



Samuel Bensadoun T°8

Summary



Introduction

I - Project presentation

- 1) How it works ?
- 2) The technical features



II - Distribution of tasks

- 1) The different parts of the work
- 2) Tasks : what I have to do (Bluetooth + Arduino system)

III - Specifications

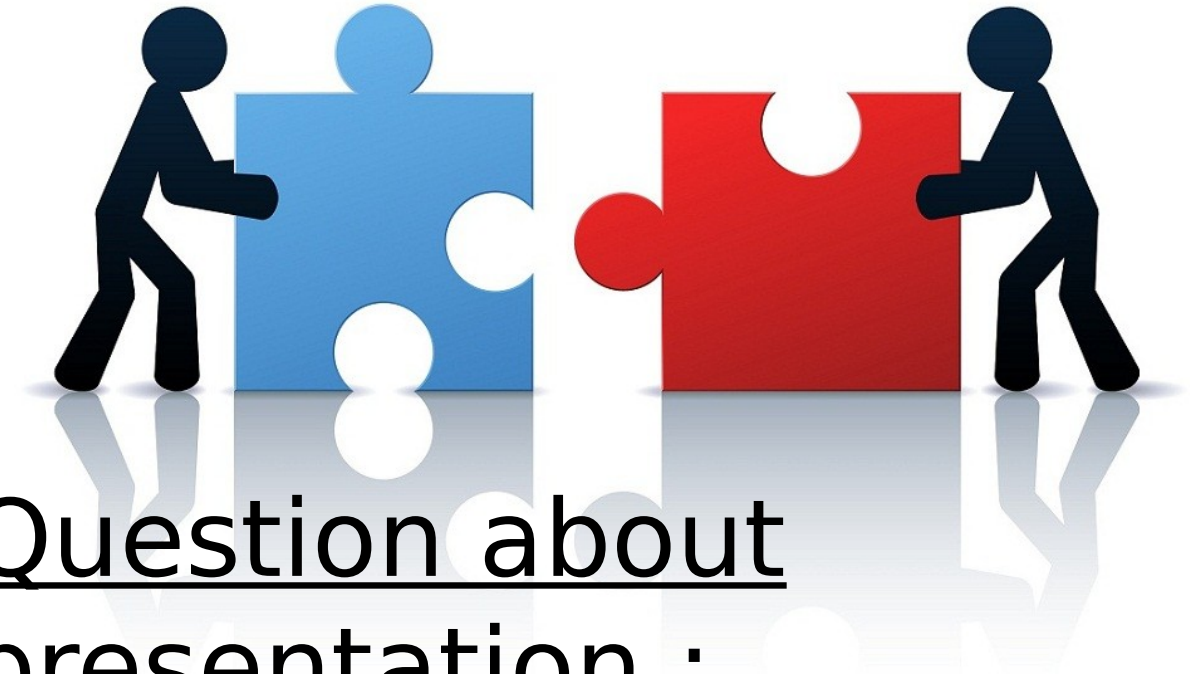
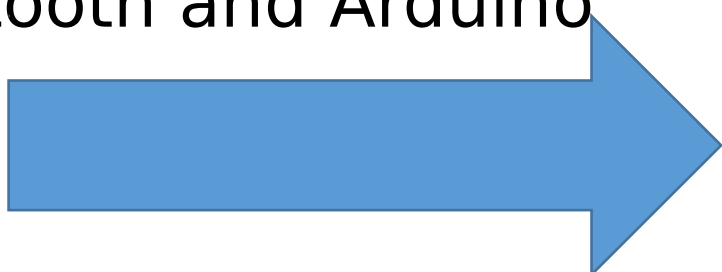
- 1) Constraints (SysML use case diagram)
- 2) The problems encountered

Conclusion

Introductions

Let me introduce :

- My name is Samuel Bensadoun
- 4 school mates are working on this project
- Project presentation : Gyrobot
- Project already exists but we have decided to add some options
- Every person has their work to do (Me : Bluetooth and Arduino system)

