

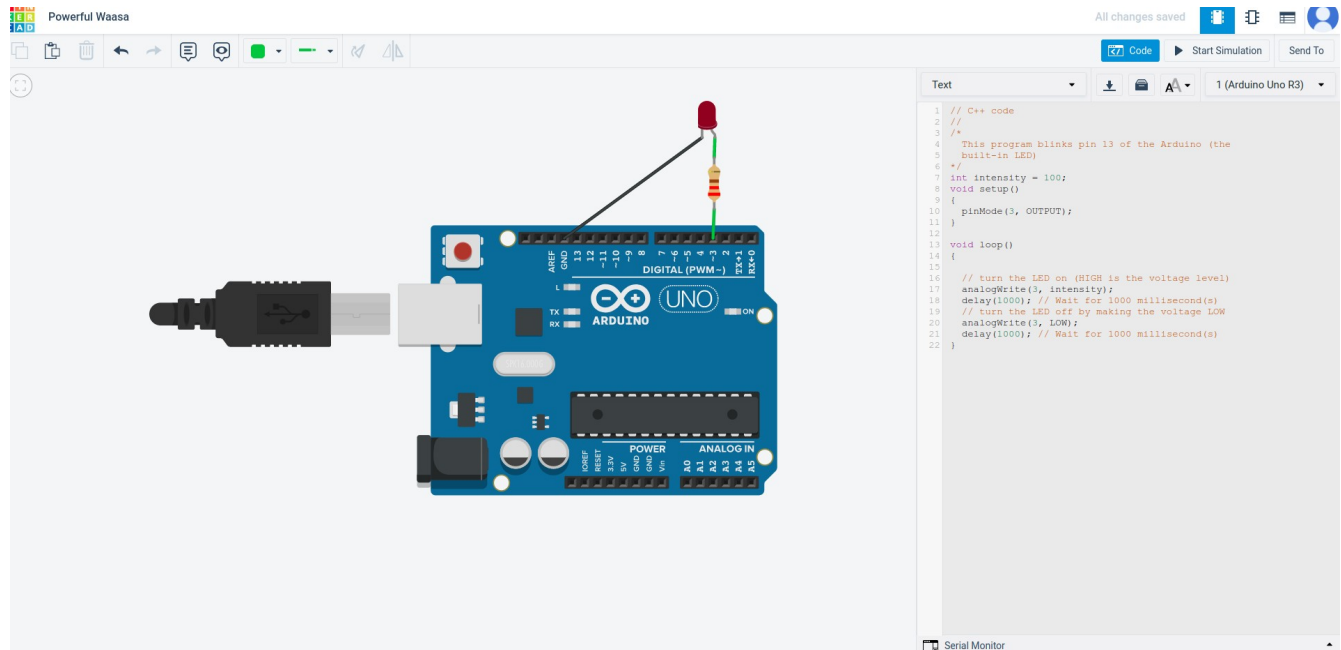
# SCS 2213 – Electronics and Physical Computer

