CA Lecture 7 Quiz

- Implement the following program in C and in RISC-V!
- We will not compile or run your code – you will be graded on understanding the concepts!
- Be sure to **SAVE** the PDF. Copy the code to another editor before closing the PDF. Close and open the PDF to see if the contents of the form were saved.
- Then submit on Gradescope: https://www.gradescope.com/courses/77872

```c
#include <libc.h>
int main(){

    unsigned int x10, x11, x12, x14;
    int x13;

    /* Implement RISC-V each of the lines 11, 14, 18 & 21 */
    /* Afterwards implement the bit count line 22 in C & RISC-V */

    /* Do NOT use li for this! */
    x10 = 7331;

    /* Do NOT use mul for this! */
    x11 = x10 >> 2;

    /* Do NOT use a branch for this! */
    /* Make sure it works for any x11! */
    x12 = x11 < 1900;

    /* Do NOT use 'sub' for this! */
    x13 = -x11;

    /* Count the number of 1's in the binary bit pattern of x13! */
    /* You may change x13. */
    /* Save the result in x14! */
    /* Implmenet in C and RISC-V! */


    /* Don't implement the printf */
    printf(" %d %d %d %d %d \n", x10, x11, x12, x13, x14);

    return 0;
}
```

Implement in C

```c
#include <libc.h>
int main(){

 unsigned int x10, x11, x12, x14;
 int x13;

 /* Implement RISC-V each of the lines 11, 14, 18 & 21 */
 /* Afterwards implement the bit count line 22 in C & RISC-V */

 /* Do NOT use li for this! */
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 /* Count the number of 1's in the binary bit pattern of x13! */
 /* You may change x13. */
 /* Save the result in x14! */
 /* Implmenet in C and RISC-V! */


   /* Don't implement the printf */
 printf(" %d %d %d %d %d \n", x10, x11, x12, x13, x14);

 return 0;
}
```

Implement in RISC-V

```
main:

 # Do NOT use li for this!
 # x10 = 7331;


 # Do NOT use mul for this!
 # x11 = x10 >> 2;


 # Do NOT use a branch for this!
 # Make sure it works for any x11!
 # x12 = x11 < 1900;


 # Do NOT use 'sub' for this!
 # x13 = -x11;


 # Count the number of 1's in the binary bit pattern of x13!
 # You may change x13.
 # Save the result in x14!
 # Implmenet in RISC-V!




   # Don't implement the printf

 # return 0;
```