

CS 201 (David Gerhard): Introduction to Digital Systems





Dashboard ► CS 201 (David Gerhard) ► Assignments ► a6

a6

Submit to urcourses, in PDF, DOC(X), or text format. PDF is preferred. Be sure to follow all assignment expectations.

Question 1

The following are some additional pseudo-instructions that one could define for MIPS. in each case, supply an equivalent MIPS instruction or sequence of instructions with the desired effect. In partf, mulacc is short for multiply-accumulate. You can assume that the result of (reg1)x(reg2) will fit in a single register. Recall that pseudo-instructions should change no registers except the destination register (if applicable, or PC for branch/jump), but pseudo-instructions may make use of \$at for temporary results. BONUS: briefly describe the utility or usefulness of each pseudo-instruction

Question 2

Using the min-max code from the lab as a starting point, write and implement a MIPS program which performs a sort of an array, with the following considerations:

- The array is to be sorted by insertion sort, not selection sort. For details of the algorithm, see http://en.wikipedia.org/wiki/Insertion_sort;
- The array is to be stored in doublewords, not words;
- The array is to be sorted by absolute value (e.g. 1, -2, 3, -4, 5, -6...) but the values of the array elements themselves should not be changed; and
- Use at least one subroutine which makes use of a stack frame, including frame offsets for argument or return value access.

Bonus: provide a visual interface showing the progress of the search at each step.

UPDATE: doubleword and absolute value features are now considered bonuses rather than key requirements. You must still perform an insertion sort and you must still use a stack frame for your subroutine.

Assignment deliverables:

all files must have the indicated filenames (replace 200200000 with your student number):

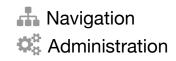
- 1. Assignment file named "A6_200200000.docx" or "A6_200200000.pdf" containing your complete solution for all questions, including screenshots of your compiled code and output (just like in the lab)
- 2. Code file A6Q20000.s (using the last four digits of your student number) for question 3

Submission status

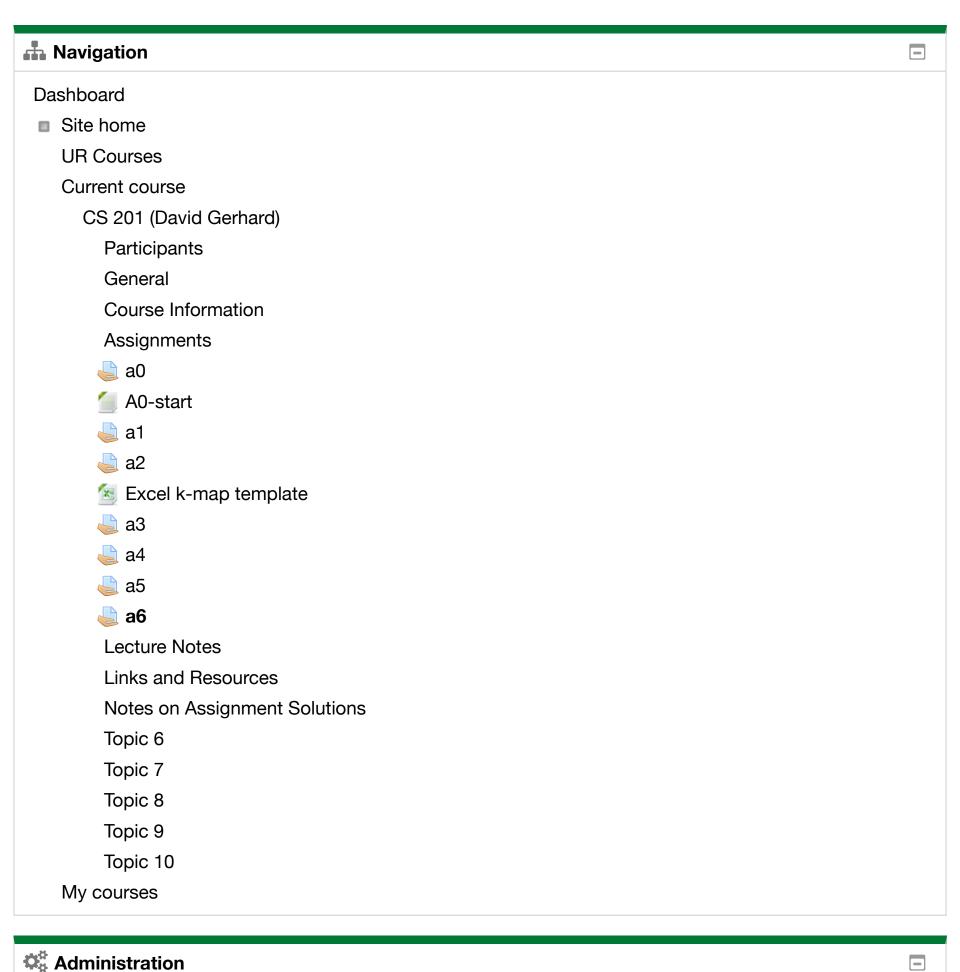
Submission status	Submitted for grading
Grading status	Graded
Due date	Friday, 2 December 2016, 11:55 PM
Time remaining	Assignment was submitted 5 hours 12 mins early
Last modified	Friday, 2 December 2016, 6:42 PM
File submissions	A6_200312488.pdf
	A6Q2_200312488.s
	A6Q2Screenshot_200312488.PNG
Submission comments	Comments (0)

Feedback

Grade	30.00 / 30.00
Graded on	Tuesday, 13 December 2016, 10:09 AM
Graded by	Zhi Cao



Course administration



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