EE 308/MENG 483 – Homework 1


2. Convert your name to ASCII. For example, if your name is “Jane Smith”, the answer will be become:

<table>
<thead>
<tr>
<th>J</th>
<th>a</th>
<th>n</th>
<th>e</th>
<th>S</th>
<th>m</th>
<th>i</th>
<th>t</th>
<th>h</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x4A</td>
<td>0x61</td>
<td>0x6E</td>
<td>0x65</td>
<td>0x20</td>
<td>0x53</td>
<td>0x6D</td>
<td>0x69</td>
<td>0x74</td>
</tr>
</tbody>
</table>

3. Consider the following MC9S12 program:

; MC9S12 demo program

```
prog:    equ  $2000 ; Starting address from program
data:    equ  $1000 ; Starting address for data
org      prog ; Set initial program counter value

ldaa     input1 ; A = 
adda     input2 ; A = 
adda     input3 ; A = 
adda     input4 ; A = 
asra     ; A = 
asra     ; A =
staa     average ; ; A = 
swi

org      data ; Put data starting at this location
input1:  dc.b  $2C ; First number
input2:  dc.b  $3F ; Second number
input3:  dc.b  $42 ; Third number
input4:  dc.b  $35 ; Fourth number
average: ds.b  1 ; Reserve one byte for results
```

What is the value of Register A after each instruction of the program has executed? (e.g., after the instruction ldaa input1, Register A will have a 0x2C in it.) You do not need to consider the swi instruction.

4. What is the addressing mode for each of the following instructions:
   • ldaa input4
   • asra

5. What are the address of RAM in the MC9S12 which are available to you for your program and data?