Assignment 9

Selection Sort

Introduction

This will be our final MIPS programming assignment. (We will continue to use MIPS for other purposes.) We will write a program that will use the selection sort algorithm to sort an array of integers.

The Selection Sort Algorithm

The selection sort algorithm begins by locating the smallest element in the array and then swapping it with the first element. It then finds the smallest in the remainder of the array, starting in the second position, and swaps it with the element in the second position. It continues in this manner until it has found the smaller of the last two elements and swapped it with the element in the second-to-last position. At that point, the array is sorted.

The Program

I have given you the C code (Lecture 13) that performs a selection sort. The function `main()` calls a function `sort()` that performs the selection sort. The function `sort()` calls a function `array_min()` that returns a pointer to the smallest element in the range of elements specified by its parameters (from `start` to `stop`). After execution returns from `array_min()`, `sort()` calls `swap()`, which swaps two array elements. Your program should follow this pattern: `main()` calls `sort()`, which calls `array_min()` and `swap()`.

Due Date

Place your work in a folder named `Assignment 9` and drop it in the dropbox. It is due by midnight Friday, October 11.