

CSCI130 Lab 1

Name: Shuran Xu

Student ID: 501003499

```

Shurans-MacBook-Pro:helloEmbeddedWorld shuran$ make
----- begin -----
avr-gcc (GCC) 4.8.1
Copyright (C) 2013 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

Size before:
AVR Memory Usage
-----
Device: atmega328p

Program: 212 bytes (0.6% Full)
(.text + .data + .bootloader)

Data: 0 bytes (0.0% Full)
(.data + .bss + .noinit)

Compiling C: helloEmbeddedWorld.c
avr-gcc -c -mmcu=atmega328p -I. -gdwarf-2 -D_F_CPU=16000000UL -Os -funsigned-char -funsigned-bitfields -fpack-struct -fshort-enums -Wall -Wstrict-prototypes -Wextra -Wno-unused-parameter -Wno-format-security -std=gnu99 -Wundef -WMD -MP -MF .dep/helloEmbeddedWorld.o.d helloEmbeddedWorld.c -o helloEmbeddedWorld.o

Linking: helloEmbeddedWorld.elf
avr-gcc -mmcu=atmega328p -I. -gdwarf-2 -D_F_CPU=16000000UL -Os -funsigned-char -funsigned-bitfields -fpack-struct -fshort-enums -Wall -Wstrict-prototypes -Wextra -Wno-unused-parameter -Wno-format-security -std=gnu99 -Wundef -MP -MF .dep/helloEmbeddedWorld.o.d helloEmbeddedWorld.c -o helloEmbeddedWorld.elf -lm

Creating load file for Flash: helloEmbeddedWorld.hex
avr-objcopy -O ihex -R .eeprom helloEmbeddedWorld.elf helloEmbeddedWorld.hex

Creating load file for EEPROM: helloEmbeddedWorld.eep
avr-objcopy -j .eeprom --set-section-flags=.eeprom="alloc,load" \
--change-section-lma .eeprom=0 --no-change-warnings -O ihex helloEmbeddedWorld.elf helloEmbeddedWorld.eep || exit 0

Creating Extended Listing: helloEmbeddedWorld.lss
avr-obdump -h -S helloEmbeddedWorld.elf > helloEmbeddedWorld.lss

Creating Symbol Table: helloEmbeddedWorld.sym
avr-nm -n helloEmbeddedWorld.elf > helloEmbeddedWorld.sym

Size after:
AVR Memory Usage
-----
Device: atmega328p

Program: 212 bytes (0.6% Full)
(.text + .data + .bootloader)

Data: 0 bytes (0.0% Full)
(.data + .bss + .noinit)

----- end -----

```

```
Shurans-MacBook-Pro:helloEmbeddedWorld shurans$ make program -U flash:w:helloEmbeddedWorld.hex
avrduide -p atmega328p -P /dev/tty.usbmodem1461 -c arduino
avrduide: AVR device initialized and ready to accept instructions

Reading | ##### | 100% 0.00s
avrduide: Device signature = 0x1e950f
avrduide: NOTE: "Flash" memory has been specified, an erase cycle will be performed
        To disable this feature, specify the -D option.
avrduide: erasing chip
avrduide: reading input file "helloEmbeddedWorld.hex"
avrduide: input file helloEmbeddedWorld.hex auto detected as Intel Hex
avrduide: writing flash (212 bytes):

Writing | ##### | 100% 0.04s
avrduide: 212 bytes of flash written
avrduide: verifying flash memory against helloEmbeddedWorld.hex:
avrduide: load data flash data from input file helloEmbeddedWorld.hex:
avrduide: input file helloEmbeddedWorld.hex auto detected as Intel Hex
avrduide: input file helloEmbeddedWorld.hex contains 212 bytes
avrduide: reading on-chip flash data:

Reading | ##### | 100% 0.03s
avrduide: verifying ...
avrduide: 212 bytes of flash verified
avrduide: safemode: Fuses OK (H:00, E:00, L:00)

avrduide done. Thank you.
```