## Practical 02

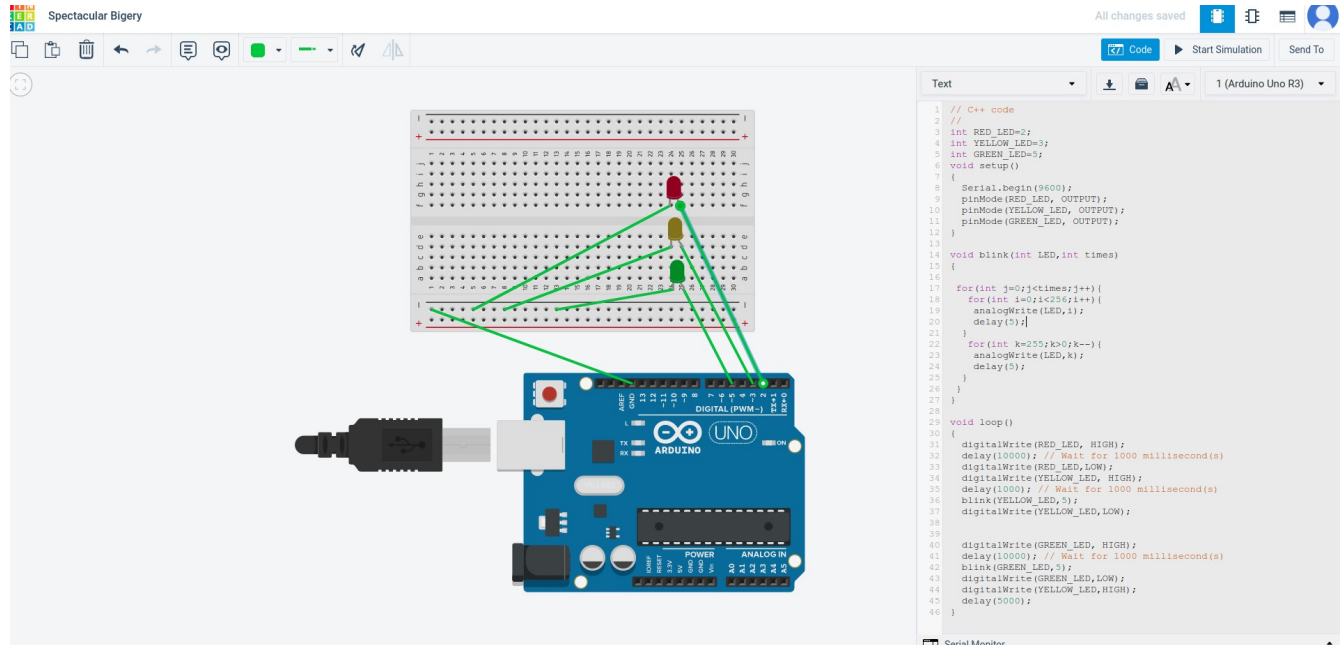
### 20002025

## Pulse wide modulation. (PWM)

### Task 01



### Task 02



## Task 03

Ingenious Vihelmo

All changes saved

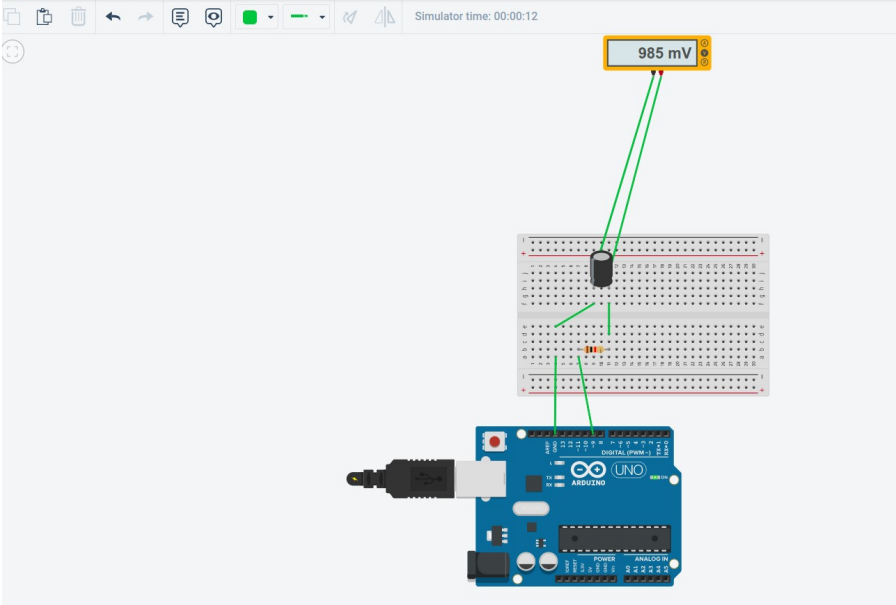
Simulator time: 00:00:12

Code Stop Simulation Send To

1 (Arduino Uno R3)

```
1 int ledPin = 9;
2 int timerInterval = 2000;
3 int dutyCycle = 0;
4 int voltage = 0;
5
6 void setup() {
7   pinMode(ledPin, OUTPUT);
8   analogWrite(ledPin, dutyCycle);
9 }
10
11 void loop() {
12   delay(timerInterval);
13   dutyCycle += 20;
14   if (dutyCycle > 1023) dutyCycle = 0;
15   voltage = map(dutyCycle, 0, 1023, 0, 50);
16   analogWrite(ledPin, dutyCycle);
17 }
18
```

