**IoT & Automation Lab.**

1. **Prototype? Open-Source and Closed-Source Prototype Platforms:**

A prototype is an early sample, model, or release of a product built to test a concept or process.

* Open-source: Open source is source code that is made freely available for possible modification and redistribution.

E.g. **Arduino, Raspberry Pi.**

* Closed**-source: Closed-source model source code is not released to the public, i.e. it is not available on the public domains.**

E**.g. Google Earth, Skype, WinRAR, Microsoft Windows, Mac OS**

1. **Arduino?**

Arduino is a small popular electronic machine that makes it very easy for people to make electronic things.

It has two parts:

* a Circuit Board
* a program that lets people tell the circuit board what to do.

1. **Arduino Uno R3 Key Specifications:**

* Main Processor
  + ATmega328P, a modified Harvard architecture 8-bit RISC\* processor core. \**Reduced Instruction Set Computer*
* Memory (SRAM, FLASH MEMORY, EEPROM)
  + **SRAM:** Static Random Access Memory a type of RAM which uses a flip-flop to store 1-bit of data.
    - * The system's temporary data or run-time data is stored in the SRAM; with a size of 2KB.
  + **FLASH MEMORY:** In Arduino, the Flash stores the application code to be run.
    - * The Size of Flash Memory is 32KB.
  + **EEPROM:** An Electrically Erasable Programmable Read-Only Memory. It is a form of non-volatile memory that can remember things with the power being turned off, or after resetting the Arduino.
    - * The Size of EEPROM is 1KB.
* I/O Pins
  + **An Arduino has 14 digital input/output pins (of which 6 can be used as PWM\* outputs), 6 analog inputs.**