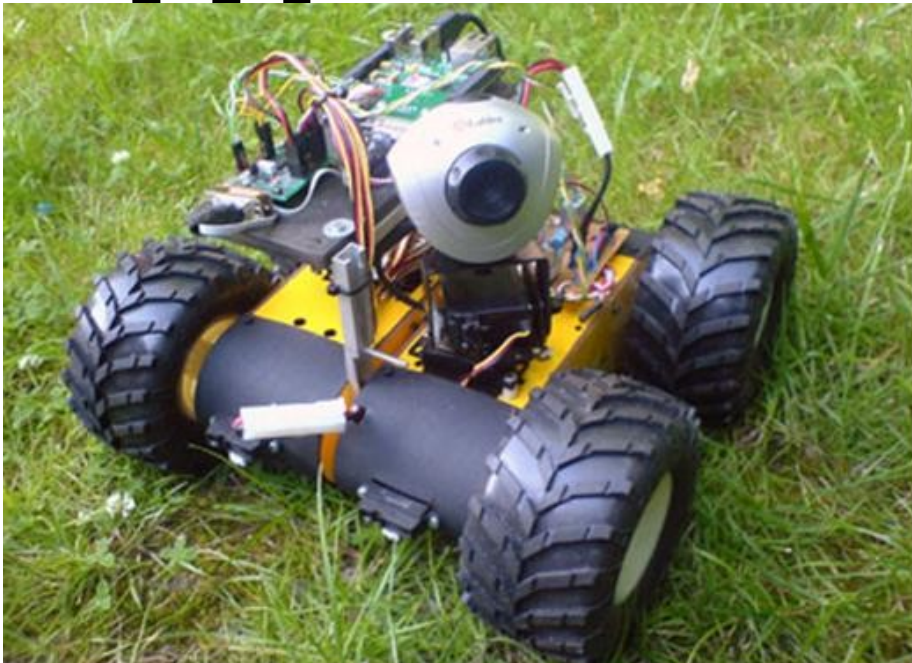


Question about presentation :

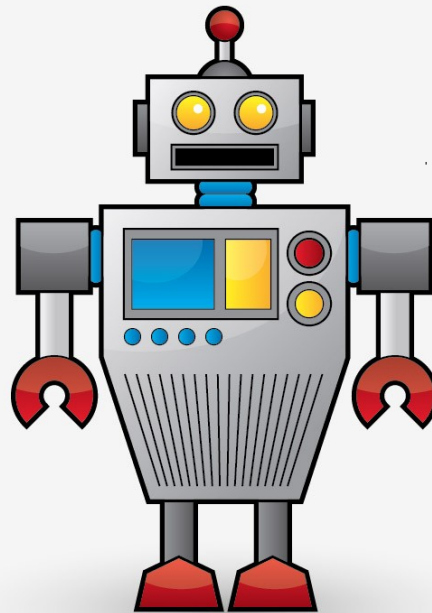
**What is
the « GYROBOT »
project ?**

Why did we call it « GYROBOT » ?

