| DigiPen | CS | Vadim Surov | CS100A | Assignment #7 |

# Assembler - Basics

Demonstrate the ability to write basic assembly code.

Read carefully and check all rules you agree with:

- ☐ Each card has description which must be strictly followed.

- ☐ Keep the code properly formatted (correct indentation, line width is 40 characters max).

- ☐ Your code must represent your own individual work. If something is not clear, ask your instructor for help.

- ☐ Cheating of any kind (copying someone else's work, allowing others to copy your work, collaborating, etc.) will not be tolerated and will be dealt with SEVERELY.

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- Given 6 long values 1,2,3,4,5, and 6. Each 3 out of 6 values represents a vector in space.

- Write assembly code that calculates and outputs the dot product of the given vectors.

- Expected output is a number. Nothing else (no text, no new line \n).

- Try to use minimum number of registers in calculations.

`Run`

```
    .data
a:     .long   1
b:     .long   2
c:     .long   3
d:     .long   4
e:     .long   5
f:     .long   6

str: .asciz "%d"
    .text
    .global main

main:
    push  %rbx /* For alignment */

movq a, %rax
imulq d, %rax
movq b, %rbx
imulq e, %rbx
movq c, %rcx
imulq f, %rcx

addq %rax, %rbx
addq %rbx, %rcx

mov $str, %rdi
movq %rcx, %rsi

call printf

xor    %eax, %eax #return 0;
pop    %rbx
ret
```

```
32
```

### Survey

- What is approximate number of hours you spent implementing this assignment?

```
30mins
```

- Indicate the specific portions of the assignment that gave you the most trouble

```
Understanding the code
```

By signing this document you fully agree that all information provided therein is complete and true in all respects.

Responder sign: