Assignment: Create three sets from lists of integers found in files **i061.dat**, **i062.dat**, and **i063.dat**. Find set I the intersection of set 1 and set 2. Find set U the union of set 2 and set 3. Find set D the difference of set U - set I. Print results in file **o06.dat** as shown in Figure 2.

Prohibition: Use of the C++ Standard Template Library is prohibited in the implementation of this project.

Program Files: Project **6** consists of files **p06.cpp**, **List06.h**, **Set06.h**, and **p06make**. Project file names are exactly as given. Failure to employ the foregoing names will result in a score of ***zero*** (***0***) for this project

Project files 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.

File	Description
p06.cpp	File **p06.cpp** contains functions that process command line arguments and direct set operations. Implement the finding of the union, intersection, and difference as arithmetic expression rather than calling member functions.
List06.h	File **List06.h** contains all that is required for **template <class** *T***> class** *List* **{ … };** Class *List* implements a list of integers by dynamically allocating individual elements of a list. Each element contains an element of type *T*. Elements are placed in a doubly linked circular list with a sentinel after the element containing the largest value. Elements are stored in ascending order. Elements are dynamically allocated when needed and discarded after they are no longer required. Elements of the list are unique. Class *List* is the base class.
Set06.h	File **Set06.h** contains all that is required for **template <class** *T***> class** *Set* **: public** *List* **{ … };**. Class *Set* is derived from class *List*. Set operations include insertion, deletion, union, intersection, and difference, and printing.
p06make	File **p06make** contains instructions for creating executable file **p06**. Instructions in file **p06make** are accepted by the UNIX utility ***make*****.**

Command Line: Project **6** can be invoked with up to four program parameters. The first three program parameters are the names of the input files containing sets 1, 2 and 3. The fourth program parameter in the name of the output file where results are recorded. Sample command lines together with corresponding actions by program **p06** are shown below. Boldfaced type indicates data entered at the keyboard by the user.

$ **p06**
Enter the name of input file 1: **i061.dat**
Enter the name of input file 2: **i062.dat**
Enter the name of input file 3: **i063.dat**

Enter the output file name: **o06.dat**

$ **p06 i061.dat**
Enter the name of input file 2: **i062.dat**
Enter the name of input file 3: **i063.dat**
Enter the output file name: **o06.dat**

$ **p06 i061.dat i062.dat**
Enter the name of input file 3: **i063.dat**
Enter the output file name: **o06.dat**

$ **p06 i061.dat i062.dat i063.dat**
Enter the output file name: **o06.dat**

$ **p06 i061.dat i062.dat i063.dat o06.dat**

Input files: Input files contain a list of integers. Unique integers in the list are the elements of a set. Sample data is given in below.

Input file 1: 1 2 3 4

Input file 2: 2 4 6 8

Input file 3: 1 3 5 7

Output files: The format of the output file is shown in Figure 2. Data shown in Figure 2 is produced by Program **p06** given input files shown above.

Figure 2.
Output file format:

set 1={1,2,3,4}
set 2={2,4,6,8}
set 3={1,3,5,7}
set I={2,4}
set U={1,2,3,4,5,6,7,8}
set D={1,3,5,6,7,8}