CompSci 210 Computer Systems 1 Mini-assignment 2

Write an Alpha assembly language program to read in a single line of up to 100 characters and print out the line in reverse order.

Due Date: 12 Noon, Monday, April 30, 2007

Write an Alpha assembly language program that performs the following tasks:

- The program prints out your name, UPI, student ID, then the text "CompSci 210 2007 Semester 2 Assignment 2". For example,

  ```
  James Goodman, jgoo052, ID xxxxxxx CompSci 210 2007 Semester 2
  Assignment 2
  ```

  (Change the name, UPI, and ID to your own).

- The program then prints a message requesting input.

- The program reads in the line of text and prints it out, character by character, in reverse order.

- The program then prints out the line of text in reverse word order, i.e., it prints words (letters separated by spaces) correctly, but prints the words in reverse order.

Sample Output

```
Please enter a single line of text (not more than 80
characters):

This is a short line of text!

!txet fo enil a si sihT

text! of line a is This
```

Requirements

- Download and set up the environment for running the Alpha simulator.

- Write an assembly language program for the Alpha to behave as described above. The program must be documented so that it is easy to understand.

- You may use only the following input and output commands:

  getchar (result is returned in $v0)

  ```
  bsr Sys.getChar.enter;
  ```

  putchar (character printed is in $a1)

  ```
  bsr Sys.putChar.enter;
  ```

- You may import only the following files:
```
IMPORT/callsys.h
IMPORT/proc.h
IMPORT/callsys.lib.s
```

You may not use any other I/O commands. That is, you may not use

```
bsr IO.print.enter;
```

or any other library functions for reading from the keyboard or writing to the display not included in callsys.lib.s.

Provided Source Code

Source code is provided in the CompSci 210 assignments web page. You download this code and untar/ungzip it. The directory created contains:

- Source code for the assembly language library and system code
- Template code for Alpha assembly language.

Marking

Must satisfy assignment requirements. Generally well written, and easy to understand. Documented by comments explaining high-level actions. Uses meaningful identifiers for variables and labels. Appropriate use of registers.
Your program will be tested against multiple scripts, all of which will provide reasonable input, i.e., only alphanumeric characters and no more than 100.

Submit

An Alpha program, A2.user.s, compatible with the project provided from the web.

Submit electronically using the assignment drop box.

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