

## 0.1 ARDUINOUNO AND ELECTRONICS SIMULATION

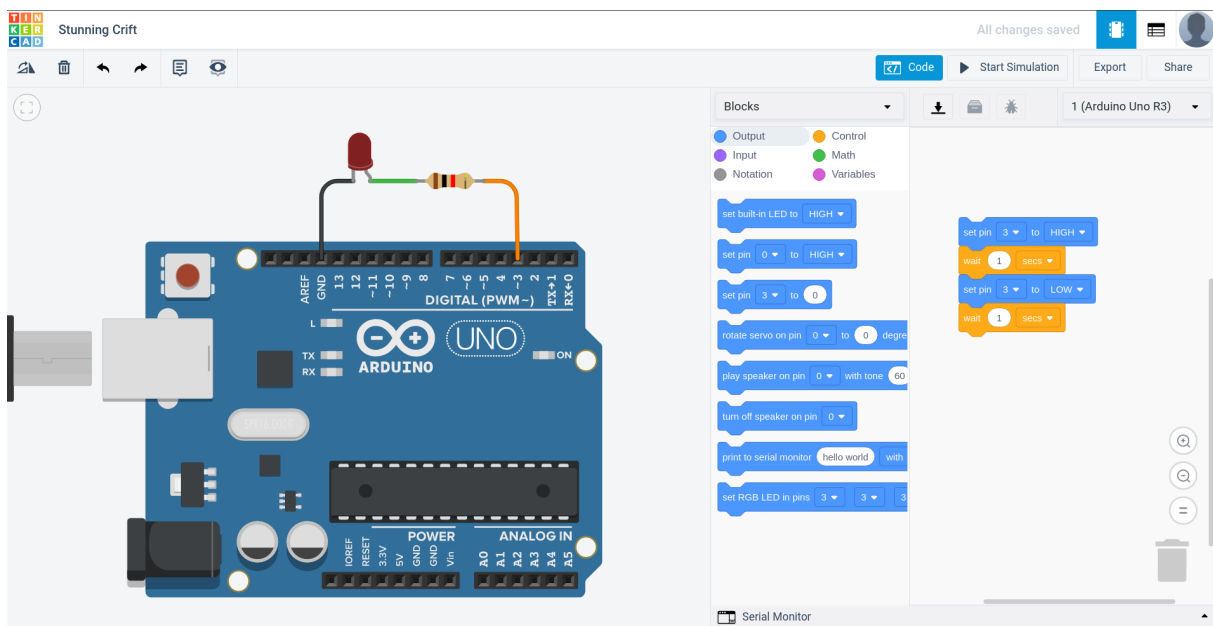
We can use several simulating programs to simulate robots. There are awesome platforms that allow simulations like: 3Dvisualizer or Webots ... But since our robot will be based on the Arduino Uno controller probably the best option is:

- **Thinkercad**

You can sign in with your google account.

### 0.1.1 Task:

1. Try to do some basic project (e.g. Blink) to turn on and off an LED.
2. Try to add your own LED on the different output pin and change the program like is shown on the fig. 1 to make it work (LED must blinking).



**Figure 1:** Blink example in Thinkercad.

### 0.1.2 Questions:

1. How can you control the output voltage potential?
2. In which direction will electric current flow?
3. What voltage is present on the resistor?

- How can we determine the voltage on the resistor (describe 2 possibilities)?
4. What voltage is present on the LED?