

Soirée Pratique

**Introduction Sumo Robot + Arduino session
3/11/2015**

slides + extra information:

www.ieee-sb-leuven.be/soireepratique2015

Soirée Pratique

- Organized by IEEE Student Branch Leuven
- Goal:
 - Give engineers practical experience,
 - In a fun way,
 - During a two-hour session,
 - and hands-on!
- Monday evening 19h30



"Your hands-off approach isn't working."

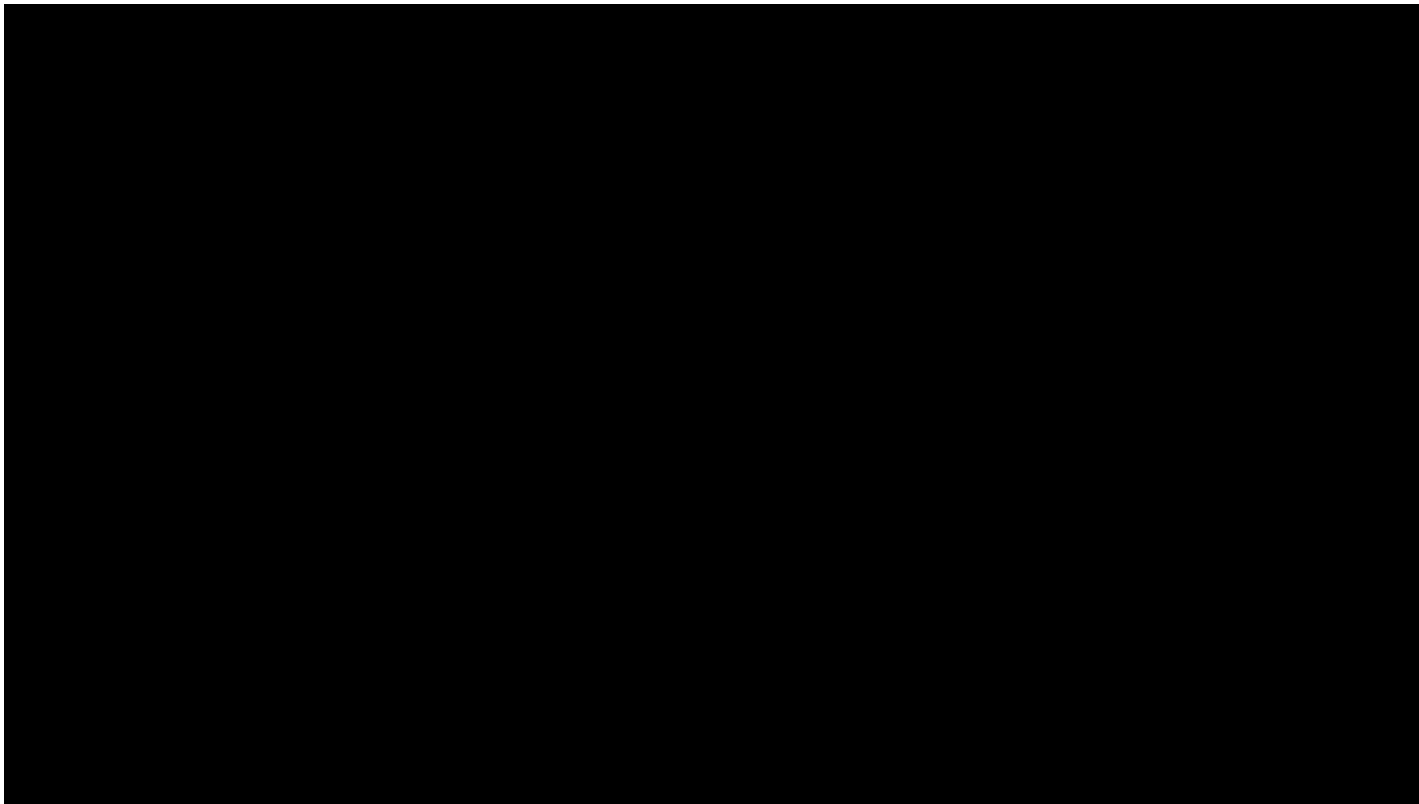
Main activities

1. Sumo robot competition
2. Drone Nights
3. Small DIY projects

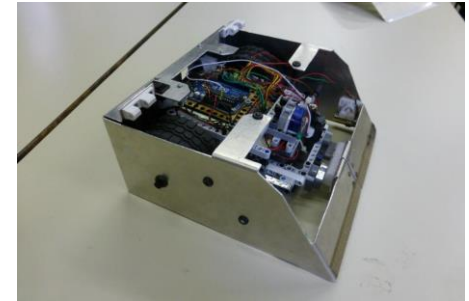
1) Sumo-robot competition

■ Build your own fully autonomous robot!

