California State University, Sacramento
College of Engineering and Computer Science

Computer Science 35: Introduction to Computer Architecture

CSC35.o Library 1.24 – x64 – Guide

How to Use

This library, but itself, is not a complete program. It must be linked into the object file that you will create during lab. For example, if you created the object file "`lab.o`", the following command will create a program called "`a.out`".

```
ld -o a.out csc35.o lab.o
```

Miscellaneous Subroutines

Subroutine	Input	Output	Notes
`ProgramEnd`	*none*	*none*	Terminates your program. You must call this subroutine at the end of your program.
`PrintRegisters`	*none*	*none*	Prints the contents of the register file to the screen.
`About`	*none*	*none*	Prints information about this library.

String Subroutines

Subroutine	Input	Output	Notes
`PrintStrZ`	`rcx`	*none*	Prints a null-terminated string located at the address stored in `rcx`.
`ScanStrZ`	`rcx`, `rdx`	*none*	Scans a null-terminated string and stores it into the address stored in `rcx`. The register `rdx` must contain the maximum number of characters that can be stored (size of the buffer).
`LengthStrZ`	`rcx`	`rcx`	Returns the length of a null-terminated string stored at address `rcx`. The result is returned in `rcx`.
`PrintChar`	`cl`	*none*	Prints the ASCII character stored in `cl`.
`ScanChar`	*none*	`cl`	Scans an ASCII character from the keyboard and stores the result in `cl`.

Integer Subroutines

Subroutine	Input	Output	Notes
`PrintInt64`	`rcx`	*none*	Prints a signed integer stored in `rcx` in decimal
`ScanInt64`	*none*	`rcx`	Scans a signed integer (in decimal) and stores it in `rcx`.
`PrintHex64`	`rcx`	*none*	Prints the integer, stored in `rcx`, to the screen in hex.
`PrintHexByte`	`cl`	*none*	Prints the byte, stored in `cl`, to the screen in hex.
`GetRandom`	`rcx`	`rcx`	Returns a random integer from `0` to `(rcx - 1)` into `rcx`.

VT100 Subroutines

When you connect to another computer, often the Telnet software emulates a VT100 terminal screen.

Subroutine	Input	Output	Notes
`ClearScreen`	*none*	*none*	Clears the screen and moves the cursor to the top-left corner.
`MoveCursor`	`rcx`, `rdx`	*none*	Moves the cursor to column `rcx` and row `rdx`. Indexing starts at 1 in the top-left corner.
`SetTextColor`	`rcx`	*none*	Sets the text to the color specified in `rcx`. Please see the table below.
`SetBackColor`	`rcx`	*none*	Sets the background to the color specified in `rcx`. Please see the table below.

VT100 Color Codes

Code	Color
`0`	Clack
`1`	Red
`2`	Green
`3`	Yellow

Code	Color
`4`	Clue
`5`	Magenta
`6`	Cyan
`7`	White