

Homework 1

COMP 2213 - Data Structures II

September 21, 2022

Set theory is one of the basic mathematical concepts used widely. Intersection, union, and difference are the fundamentals of this theory. As a very immature definition, a set is a bunch of elements in which the same element cannot consist multiple times. Let's consider we have two sets named S_1 and S_2 . The intersection of the S_1 and S_2 ($S_1 \cap S_2$) means the elements which consist in both S_1 and S_2 . The union of the S_1 and S_2 ($S_1 \cup S_2$) means the elements which consist of S_1 or S_2 . The difference between the S_1 and S_2 ($S_1 - S_2$) means the elements which consist of S_1 but not S_2 .

In this homework, we have two txt files which consist of movies. You are expected to fill in the functions which are indicated with comment lines. Write the results into txt files.

- Use the given template C code.
- You can check the uniqueness of the movie by looking the film_id of the movie.
- There are three functions to be filled in the template code. Do not change the structure of the functions.
- You can define additional helper functions.
- Write the result into other txt files. Do not change existing files.
- Hint: There will be 1000 records for union, 200 records for transaction, and 400 records for difference. But try to design the algorithms generically. The code should be run correctly with different number of records.
- Cheating and code sharing will not be tolerated.