■ https://www.youtube.com/watch?feature=player_embedded&v=B3tUA7A14Lc



1) Sumo-robot competition



Competition Leuven



Competition Ghent

Schedule sumo robot competition

- **Tuesday 3/11** at 19h30:
 - first session sumo robots: introduction arduino, information on ordering parts
- **Monday 16/11**:
 - motor session: the “muscles”
- **Monday 30/11**:
 - sensor session: the “eyes”
- **Second semester**:
 - frame building: the “skeleton”
 - advanced programming: the “brains”
 - training sessions + final competition

Soirée Pratique

- for latest info on sessions:
 - <http://www.ieee-sb-leuven.be/>
 - <http://www.ieee-sb-leuven.be/soireepratique2015>
- Facebook group:
 - [Soirée Pratique Leuven](#)

1) Sumo Competition

- Organized over two semesters
- Sessions start in a couple of weeks
- We offer standard packages:
 - brain package, motor package, sensor package
- New this year:
 - default simple frame provided
 - default simple code provided

Today: “Brain” package

- For programming our sumo-robot
- Contains:
 - Arduino
 - Breadboard
 - USB-cable
 - leds
 - resistors
- 12 euro for non-IEEE members
- 10 euro for IEEE members

Arduino



Arduino microcontroller: brains of our application

1. Installation

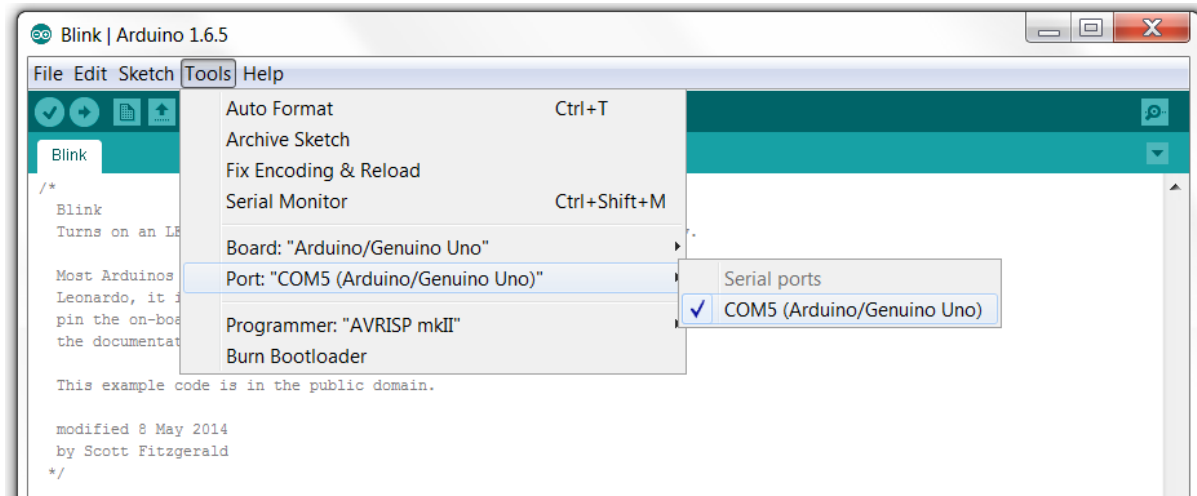
- www.arduino.cc => Download

2. Tutorials

- www.arduino.cc => Learning
=> Tutorials => Built-In Examples

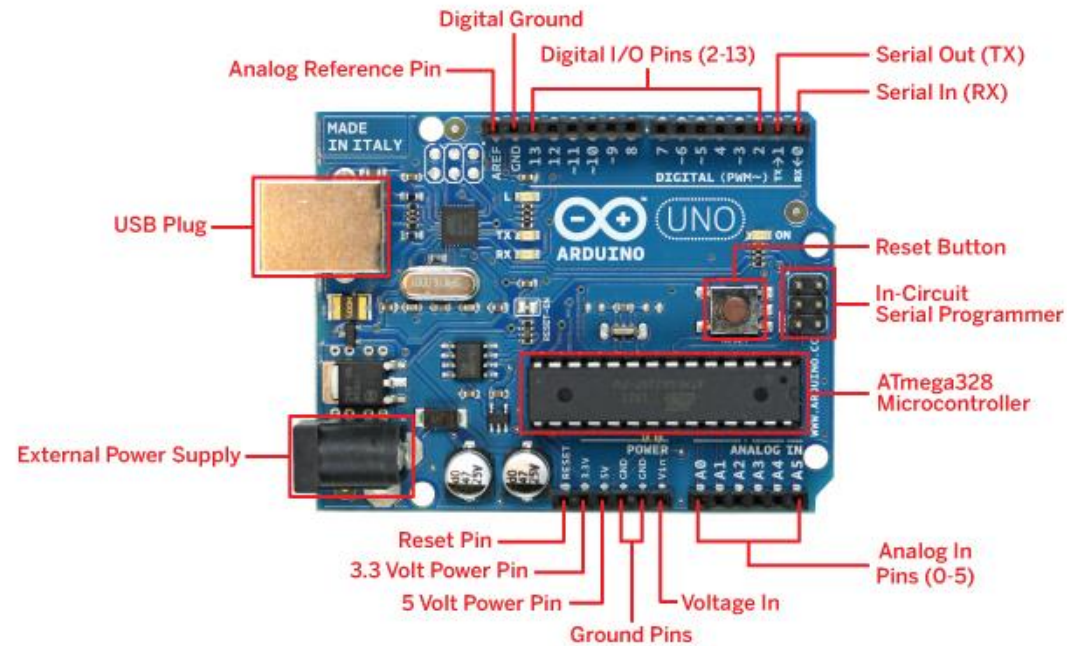
Installing the Arduino

- After installation, connect the Arduino using the USB cable
- Make sure to select the right port to communicate with the Arduino



Arduino

■ Arduino layout:

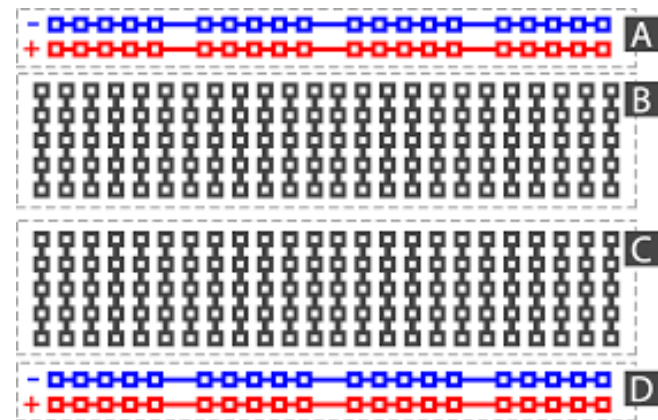
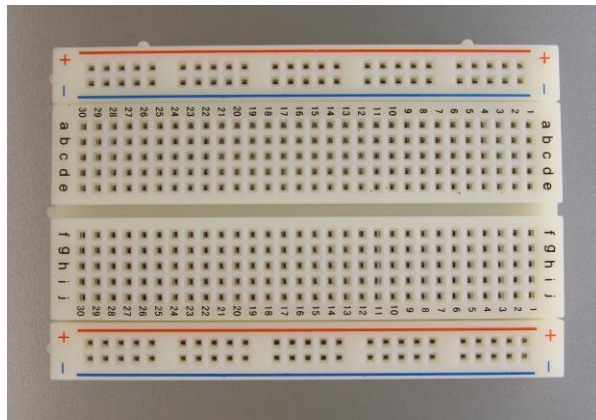


■ important commands:

- pinMode (declare inputs/outputs)
- digitalWrite / digitalWrite
- analogRead / analogWrite
- Serial.begin / Serial.println (monitor)

Breadboard

- Breadboard: connection layout



Applications with Arduino

Tutorials:

1. basics -> Blink
2. basics -> Fade
3. basics -> DigitalReadSerial
4. digital -> ToneMelody

...

If done with tutorials:

try making an application in which you can turn both a LED and a Buzzer on/off by pressing a button or switch

Next Soiree Pratique

- **Mondag 16/11 at 19h30:**
 - motor session: “the muscles” of the robot
 - learning how to