Project: **p05**

Assignment: Program **p05** converts non-negative, decimal integers to a foreign base. Program **p05** reads a file containing pairs of integers. The first integer of the pair is a decimal value. The second integer is the foreign base. Decimal values may range from 0 to 2,147,483,647 and foreign bases may range from 2 to 36. Program **p05** converts the decimal value to the foreign base. Conversion results are printed in the output file. Program **p05** prompts the user for the names of the input file or the output file if they are not supplied on the command line. The section titled **Output File** contains sample output that corresponds to the input shown in the section labeled **Input File**.

Program Files: Project **5** consists of file **p05.cpp**.
File **p05.cpp** must be stored in the root directory of your student account. Failure to store project files in the root directory of your student account will result in a score of ***zero*** (***0***) for this project.

Command Line: Project **p05** can be invoked with zero, one, or two program parameters. The first program parameter is the input file name. The second parameter is the output file name. Sample command lines together with corresponding actions by program **p05** are shown below. Boldfaced type indicates data entered at the keyboard by the user.

$ **p05**
Enter the input file name: **i05.dat**
Enter the output file name: **o05.dat**

$ **p05 i05.dat**
Enter the output file name: **o05.dat**

$ **p05 i05.dat o05.dat**

Input File: The input file consists of pairs of integers separated by white space. The first integer is the decimal value to be converted. The second integer is the foreign base. Refer to Figure 1.

Ouput File: The output file consists of lines, one line for each pair of integers in the input file. The first integer is printed without alteration followed by the text "base 10 equals *x* base ", followed by the second integer. Every line is terminated with a period. *x* is the decimal value converted to the foreign base. Refer to Figure 2.

```
4095 16
11181 16
-1 4
32 1
32 2
```

Figure 1. Input file format (File **i05.dat**)

```
4095 base 10 equals fff base 16.
11181 base 10 equals 2bad base 16.
-1 is outside the range of valid decimal values.
1 is outside the range of valid foreign bases.
32 base 10 equals 100000 base 2.
```

Figure 2. Output file format (File **o05.dat**)