

## CS150 - Computer Organization Programming Assignment #3 - Fall 2009

Write a *trap* routine that inputs and echoes a string of characters from the keyboard until it finds a “carriage return” character (ASCII x0D). This is similar to the C/C++ function `gets()`:

- The routine should be invoked with a TRAP x40 instruction.
- The string of characters should be stored in the buffer pointed to by R0 (i.e., prior to invoking the routine, you should load R0 with the *address* of the character buffer).
- The routine should not store the carriage return character, but should append the NULL character to the end of the string.
- The routine should leave all registers, except R0 and R7, intact.

You can use the following code as a “skeleton” for your program. This code first sets up the trap vector (which would normally be performed by the operating system), loads R0 with the address of a buffer, and then calls the routine:

```
.ORIG x3000
    LEA    R0, MyTrapRoutine          ; Initialize Trap Vector
    STI    R0, MyTrapVector
    LEA    R0, MessageBuffer
    TRAP   x40
    PUTS
    HALT
MyTrapVector    .FILL x40
MyTrapRoutine
    . . . . .
MessageBuffer   .BLKW 80
```

To turn in your program, you should use the `checkin` program.