Serial Monitor



## Task 04

Fluctuating 9V

All changes saved

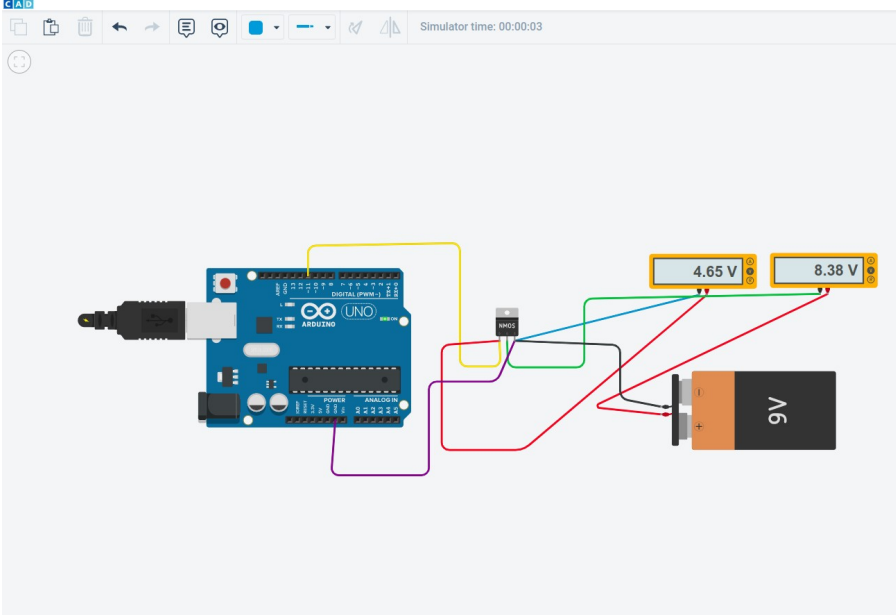
Simulator time: 00:00:03

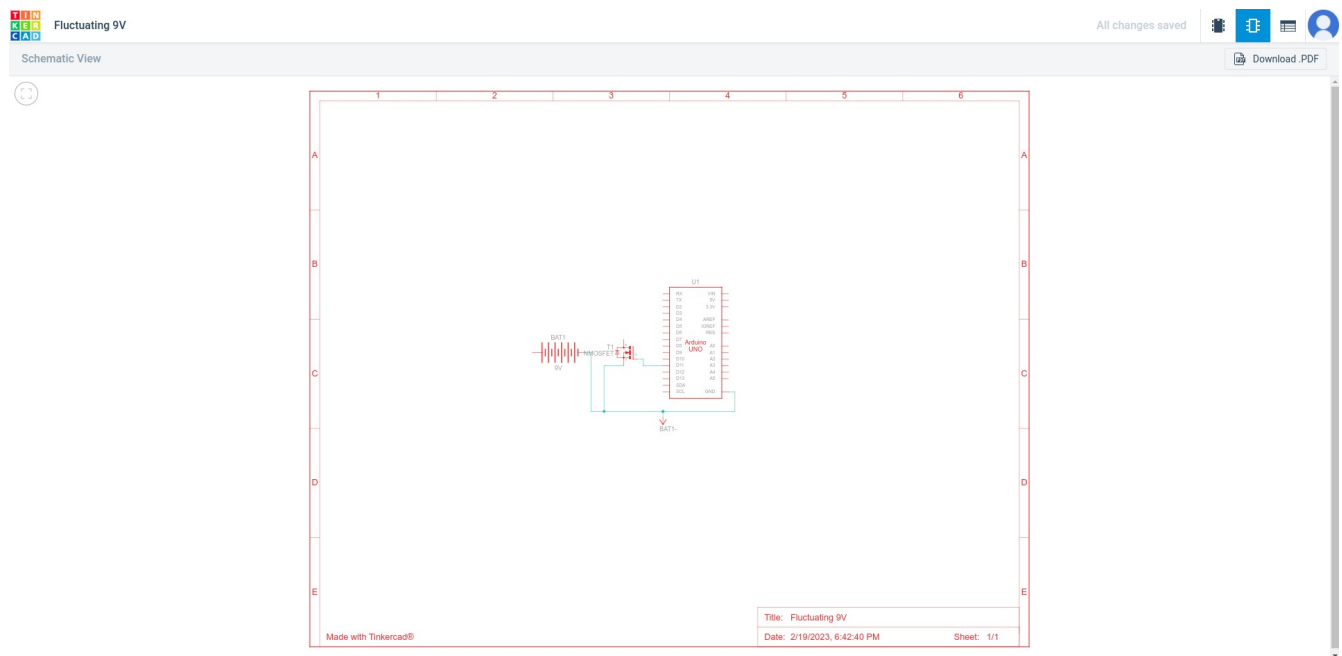
Code Stop Simulation Send To

1 (Arduino Uno R3)

```
1 int outputPin = 11;
2 int i = 0;
3 void setup() {
4 }
5 void loop() {
6   for (i = 0; i <= 255; i += 5) {
7     analogWrite(outputPin, i);
8     delay(12);
9   }
10   for (i = 255; i >= 0; i -= 5) {
11     analogWrite(outputPin, i);
12     delay(12);
13   }
14   delay(2);
15 }
16
```

