ANSWER TO LAB 1

**Part 3**

1) The outputs are different for uchar1 and schar1 even though they have the same hex number is because uchar1 is unsigned and schar1 is signed. So when converting the hex value into a decimal value, the most significant bit for the signed will indicate it’s a negative, while the most significant bit for the unsigned will just represent a decimal number that is 2^n.

2) It compared the value after it is converted from hex and outputs the bigger value.

3) The sum is -3. This is what i expected. This is the value of the sums of the signed hex numbers of -1 and -2.

4) The sum is 509. This is the value of the converted hex added together.

5) The sum is 254. The value of 255 and -1 summed together.

**Part 4**

1. The size of a Boolean type is 1.

**Part 5**

1. When you shift left or right by 2 spaces, you get either 60 or 3
2. When you shift left 4 spaces you get 240. This happens because 15 in binary is 1111 and when you shift left 4 spaces, it becomes 11110000, which is 240.
3. When you shift 9 spaces, the value becomes 7680

**Part 6**

1. When you print the pointer values themselves, it outputs the address of the register the pointer is pointing to. The difference between ip and ip+1 is not 1 because each elements takes up 4 bytes of memory. So when you shift by 1, it goes to the next available address which is 4 more.

**Part 8**

1. The value after the last byte is 0. This means it’s the end of the string.
2. You get the next element in the ASCII table, which is IBM.
3. When you add 60 to the byte after the last character, it becomes 0+60 which is < in the asci table.