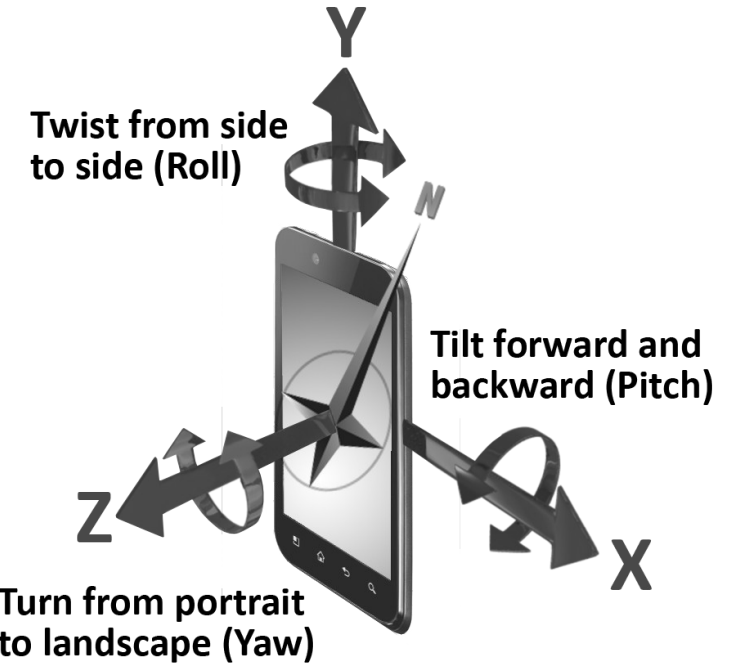
GYROBOT



Robot



Gyroscope



Describes the gradual change in direction of the axis of rotation of the gyroscope by the action of the environment.



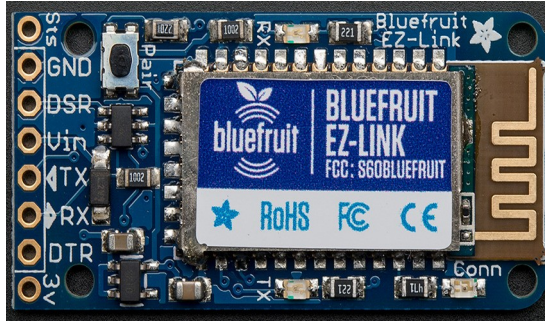
ANDROID

I - Project presentation

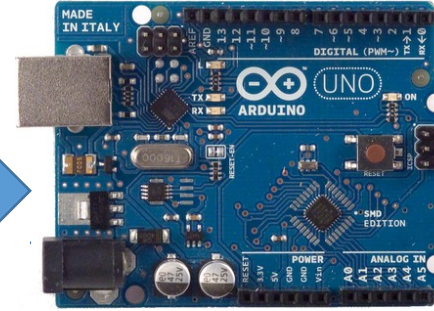
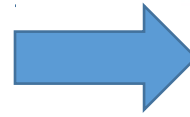
1) How it works ?



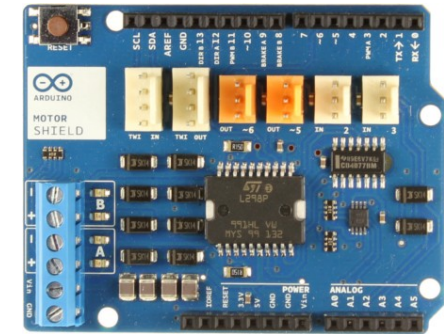
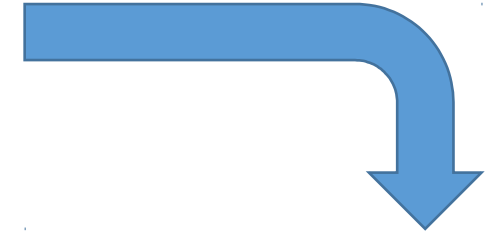
Smartphone
screen android
application



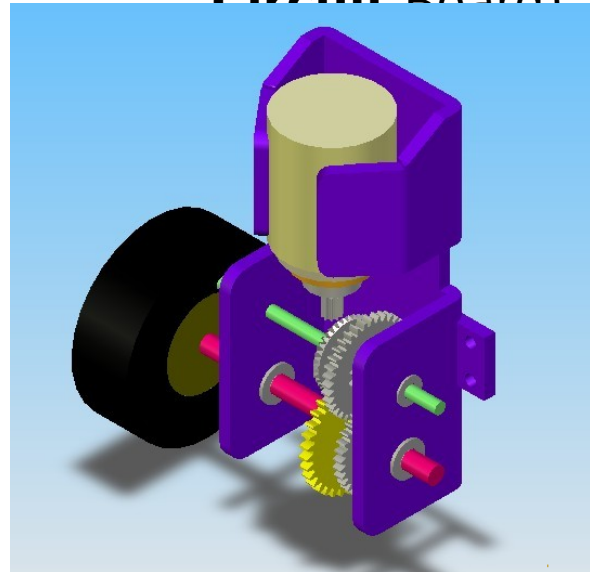
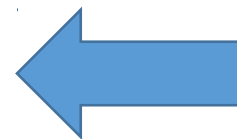
Arduino Bluetooth
Shield



Arduino Uno (main
**Printed
Circuit Board**)



Arduino Motor Shield



Motors CC



Bluetooth is a wireless
technology standard for
exchanging data over short

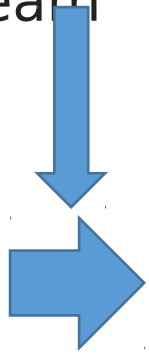


Robot rolling

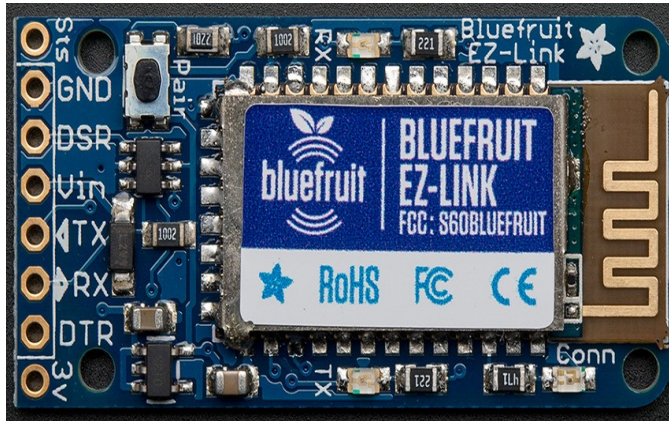


Optional function

video
stream



**Arduino
camera**



**Arduino Bluetooth
Shield**



**Display on smartphone or
touchpad**

2) The technical features

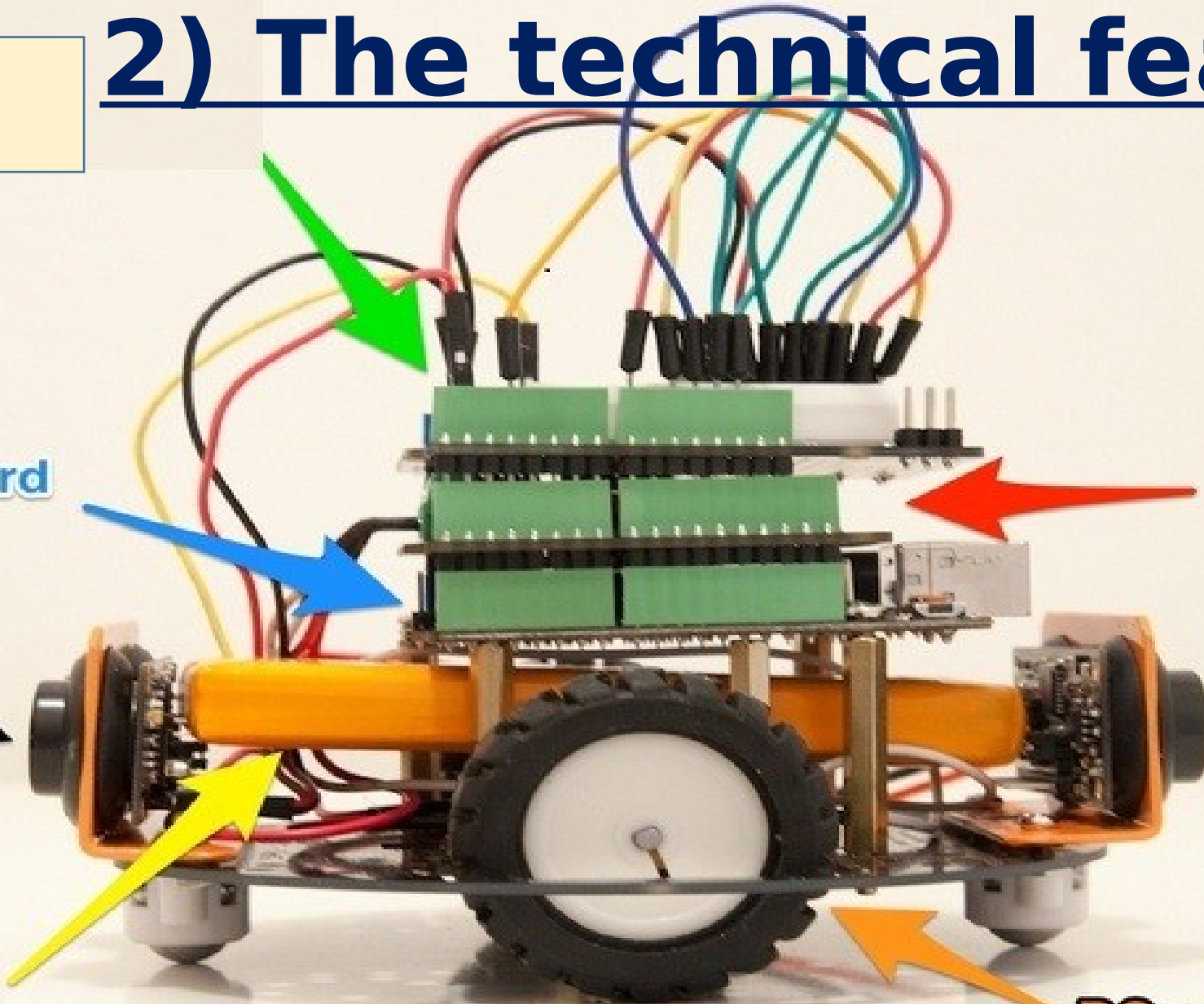
**Bluetooth
Shield**

**Arduino Uno
compatible board**

