Introduction to the Microcontroller

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What is a Microcontroller?

https://www.youtube.com/watch?v=FmSV4-WdDsA

http://avrlab.net/atmel-atmega128-datasheet-download
Brief History of the Microcontroller

- In 1971, the first microcontroller was invented by two engineers at Texas Instruments, according to the Smithsonian Institution.
  - Gary Boone and Michael Cochran created the TMS 1000, which was a 4-bit microcontroller with built-in ROM and RAM.
  - The same year that the microprocessor was invented at Intel
- The microcontroller was used internally at TI in its calculator products from 1972 until 1974, and was refined over the years.
- In 1974, TI offered the TMS 1000 for sale to the electronics industry. The TMS 1000 was available in various configurations of RAM and ROM sizes.

http://www.ehow.com/info_10018768_history-microcontroller.html
Brief History of the Microcontroller

- During the 1990s, microcontrollers with electrically erasable and programmable ROM (EEPROM) memories, such as flash memory, became available.
  - These microcontrollers could be programmed, erased and reprogrammed using only electrical signals.
  - Prior to the electrically reprogrammable devices, microcontrollers often required specialized programming and erasing hardware, which required that the device be removed from its circuit, slowing software development and making the effort more expensive.
  - With this limitation removed, microcontrollers were able to be programmed and reprogrammed while in a circuit so devices with microcontrollers could be upgraded with new software without having to be returned to the manufacturer. Many current microcontrollers, such as those available from Microchip and Atmel, incorporate flash memory technology.

http://www.ehow.com/info_10018768_history-microcontroller.html
Some Popular Microcontrollers

BS2

www.parallax.com

BX-24p

www.basicx.com

Arduino Atmega32u4

Teensy 3.2

http://pattonrobotics.com/products/teensy-3-2

www.radioshack.com
Basic Stamp II (BS2)

- $39.20 ea.
- PBASIC
- 20MHz
- 16 Digital I/O & 2 Serial
- Great Documentation and Online Resources for Teachers

https://www.parallax.com/product/bs2-ic
BOE-Bot
(Board of Education Robot)
Lab 6 – I/O Control

- Intro to using Programmable Inputs & Outputs
- What’s a Microcontroller Book
- Instructor will assign lab activities
Learn to Code!

ITEC 467 Mobile Robotics will certainly help you do this…

Also, consider taking some CSCI classes while you are here at MU.

Watch this!

- https://www.youtube.com/watch?v=UD2xoiCGTDo