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| **436F6F6CLogic Circuit Design Homework #05** | | | |
| Due date | Jun. 13th, 2024 | Instructor | Yoo, Younghwan |
| Student ID | 202355517 | Name | 권민규 |

1. Write the following strings using ASCII encoding. Write your final answers in hexadecimal.

1. Cool

43 6F 6F 6C

1. RISC-V

52 49 53 43 2D 56

1. boo!

62 6F 6F 21

2. Show how the strings in Problem 1 are stored in a byte-addressable memory starting at memory address 0x004F05BC. The first character of the string is stored at the lowest byte address (in this case, 0x004F05BC). Clearly, indicate the memory address of each byte.

Cool

0X4F05BC: 43

0X4F05BD: 6F

0X4F05BE: 6F

0X4F05BF: 6C

RISC-V

0X4F05BC: 52

0X4F05BD: 49

0X4F05BE 53

0X4F05BF: 43

0X4F05C1: 2D

0X4F05C2: 56

Boo!

0X4F05BC: 62

0X4F05BD: 6F

0X4F05BE: 6F

0X4F05BF: 21

3. Convert the following high-level code snippets into RISC-V assembly language. Assume that the (signed) integer variables g and h are in registers a0 and a1, respectively. Clearly comment your code.

if (g >= h)  
 g = g + h;  
else   
 g = g - h;

bge a0, a1, L1

add a0, a0, a1

j L2

L1:

sub a0, a0, a1

L2:

if (g < h)  
 h = h + 1;  
else  
 h = h \* 2;

blt a0, a1, L3

addi a1, a1, 1

j L4

L3:

slli a1, a1, 1

L4: