**Using Arduino Microcontrollers as Inexpensive Dataloggers**

Dr. Eric Ayars, California State University Chico

The Arduino is an open-source microcontroller system based on the ATMega series of µ-controllers. It was designed by Massimo Banzi and others and released to the public in April 2005. The system is open-source, which means that anyone can use it for any purpose, including commercial purposes. The Arduino is a complete computer, with memory and other components, that can be programmed with simple software.

**What the Arduino is**

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- It was designed by Massimo Banzi and others and released to the public in April 2005.
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- The Arduino is a complete computer, with memory and other components, that can be programmed with simple software.

**What kind of data the Arduino can collect**

- The Arduino can collect digital data from up to 20 lines with sub-millisecond timing resolution.
- The built-in ADC (Analog-to-Digital Converter) can handle 10-bit A/D conversion with a resolution of 0.04 m/s/s.
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**What collection modes can be used**

- **Tethered** data collection: Using a USB cable, you can connect the Arduino to a computer via the computer's USB port, and transfer the measurements to the computer as serial data. This is useful when you need to access the measurements in real-time or when you need to store the data in a computer database.
- **Wireless** data collection: The Arduino can be connected to a computer via a wireless communication module, such as an XBee or ZigBee module. This is useful when you need to collect data from remote locations or when you need to store the data in a computer database.

**And while it's collecting that data...**

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**Remote collection & storage**

- Using wireless transceivers, you can communicate with the Arduino over a wireless connection.
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