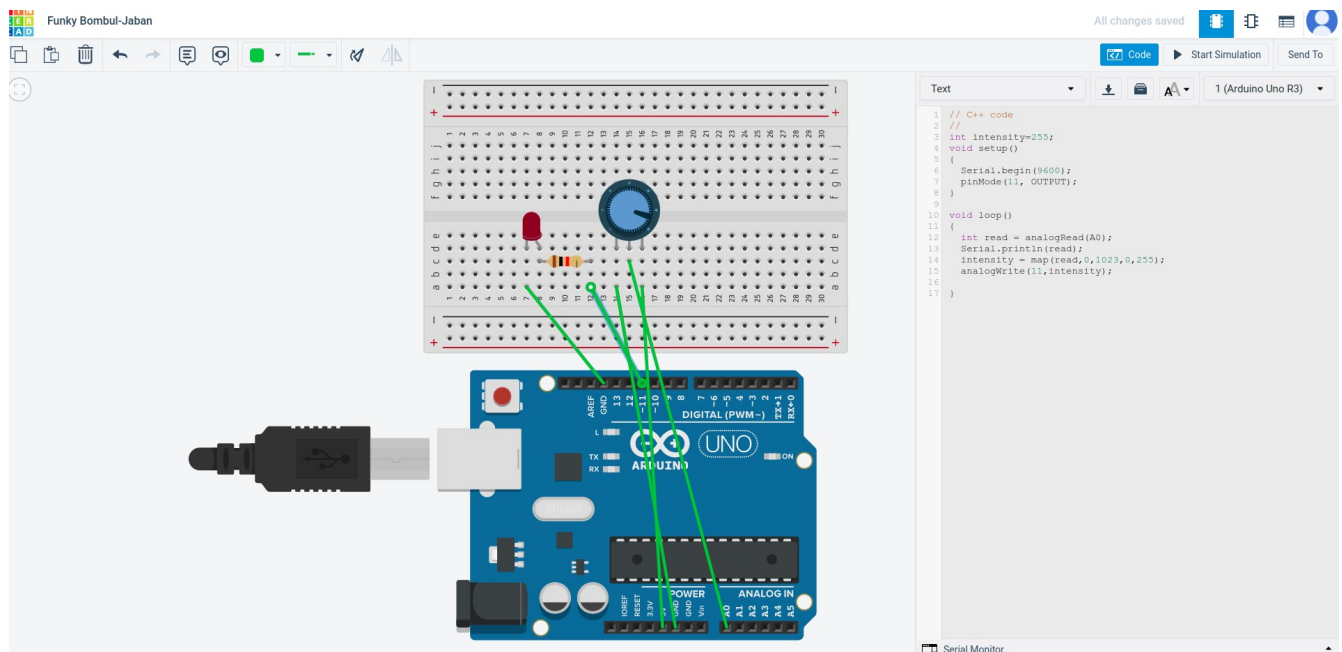
Serial Monitor



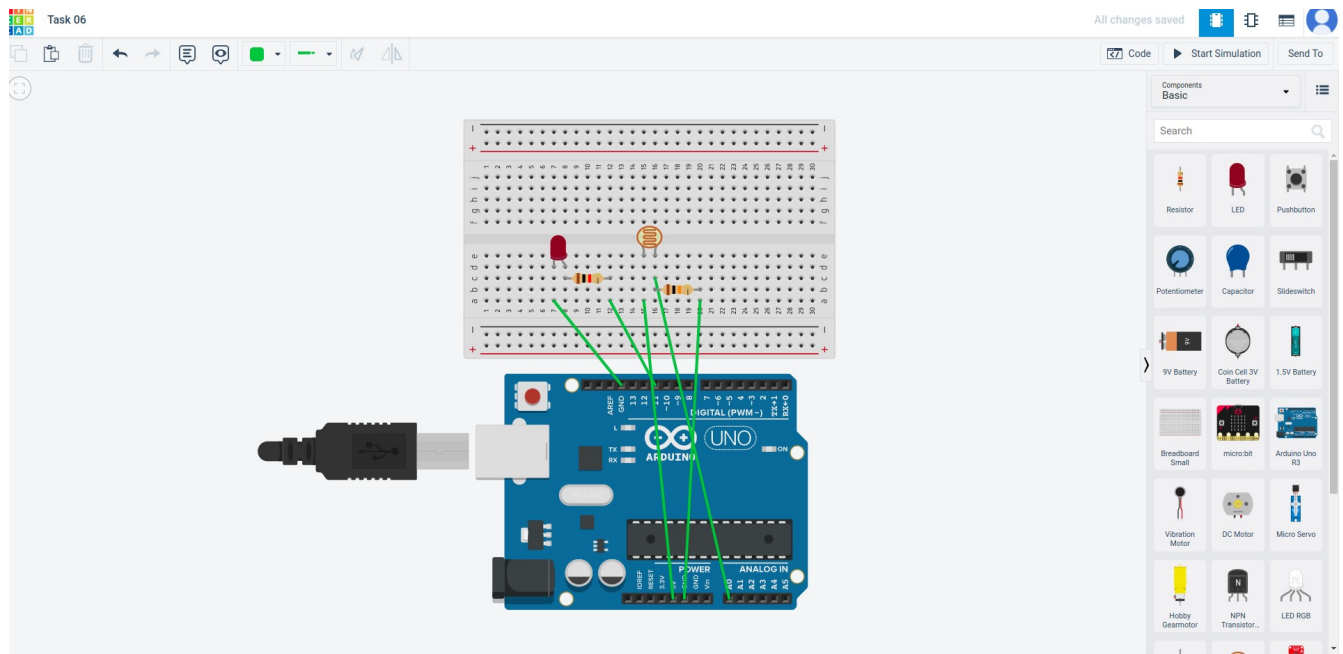


## Analog to digital