Motor Shield

Battery 12v

DC motors + wheels



A rechargeable Lithium battery 12v



**T
O**

**Supply
+ the 3 Arduino
cards**

- Uno card**
- Bluetooth shield**
- Motor shield**

**+ Camera
+ 2 motors**

Battery charger



**T
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**allow the
robot to
be
independ
ent**

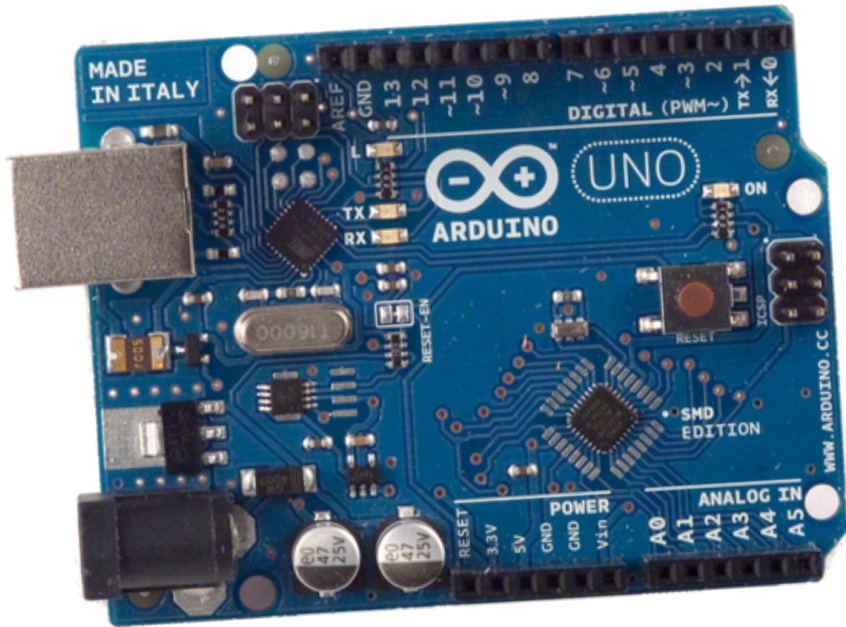
Frame + 2 motors + 4 wheels



T_0

support
all
piece

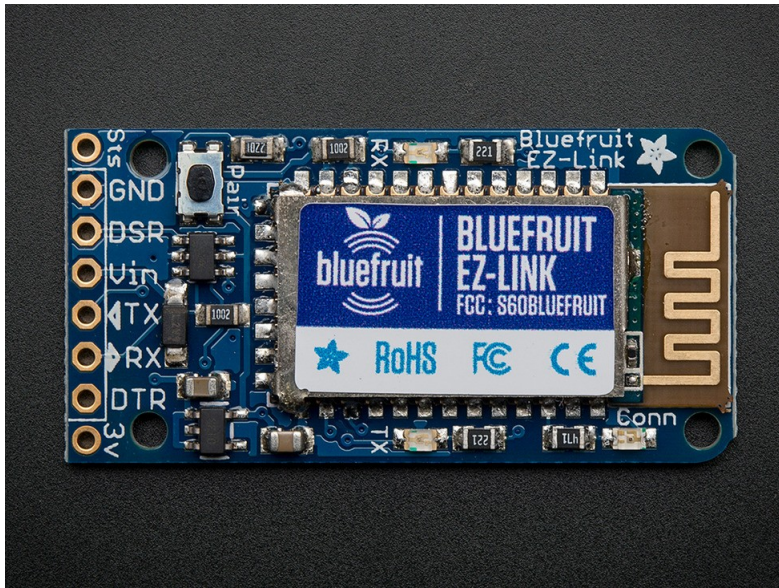
Arduino Uno R3 (the main PCB)



