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**COMP 273 – Assignment 1**

**1.** In hardware, there is no type information stored in a byte. Type, like file extension, is purely for humans. Determining whether 8 random bits represent an integer or a character is therefore impossible.

**2.**

#include <string.h>

int main(){

char \*p = 52;

char address[5];

char loadCommand[20];

while ( \*p != ‘\0’ ) {

strcpy(loadCommand, “load register, ”);

\\ first convert address to string

sprintf(address, “%d”, p);

\\ then concatenate to make “load register, [address]”

strcat(loadCommand, address);

\\ call CPU commands

system(loadCommand);

system(“save register, 1”);

p++;

}

return 0;

}

**3. a.**

**b.**

**4.**  (**signed overflow:** the result of the 1st addition is negative) (2’s complement)

(**overflow:** 1 bit was lost)

**5.**

Number is odd: rightmost bit = 1

Number > 7: leftmost bit = 1

