

Recitation 10 Practice - Computer Organization, Fall 2013

Here are the steps you should take to do this practice:

1. Obtain a C program.
2. Compile the C program to assembly language on the elk computers. Log on to one of those machines and place the C program into your directory.

Compile the program to assembly language with the following command line:

```
gcc -S -o p0.S -O0 prog.c
```

The -O0 option tells the compiler to compile with optimization level zero, i.e., no optimizations. The -S option tells the compiler to compile to assembly language instead of to an executable program, and to place the assembly language in a file called p0.S.

3. Edit the assembly language, when it is possible.
4. Assemble and run the instrumented program with the following commands:

```
gcc -o prog-O0 p0.S  
./prog-O0
```

5. Repeat steps 2 through 4, using instead the following command line to compile the program and see the difference:

```
gcc -S -o p01.S -O1 prog.c  
gcc -S -o p02.S -O2 prog.c  
gcc -S -o p03.S -O3 prog.c
```