



Activity report

Introduction to Arduino programming

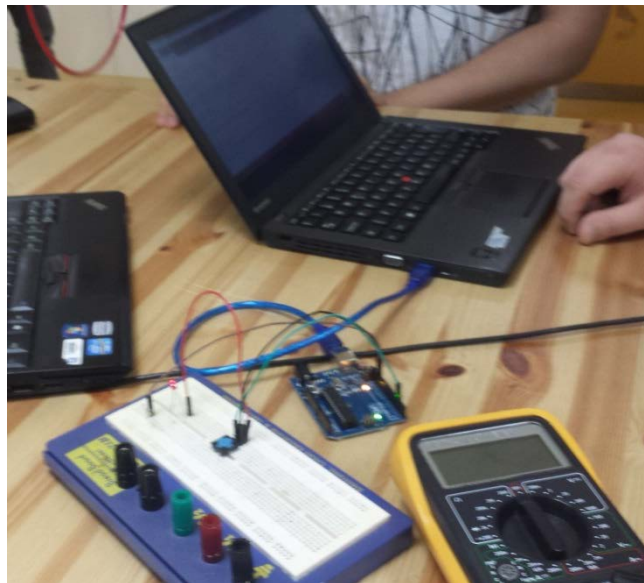
Project ICAROS	<i>[SE-WK-2017-01-31] Please follow this format:</i>
Report Code	<i>LL= 2 letter country code, PP = partner acronym, date</i>
Title	<i>Introduction to Arduino programming</i>
Start/End Date	<i>Started 11/10-2017 – Ended 11/10-2017</i>
Coordinator name and email	
Name of teachers	<i>Sten-Håkan Andersson, Lars Åström</i>
Number and age of students	<i>20 students, 18 y.o.</i>
Description of activities	<p><i>Write one or two paragraphs describing in brief the activities with the students. What they planned, what they did. Mention any difficulties or challenges:</i></p> <p>The Arduino Uno computer board is proposed to be used as the FCB(Flight Control Board) in ICAROS II.</p> <p>The students were introduced to the hardware of the Arduino Uno computer board regarding in- and output possibilities, specific data and so forth. They were also downloading the editing tool for writing, editing, compiling and downloading code. Their first assignment was to write code that read an input signal from a pushbutton that activates an output witch is connected to LED.</p> <p>The challenge is to apply to a new programming language. They are already familiar with Java but the Arduino is programmed in a C-like language.</p> <p>The activity includes electronics, physics and programming.</p>
Learning outcomes	<p><i>Give a short description of what students learned and achieved:</i></p> <p>They learned how to interpret the technical description of the computer board. They learned some basic electronics regarding signal levels, output currents and how LED's work. They also had to use knowledge from physics about electricity and ability of handling instruments for measuring electrical properties.</p> <p>They realized that the differences between different programming languages are not that big. Having knowledge in Java makes it relatively easy to pick up the C-language.</p>
Photos or other relevant material	<p><i>Select 3-4 good-quality photos or other relevant material, such as announcement, workshop agenda, plans, screenshots, log-book or web-link, and attach them in this report</i></p>



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Programming Arduino



Arduino connected to breadboard



```
DigitalInputPullup | Arduino 1.6.13
Fil Redigera Skiss Verktyg Hjälp
DigitalInputPullup$
This example code is in the public domain
*/
void setup() {
  //configure pin2 as an input and enable the internal pull-up resistor
  pinMode(2, INPUT_PULLUP);
  pinMode(13, OUTPUT);
}
void loop() {
  //read the pushbutton value into a variable
  int sensorVal = digitalRead(2);
  // Keep in mind the pullup means the pushbutton's
  // logic is inverted. It goes HIGH when it's open,
  // and LOW when it's pressed. Turn on pin 13 when the
  // button's pressed, and off when it's not:
  {
    if (sensorVal == HIGH) {
      digitalWrite(13, LOW);
    } else {
      digitalWrite(13, HIGH);
    }
  }
}
```

First test program in editor