Design Paper

The purpose of this project is to develop a Database Management System( DBMS) and use it in a real life application. A DBMS is a program that organizes data based on a similar trait. These traits can be a sport’s team, or a company’s list of employees. The DBMS can also manipulate this data: it can search for elements, add new members to a trait, or even create a new trait. A user need only to input a command based on their needs and the DBMS will execute them, provided they are legal commands. These commands are read by a program in the DBMS known as the parser, which evaluates them and, if the syntax of the commands match the parsers syntax, it will execute the command; otherwise it will display either display an error or nothing, depending on how the parser is programmed.

The project is divided into two sections: phase I and phase II. Phase I will focus on the construction of the engine and parser of the DBMS. Phase II goal is to apply the DBMS constructed in phase I into a real life application. Developing of this project will provide understanding of the concepts of organizing and managing data as well as user input.

The DBMS engine is made up of four classes. The class that serves as the basic building block is the class Entry. This class will take user input and save it accordingly: if the input is a number it will store it as an integer, but if it’s a string it will store it as such. The second class is Row and it contains a vector of Entries. This is because a Row can have as many entries as the user inputs in a row. The third class is Table. Table contains a vector of Rows, since a Table is made of multiple rows. Note that one may create a table containing no rows. Our last class is Database, which contains a vector of Tables and which our parser will be communicating with.

//Parser stuff goes here

// Phase II How we will apply it.