**T
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**trigger
events
based
on
states**

Bluetooth shield



**T
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**send
informati
on by
wireless
device**

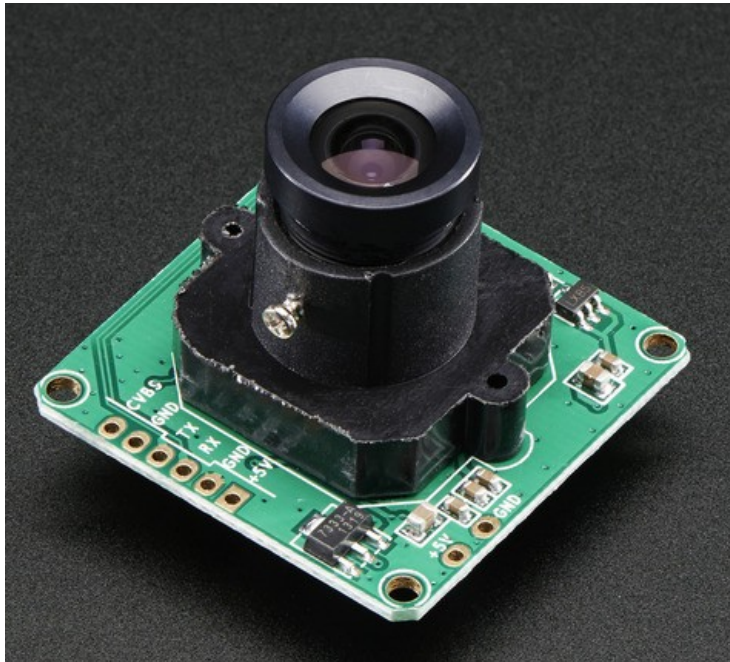
Voltage regulator



T_o

allow
for a
fixed
value

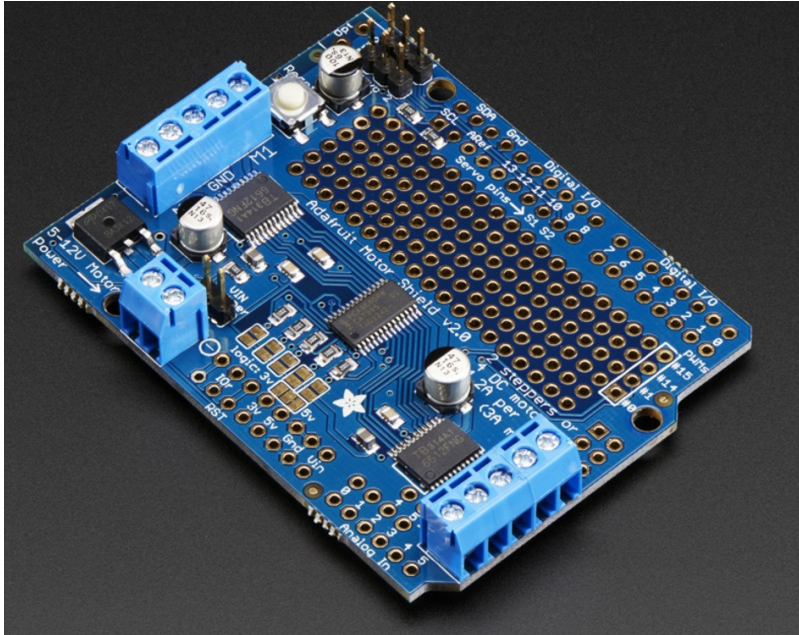
Camera



**T
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**stream
m
video**

