CS270 Recitation 12
“File Input/Output”

Goals

To understand how file input/output works.

Background

In the lecture we had association of physical files with streams using fopen( ) and fclose( ). We have also seen fscanf( ) and fprintf( ).

A file is associated with a stream may be input stream or output stream (or both). The type of a stream is a "file pointer", declared as:

```
FILE *infile;
```

The FILE type is defined in <stdio.h>.

The fopen function associates a physical file with a stream.

```
FILE *fopen(char* name, char* mode);
```

First argument: name

The name of the physical file, or how to locate it on the storage device. This may be dependent on the underlying operating system.

Second argument: mode how the file will be used:

"r" -- read from the file
"w" -- write, starting at the beginning of the file
"a" -- write, starting at the end of the file (append)

Once a file is opened, it can be read or written using fscanf() and fprintf(), respectively. These are just like scanf() and printf(), except an additional argument specifies a file pointer. For example

```
fprintf(outfile, "The answer is %d\n", x);

fscanf(infile, "%s %d/%d/%d %lf", name, &bMonth, &bDay, &bYear, &gpa);
```

The Recitation:

Make a subdirectory called R12 for the recitation and copy the following files into the directory:
r12.c

Compile and run the program. Examine the snazzyjazz.txt file generated.

You will next add code to the program that will read from the file snazzyjazz.txt and print the variable on the standard output.

Complete the following code by filling the blanks and add it to the program.

```
  my_stream = fopen (my_filename, "r");


  if (fscanf (my_stream, "%f __________ %i", &f1, &f2, &i1, &i2) != ___) {
  fprintf(stderr, "can't read %s\n", my_filename);
  return 1;}
;

  /* Close stream*/
  if (fclose(my_stream) == EOF) {
  fprintf(stderr, "my_stream cannot be closed\n");
  return 1;}

  printf ("Float 1 = %f\n", f1);
  printf (_____________________);
  printf (______________________);
  printf ("Integer 2 = %d\n", i2)
```

Next modify the program to include a hexadecimal integer as the fifth variable with value 0xFF with would be written to snazzyjazz.txt, read from it, and printed to standard output.

Show the working program and the generated file to the TA.