2.jpg>