converter (ADC)

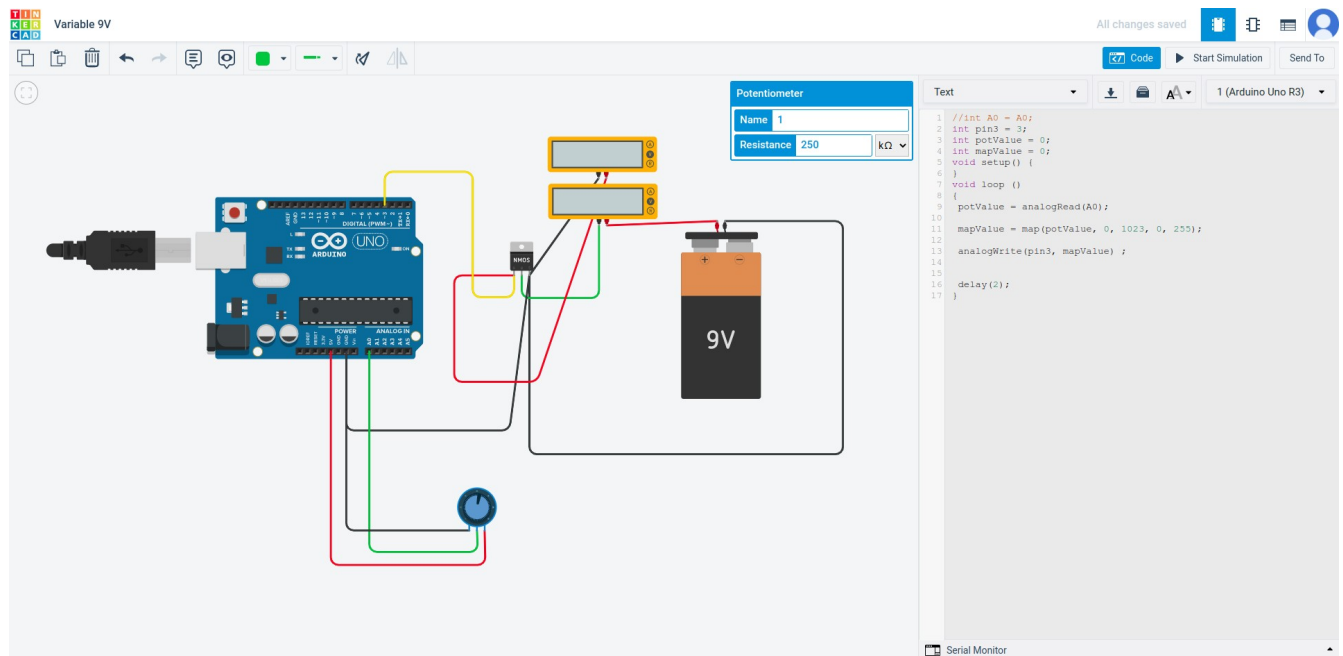
### Task 01



### Task 02



## Task 03



Schematic View

