CSE 410 - Computer Systems
Programming Project 1 Questions

Assigned: Wednesday, October 10, 2001
Due: Wednesday, October 17, 2001 before class
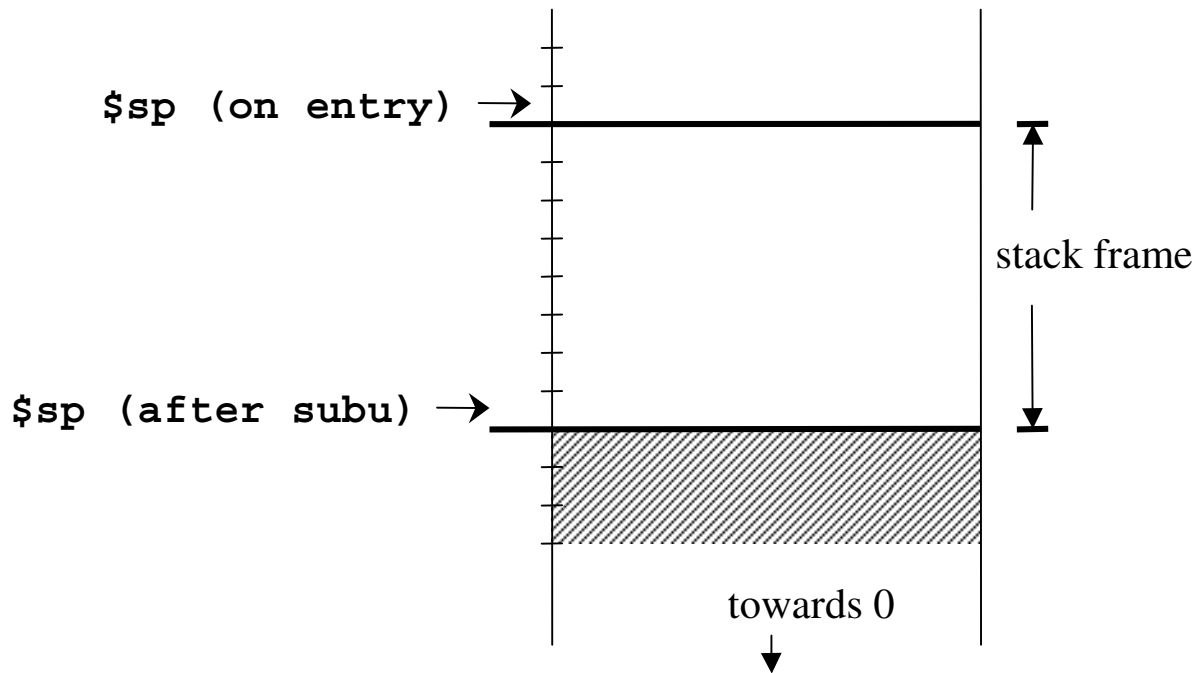
Your name: _____

Program: Adder

1. Did you implement the hex decode extension? If so, does it work correctly?

2. Consider your procedure decode_int. You used a variety of labels to identify specific points in the code. Starting with the beginning of the procedure (the decode_int label), write down each label you used, and then briefly state what condition causes the code to jump or branch to that label. I'm looking for short answers like "this label is the beginning of the loop that is executed for each character in the numeric string".

3. Consider the "main" method in the Adder program. The first instruction in the program is subu, followed by several sw instructions. Using the information you can get from those sw instructions, plus your knowledge of how the stack frame is defined, fill in the following drawing of the stack frame contents after the four sw instructions have executed. You need to write in the offsets for each word, and the contents or purpose of every word in the stack frame. Look at the drawing labeled "Layout of QuickSort stack frame" in the lecture of October 10 to see what information should be shown in the drawing.

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main:
   subu $sp,$sp,32
   ...
```

$sp (on entry) →

stack frame

$sp (after subu) →

towards 0

Program: Slicer

4. Did you implement the extension to specify the bit string on the command line? If so, does it work correctly?

5. Consider your procedure bitSlice3. You used a variety of labels to identify specific points in the code. Starting with the beginning of the procedure (the bitSlice3 label), write down each label you used, and then briefly state what condition causes the code to jump or branch to that label. Again, I'm looking for short answers like "this label is the beginning of the loop that is executed for each bit in the bit slice".

6. Consider your procedure bitSlice3. Which registers are changed when your procedure executes? Did you save and restore anything on the stack?