**Casey Sobecks**

**ECE 362**

**Pre-Lab #6**

**Introduction:**

The purpose of this laboratory is to understand the usage and implementations of registers. Along with this, the application of stacks as a way to pass information to and from a subroutine will be taught. More specific to the microcontroller used, the HCS12’s method of banking memory and paging should be understood by the end of the laboratory.

**Lab 6.1:**

Objective/Purpose:

The purpose of this lab is to understand how stacks are manipulated by pushing and pulling values to and from registers.

Expected Results:

At the end of this program, the stack should be filled with the values from A,B,X, and Y. Along with this, the values should be the following: A=$44 B=$44 X=$3333 Y=$2211

Code:

Constants: Section

Ldaa #$11

Ldab #$22

Ldx #$3333

Ldy #$4444

JSR Subroutine

nop

Subroutine: psha

Pshb

Pshx

Pshy

Ldaa #0

Ldab #0

Ldx #0

Ldy #0

Puly

Pulx

Pulb

Pula

RTS

**Lab 6.2:**

Objective/Purpose:

The purpose of this lab is to use the call instruction to structure a stack. This will be used to pass parameters to and from the stack.

Expected Results:

This program should fill the stack with data and call the SendsChr function. Then it should check to see how far through the data the program is and return from the array when complete.

Code:

**Lab 6.3:**

Objective/Purpose:

The purpose of this lab is to use assembly language to read values from the potentiometer and relay them to the LCD screen on the provided board

Expected Results:

When the code is complete, a value between 1 and 100 corresponding to the potentiometer location should read out on the LCD screen

Code:

XDEF Entry

XREF \_\_SEG\_END\_SSTACK