

CS23021 Computer Science I

Project #4

Due by 11:59pm on Wednesday, December 10, 2008

In this project you are to provide the implementation and usage for a `Set` class. I have provided a header file, `set.h`, which contains the definition of this class. You need to provide the implementation of the member functions declared in this class definition. Place your implementation in `set.cpp`. You can add other methods and attributes to the class definition if necessary. You also need to develop a program that uses the class. Place this program in a file named `useset.cpp`. The program should ask the user to input the members of the first set, then the members of the second set, then the operation to be carried out and then print the results and exit. You can assume that the set members are natural numbers (positive integers). There are no more than `MAX_SETSIZE` (this is a constant defined in `set.h`) members in the set. Input zero signifies the end of the set. Zero itself is not part of the set. The user may input the same number multiple times. However, set members should be all distinct, so do include duplicate numbers in a set. You do not have to either keep the set members sorted or output them in order.

An example dialogue is as follows. User input is in **bold**

```
input set A:  2 3 4 5 6 25 4 4 0
```

```
input set B: 55 6 4 44 2 4 0
```

```
available operations
```

```
1. intersection
```

```
2. union
```

```
3. complement
```

```
choose operation : 1
```

```
set A: 2 3 4 5 6 25
```

```
set B: 55 6 4 44 2
```

```
intersection of sets A and B: 4 6 2
```

Submit the files in the subversion repository in subdirectory `Project4`. The files needed for submission are: `set.h`, `set.cpp` and `useset.cpp`