CSC 173 Project 4 Write-Up

This project gave us experience building on own database system using databases and relational algebra based on implementation described in the textbook.

How to Run: gcc –o main main.c

Part 1:

The insert function finds the hashtable key and finds the corresponding value. Then if its not already in the hashtable, it inserts it into the HT.

The delete function finds the hashtable value from X specification given, then it hashes to find the proper bucket, and runs down the list for this bucket, deleting each tuple that matches the specification X.

The lookup function find the hashtable value from X specification and hashes that value to find the proper bucket, and runs down the list for that bucket, producing as an answer each tuple on the list that matches the specification X.

Part 2:

For the first function: “What grade did *StudentName* get in *Course- Name*?” , it first finds the student’s studentID, buy indexing in the CSG relation using the course given, then using that now known SID, it finds the grade that corresponds to that tuple.

For the second function: “Where is *StudentName* at *Time* on *Day*?” , it first uses the name given to find the students SID, then indexes into the CSG relation to find the course, finally it uses the CDH relation to find the time and day for that course for that student.

Part 3:

I simply followed the textbooks implementation as follows...

Selection: it searches for the tuples meeting certain conditions in the current database.

Projection: Take each tuple t in R, and extract its components in attributes B, then add the tuple, to the relation.

Join simply combines two relations into one.