Motor shield



**T
O**

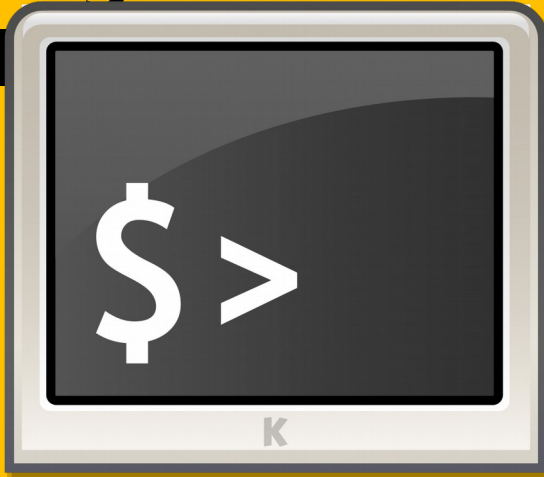
**command the
2
motors**

II - Distribution of tasks

1) The different parts of the work

Programmation Arduino +

bl



MAKE YOUR

ANDROID DREAMS

COME TRUE WITH

ANDROID DEVELOPERS

Programming android application



GYROBO

electronics / Electrical

T

mechanical Design

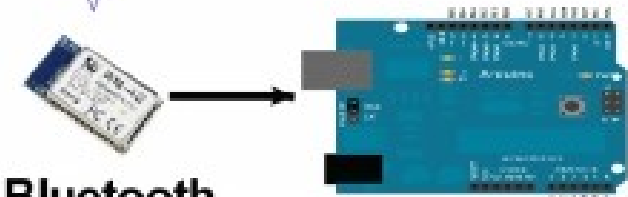
2) Tasks : what I have to do (Bluetooth + Arduino system)

**Create
Bluetooth
connexion
between the**



Android Device

ARDUINO



**Create programmms
into the 3 arduino
PCB**



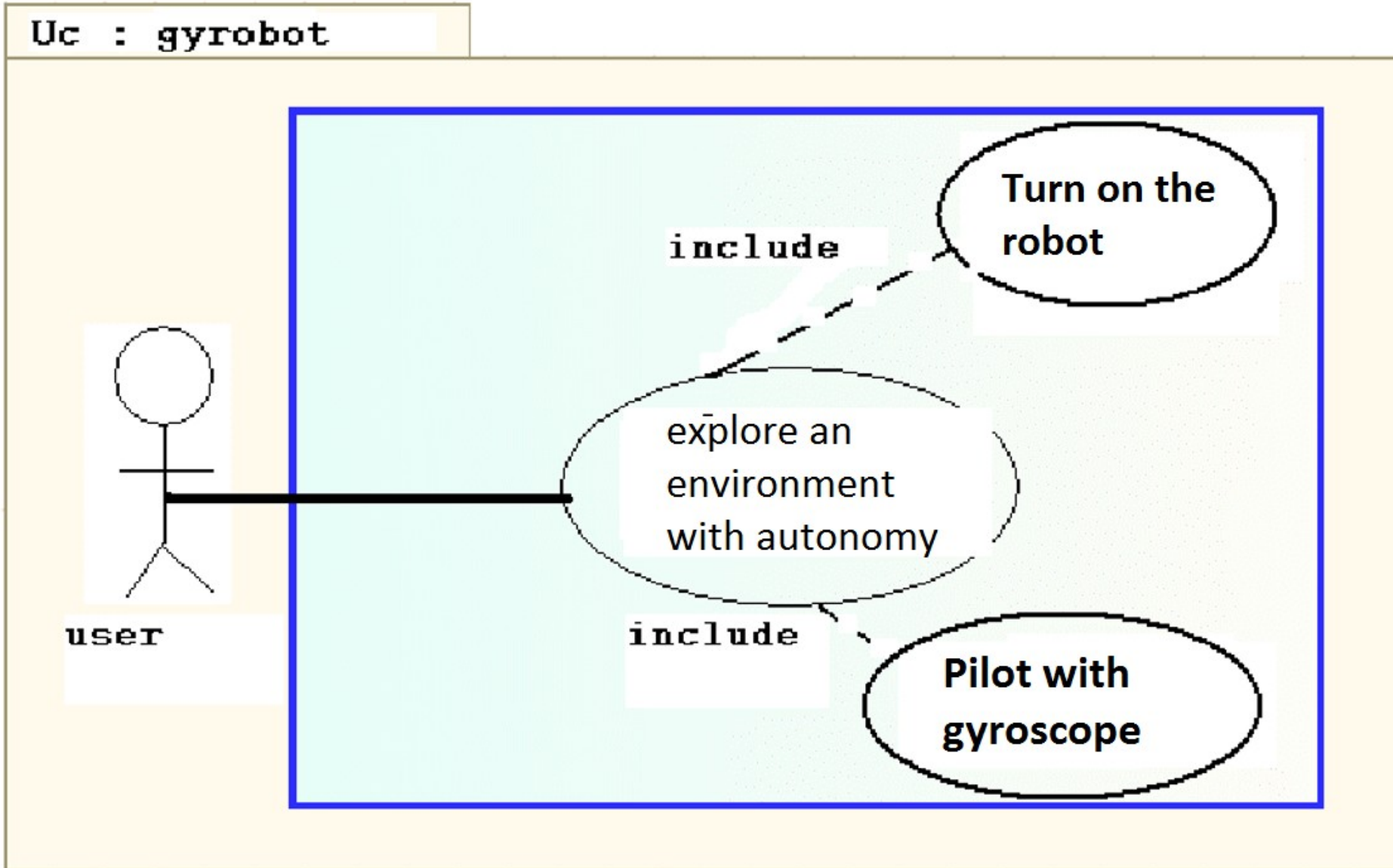
**Example of an
Arduino
programming**

**Check
tasks**



III - Specifications

1) Constraints (SysML use case diagram)



2) The problems encountered

- => Use the gyroscope to steer the robot**
- => Have a robot strong enough to explore hostile environments.**
- => transmitting by Bluetooth**
- => A Reduced budget**
- => Have a product that meets the criteria of sustainable development**
- => A small team of 4 people**

Conclusion

- a funny way
- A good opportunity to move a step forward in Robotical field.
- a good experience of team working
- provide us the means to achieve this project



I hope we are going to have good time on it !!

**Thank you for
listenning !!!!! ;)**

Goodbye