CS 164, Spring 2005   CS 164: Homework #6   **P. N. Hilfinger**

Due: Friday, 15 April 2005

General instructions about homework. Use the command 'submit hw6' to submit
your homework. We will not accept homework in any other form.

1. Consider the following C source file (there's a copy in ~cs164/hw/hw6/avg.c):

```
typedef struct SortedList SortedList;

struct SortedList {
   int datum;
   SortedList* next;
};

void averages (SortedList* L, int* mean, SortedList** median) {
   int n, sum;
   SortedList* med;

   med = L; sum = 0; n = 0;
   while (L != 0) {
     if (n & 1)
       med = med->next;
     sum += L->datum;
     n += 1;
     L = L->next;
   }
   *mean = sum/n;
   *median = med;
}
```

Compile this on one of the i86pc machines (sphere, rhombus, etc.) with

```
gcc -g -S avg.c
```

producing a file avg.s containing assembly language. Annotate this file with short com-
ments indicating clearly what each machine instruction is for (that is, how it is related to
the C program and what it is accomplishing). Assembler comments start with #. Turn in
the resulting file (avg.s).