#  Input-Output Homework

1. Write a section of code that attempts to open file foo.txt for input and, if the file does not exist, generates an error message and aborts the program.

FILE \*fp;

fp = fopen("foo.txt", "r");

if (fp == NULL) {

printf("File could not be opened.\n");

exit(1);

}

or even more concisely:

FILE \*fp;

if ((fp = fopen("foo.txt", "r")) == NULL) {

printf("File could not be opened.\n");

exit(1);

}

or even more concisely:

FILE \*fp;

if (!(fp = fopen("foo.txt", "r"))) {

printf("File could not be opened.\n");

exit(1);

}

or using the more secure fopen\_s():

if ((fopen\_s(&fp, "foo.txt", "r")) != 0) {

printf("File could not be opened.\n");

exit(1);

}

or even more concisely:

if ((fopen\_s(&fp, "foo.txt", "r"))) {

printf("File could not be opened.\n");

exit(1);

}

2. What could happen if you attempt to open a file for input and you do not check to see whether or not the file exists.

If the file does not exist, the program will crash.

3. Write a section of code that opens file diary.txt to add new data to the file without modifying the data that might already be in the file.

FILE \*fp;

fp = fopen("diary.txt", "a");

if (fp == NULL) {

printf("File could not be opened.\n");

exit(1);

}

4. What could happen if you fail to close a file properly using the fclose() function.

The contents of the file could disappear.

5. Assume that a data file, data.txt, contains the data for a checking account. Each line in the data file contains a character for deposit or check cashed ('D' or 'C'), and an amount that is represented as a double. Write a section of code that opens the data.txt input file, reads the data on each line in the file, and outputs the data to the terminal window.

char code;

double amount;

if (!(fp = fopen("data.txt", "r"))) {

printf("data.txt could not be opened for input.");

exit(1);

}

while (!feof(fp)) {

fscanf(fp, "%c %lf\n", &code, &amount);

printf("%c %10.2f\n", code, amount);

fclose(fp);

6. Repeat the previous exercise but this time output each line of data to a new output file, checking.txt.

char code;

double amount;

if (!(fp\_in = fopen("data.txt", "r"))) {

printf("data.txt could not be opened for input.");

exit(1);

}

if (!(fp\_out = fopen("checking.txt", "w"))) {

printf("checking.txt could not be opened for output.");

exit(1);

}

while (!feof(fp\_in)) {

fscanf(fp\_in, "%c %lf\n", &code, &amount);

fprintf(fp\_out, "%c %10.2f\n", code, amount);

fclose(fp\_in);

fclose(fp\_out);