**Project 3 - Report**

This project implements LinHashMap, and uses TreeMap and HashMap in order to accelerate the process of Select and Join from earlier project. It is done in the provided project package and previous project’s selective class files using Java.

* Implemented LinHashMap functionality as taught by Dr.Arpinar in class LinHashMap (Used methods – entrySet(), split() )
* Created a new class called PerformanceEval to implement performance evaluation methodologies in order to track performance and generate a graph using method start() which is using **javafx** package.
* To evaluate each SQL operation, we are timing it with System.currentTimeMillis(), before and after each operation and getting the difference of end – start.
* All of the data for each type of index on Select and Join operation’s output is stored in performance.txt in the format SELECT(time in milli): Join(time in milli) for 100, 1000, 10000, 25000, 50000 tuples.
* PerformanceEval class operates on following configuration **chartDisplay** variable. If chartDisplay=”None” performance is evaluated based on mapType variable and if it is Select or Join then the chart is generated for the same. So run performanceEval.java in the following manner,
  + - 1. mType= NO\_MAP / TREE\_MAP/ LINHASH\_MAP/ HASH\_MAP with chartDisplay=”None”
      2. With chartDisplay=”Select/Join” generate the performance chart respectively.
* The queries executed for performance evaluation are,

1. SELECT \* FROM Students WHERE id = 'Random\_ID';
2. SELECT \* FROM Students JOIN Transcript WHERE Students.id = Transcript.StudId;

* Output charts are named as JOIN.png and SELECT.png