

## Requirement

Use Java 21 for this project. Download **LinHashMap.java**, **BpTreeMap.java**, and **FileList.java**. These are only partially implemented, so you need to finish the implementations. Redo Project 1 and use Indexing (LinHashMap and BpTreeMap) to speed up the RA operators. Also, now duplicates should be eliminated as indexing makes it efficient to do so.

**Note 1:** You need to implement **all methods** that have "TO BE IMPLEMENTED".

**Note 2:** You need to modify your code from Project 1 to use indexing in the 5 RA operators.

**Note 3:** You need to eliminate duplicate columns.

**Note 4:** You will receive 10 bonus points if you complete the implementation of **FileList.java**.

## Submission instruction

Create a subdirectory called **store** containing the data file for the relations. Also, create the **report.txt** containing the name of all members of the team and stating what each programmer did and how well they did it. Put **report.txt**, **store**, and all **.java** files in a directory **Project2\_LastNameofTheManager** and zip this directory and submit the **.zip** file on ELC. Submission should be made **Only** by the group's manager.

## Grading

- Efficient implementation of the methods in **LinHashMap.java**. (20 points)
- Efficient implementation of the methods in **BpTreeMap.java**. (20 points)
- Efficient implementation of the methods in **Table.java**. (40 points)
- Creation of **report.txt** and balanced programming effort. (10 points)
- Correct data in **store** subdirectory. (5 points)
- All classes and methods must be fully documented. (5 points)

## Late submission

- 10 points will be deducted per day late.

-Good Luck-