17-363/17-663: Programming Language Pragmatics, In-Class Exercises November 22, 2022

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1. [Loop Optimizations]. Optimize the assembly code for the following loop, using one or more of the techniques discussed today:

```
// original source
for (int i = 0; i < n; i = i + 1)
    *(a + 4 + i*8) = i

// pseudo-assembly
     i := 0
loop: if i >= n goto done
     t := a + 4
     u := i * 8
     v := t + u
     *v = i
     i := i + 1
     goto loop
done:
```