[Exams] Past Exams 2016 and older Q&A

Discuss all questions pertaining to exams which took place in 2016 and older here.

You can find the past exams here: https://cs61c.org/resources/exams

When posting questions, you MUST reference the semester, exam, AND question so we can help you. Please put this at the beginning of your post in this format: [Year] {Semester}-{Exam}:Q{Question Number}
For example: [2016 SP-MT1]:Q1, or [2014 SU-F]:Q3

{Semester} is one of these: SP, SU, FA
{Exam} is one of these: Q, MT, MT1, MT2, F

If you follow this format, it will make it very easy to search for similar questions!

midterm_exam1  midterm_exam2  final_exam

~ An instructor (Jie Qiu) thinks this is a good note ~

followup discussions for lingering questions and comments

Resolved  Unresolved

[REDACTED] 4 months ago

[2015 FA-MT1]:Q2.1

Why is the order for the last three values c, &temp, and &b?

Consider the following C program:

```c
int a = 5;
void foo(){
    int temp;
}
int main()
{
    int b = 0;
    char* s1 = "cs61c";
    char s2[] = "cs61c";
    char* c = malloc(sizeof(char) * 100);
    foo();
    return 0;
};
```

1) Sort the following values from least to greatest: &b, c, b, &temp, &a.

\[ b < &a < c < &temp < &b \]
<table>
<thead>
<tr>
<th>Resolved</th>
<th>Unresolved</th>
</tr>
</thead>
</table>

**[REDACTED]** 1 month ago

In the RISC-V solutions of this question, they used addiu instead of addi in order to increment the stack pointer, but I remember for everything else we have done in this class, we have always used addi and never addiu. I was wondering why that is the case that addiu is typically never used for us, and perhaps why it was used in this question.

As well, when I searched on stack overflow about addi vs addiu, there was a response that said addi should never be used in practise, and it should always be addu or addiu. Can someone please explain what is going on here and why?

```plaintext
non_zero: 
  addiu sp, sp, -8
  sw so, 0(sp) 
  sw ra, 4(sp)  \{ Backup saved register & rot in case we are making a function call
  addi so, ao, 0  \#back up arr
```

<table>
<thead>
<tr>
<th>Daniel Fan</th>
<th>1 month ago</th>
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</thead>
<tbody>
<tr>
<td>I think addiu is MIPS while addi is RISC-V. So just use addi for everything in this semester.</td>
<td></td>
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