

Introduction to Computer Engineering (E114)

Harris

Spring 1999

Problem Set 5

Due: Friday, March 5

1) Assembly to Machine Language

Convert the program on page 127 into machine language. Write your instructions in hex.

2) Machine to Assembly to a High Level Language

Convert the following program from machine language into assembly language. Then reverse engineer a C or Java program which would compile into this assembly language and write it. What does the program do?

```
20080004
21090000
200a0001
110a0009
010a4022
210b0000
200c0000
11600003
01896020
016a5822
1000ffffc
21890000
1000ffff6
```

3) Improved Loops

Do exercise 3.9 from Patterson & Hennessy.

4) Time

Please indicate how many hours you spent on this problem set. This will not affect your grade, but will be helpful for calibrating the workload for next semester's class.