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 PROJECT #1 PROPOSAL

**Name(s): Lasse Zeh, Vincent Herres**

**Project: Bluetooth RC Car**

**Part A: Brainstorming...**

* **describe your project idea(s)**

**For our project, we want to take a normal rc car, but transforming it into a bluetooth controlled rc car. We want to control it over an app from our phones. Added to that, we want to provide it with LED-lights, that light up in response to the direction the car drives.**

* **List your learning objectives**

**As we both did never build such a thing before, we are excited to learn all the basic electronic skills like coding, connecting the car to our phones with a bluetooth module, and especially programming an Arduino nano. For our design, we think of including the vinyl-cutter, and maybe the 3d printer.**

* **State the goal(s) of your project**

**The main goal will obviously be, being able to control the car with our phones. By controlling we mean, letting it drive a parkour or something like that. Also, we want to design it as best as possible. Depending on the project of others, we could organize a race between rc cars, if there are others.**

**Part B: Electronic Resources…List active hyperlinks to any relevant online resources**

**The instructable:** [**http://www.instructables.com/id/RC-Car-Arduino-Project/**](http://www.instructables.com/id/RC-Car-Arduino-Project/)

**Part C: Planning…**

* **Materials list [NOTE: We highlighted the items we need purchase from Amazon.ca]**
* **any RC car toy chassis (Porsche 911 GT3):**

[**https://www.amazon.ca/Porsche-Scale-Plastic-Model-Tamiya/dp/B000LFUB8K****/ref=sr\_1\_6?ie=UTF8&qid=1519081760&sr=8-6&keywords=porsche+gt3+rc**](https://www.amazon.ca/Porsche-Scale-Plastic-Model-Tamiya/dp/B000LFUB8K/ref%3Dsr_1_6?ie=UTF8&qid=1519081760&sr=8-6&keywords=porsche+gt3+rc)

* **PCB:**

[**https://www.amazon.ca/Gikfun-Solder-able-Breadboard-Arduino-GK1007C/dp****/B06ZY75TWX/ref=sr\_1\_1?s=toys&ie=UTF8&qid=1519082232&sr=1-1&keywords=PCB**](https://www.amazon.ca/Gikfun-Solder-able-Breadboard-Arduino-GK1007C/dp/B06ZY75TWX/ref%3Dsr_1_1?s=toys&ie=UTF8&qid=1519082232&sr=1-1&keywords=PCB)

* **one Arduino nano:**

[**https://www.amazon.ca/Ardui****no-NANO-V3-0-Atmega328P-Development/dp/B01FV7NIUA/ref=sr\_1\_5?ie=UTF8&qid=1519257952&sr=8-5&keywords=arduino+nano**](https://www.amazon.ca/Arduino-NANO-V3-0-Atmega328P-Development/dp/B01FV7NIUA/ref%3Dsr_1_5?ie=UTF8&qid=1519257952&sr=8-5&keywords=arduino+nano)

* **HC-05 or HC-06 Bluetooth module:**

[**https://www.amazon.ca/DSD-TECH-HC-05-Pass-through-Communication/dp/B01G9K****SAF6/ref=sr\_1****\_1?s=electronics&ie=UTF8&qid=1519082437&sr=1-1&keywords=DSD+TECH+HC-05+Bluetooth+Serial+Pass-through+Module+Wireless+Serial+Communication+with+Button+for+Arduino**](https://www.amazon.ca/DSD-TECH-HC-05-Pass-through-Communication/dp/B01G9KSAF6/ref%3Dsr_1_1?s=electronics&ie=UTF8&qid=1519082437&sr=1-1&keywords=DSD+TECH+HC-05+Bluetooth+Serial+Pass-through+Module+Wireless+Serial+Communication+with+Button+for+Arduino)

* **Light sensor BH1750:**

[**https://www.amazon.ca/ILS-BH1750FVI-Intensity-Communication-Conversion/dp/B079124311/ref=sr\_1\_****fkm****r0\_3?s=electronics&ie=UTF8&qid=1519082637&sr=1-3-fkmr0&keywords=HiLetgo+GY-30+BH1750FVI+Digital+Light+Intensity+Sensor+Module+For+AVR+Arduino**](https://www.amazon.ca/ILS-BH1750FVI-Intensity-Communication-Conversion/dp/B079124311/ref%3Dsr_1_fkmr0_3?s=electronics&ie=UTF8&qid=1519082637&sr=1-3-fkmr0&keywords=HiLetgo+GY-30+BH1750FVI+Digital+Light+Intensity+Sensor+Module+For+AVR+Arduino)

* **Temperature and Humidity sensor:**

[**https://www.amazon.ca/Tempe****rature-Humidity-digital-interface-Arduino/dp/B07****5CNS7PS/ref=sr\_1\_fkmr0\_1?s=electronics&ie=UTF8&qid=1519082829&sr=1-1-fkmr0&keywords=Qunqi+DHT11+Analog+Temperature+%26+Humidity+Sensor+for+Arduino+Raspberry+Pi**](https://www.amazon.ca/Temperature-Humidity-digital-interface-Arduino/dp/B075CNS7PS/ref%3Dsr_1_fkmr0_1?s=electronics&ie=UTF8&qid=1519082829&sr=1-1-fkmr0&keywords=Qunqi+DHT11+Analog+Temperature+%26+Humidity+Sensor+for+Arduino+Raspberry+Pi)

* **L293D H-bridge motor driver (x 2):**

[**https://www.amazon.ca/****Adafruit-H-Bridge-Motor-Driver-Steppers/dp/B00NAY2URO/ref=sr\_1\_1?s=electronics&ie=UTF8&qid=1519083090&sr=1-1&keywords=Adafruit+Dual+H****-Bridge+Motor+Driver+for+DC+or+Steppers+-+600mA+-+L293D+%5BADA807%5D**](https://www.amazon.ca/Adafruit-H-Bridge-Motor-Driver-Steppers/dp/B00NAY2URO/ref%3Dsr_1_1?s=electronics&ie=UTF8&qid=1519083090&sr=1-1&keywords=Adafruit+Dual+H-Bridge+Motor+Driver+for+DC+or+Steppers+-+600mA+-+L293D+%5BADA807%5D)

* **RGB LEDs:**

[**https://www.amazon.ca/Gikfun-Assorted-Arduino-100pcs-EK8437/dp****/B01LZKPSS4/ref=sr\_1\_fkmr0\_1?s=electronics&ie=UTF8&qid=1519083157&sr=1-1-fkmr0&keywords=Chanzon+100+pcs+5mm+RGB+LED+Diode+Lights+Tricolor+%28Multicolor+Red+Green+Blue+4+pin****+Common+Anode+Clear+DC+20mA%2FColor%29+Super+Bright+Lighting+Bulb+Lamps+Electronics+Components+Light+Emitting+Diodes**](https://www.amazon.ca/Gikfun-Assorted-Arduino-100pcs-EK8437/dp/B01LZKPSS4/ref%3Dsr_1_fkmr0_1?s=electronics&ie=UTF8&qid=1519083157&sr=1-1-fkmr0&keywords=Chanzon+100+pcs+5mm+RGB+LED+Diode+Lights+Tricolor+%28Multicolor+Red+Green+Blue+4+pin+Common+Anode+Clear+DC+20mA%2FColor%29+Super+Bright+Lighting+Bulb+Lamps+Electronics+Components+Light+Emitting+Diodes)

* **5V buzzer:**

[**https://www.amazon.ca/Elepartpro-Electromagnetic-9mmx5-5mm-MultiRotor-Appliances/dp/B01IJAIP****H2/ref=sr\_1\_fkmr0\_1?s=electronics&ie=UTF8&qid=1519083229&sr=1-1-fkmr0&keywords=RJXHOBBY+Loud+5V****+active+RC+Alarm+Buzzer+Beeper+Tracker+12X9.5mm+for+FPV+Racing+Drone+10+PCS**](https://www.amazon.ca/Elepartpro-Electromagnetic-9mmx5-5mm-MultiRotor-Appliances/dp/B01IJAIPH2/ref%3Dsr_1_fkmr0_1?s=electronics&ie=UTF8&qid=1519083229&sr=1-1-fkmr0&keywords=RJXHOBBY+Loud+5V+active+RC+Alarm+Buzzer+Beeper+Tracker+12X9.5mm+for+FPV+Racing+Drone+10+PCS)

* **Header connectors:**

[https://www.amazon.ca/UEETEK-Breakaway-2-54mm-Connector-Arduino/dp/B075XJHV5P/ref=sr\_1\_fkmr1\_3?s=electronics&ie=UTF8&qid=1519410135&sr=1-3-fkmr1&keywords=OCR+2.54mm+Breakaway+PCB+Board+Header+Connector+Assortment+Kit+for+Arduino+Shield+%2820pcs+40Pin+Male+and+Female%29](https://www.amazon.ca/UEETEK-Breakaway-2-54mm-Connector-Arduino/dp/B075XJHV5P/ref%3Dsr_1_fkmr1_3?s=electronics&ie=UTF8&qid=1519410135&sr=1-3-fkmr1&keywords=OCR+2.54mm+Breakaway+PCB+Board+Header+Connector+Assortment+Kit+for+Arduino+Shield+%2820pcs+40Pin+Male+and+Female%29)

* **Designs…Include any sketches/pictures and/or links to videos**
* <https://youtu.be/Lx5w3OCO_Y0>

As you can see we want to add LEDs and stickers made with the vinyl-cutter.