* **Database** ()
  + APIs:
    - **transact** (String line)
      * parses the line then checks if there is an error, if not runs the first command
      * *Parameters*:
        + LINE: String user inputs to store in database
      * *Changes*:
      * *Returns*: error if line is invalid, else respective command
* **Table** (String name)
  + Manages information in the table
  + Initializes each table with:
    - name: (initialized to param name) labels the table as name
    - numRow: (initialized to 0)
    - numCol: (initialized to 0)
    - cols: new
    - rows:
  + APIs:
    - **insertRow** (T[] row, String rowName)
      * *Parameters*:
      * *Changes*:
      * *Returns*:
    - **insertCol** (T[] col, String colName)
      * *Parameters*:
      * *Changes*:
      * *Returns*:
* **Row** (String rowName)
  + APIs:
    - ()
      * Parameters:
      * Changes:
      * Returns:
* **Column<T>** (String colName)
  + APIs:
    - ()
      * Parameters:
      * Changes:
      * Returns:
* **Command** ()
  + APIs:
    - **createTable** (String TBLNAME, Hashtable COL2TYPE)
      * *Command*:
        + create table <table name> (<col0Name> <type0>, <col1Name> <type1>, …)

create a table with the given name

the names and types of the columns of the new table are supplied in a parenthesized list, in order; this defines the column order for this table

* + - * + create table <table name> as <select clause>

create a table with the given name

the columns, content and types of columns of the table are those of the intermediate table created by the result of executing the select clause

* + - * *Parameters*:
        + TBLNAME: name of the table to be created
        + COL2TYPE: collection of column names to their types
      * *Errors*: create a table with no columns -or- create a table that already exists
      * *Returns*: empty String on success, or an appropriate error message otherwise
    - **load** (String TBLNAME)
      * *Command*:
        + load TBLNAME

load the table stored in the file TBLNAME.tbl into memory, giving it the name TBLNAME

the row order of the table is defined as the order in which the rows are listed in the tbl file

if a table with the same name already exists, it should be replaced

* + - * *Parameters*:
        + TBLNAME: name of the table to be loaded
      * *Errors*: the relevant table file is an invalid table
      * *Returns*: empty String on success, or an appropriate error message otherwise
    - **store** (String TBLNAME)
      * *Command*:
        + store TBLNAME

write the contents of a database table to the file TBLNAME.tbl

if the tbl file already exists, it should be overwritten

* + - * *Parameters*:
        + TBLNAME: name of the table to be stored
      * *Errors*: N/A
      * *Returns*: empty String on success, or an appropriate error message otherwise
    - **dropTable** (String TBLNAME)
      * *Command*:
        + drop table TBLNAME

delete the table from the database

* + - * *Parameters*:
        + TBLNAME: name of the table to be deleted
      * *Errors*: table name does not exist
      * *Returns*: empty String on success or an appropriate error message otherwise
    - **insertInto** (String TBLNAME, Object[] NEWROW)
      * *Command*:
        + insert into TBLNAME values <literal0>, <literal1>,…

insert the given row (the list of literals) to the named table

the table must already be in the DB and the provided values must match the columns of that table

the given row is appended to the table, becoming the last row in its row order

* + - * *Parameters*:
        + TBLNAME: name of table to be inserted into
        + NEWROW: row that is added to the bottom of the table
      * *Errors*: insert a row that does not match the given table’s column type
      * *Returns*: empty String on success, or an appropriate error message otherwise
    - **print** (String TBLNAME)
      * *Command*:
        + print TBLNAME
      * *Parameters*:
        + TBLNAME: name of table to be printed
      * *Errors*: table TBLNAME does not exist
      * *Returns*: String representation of the table, or an appropriate error message otherwise
    - **select** (String[] TBLNAMES, String[] COLUMNS, String[] CONDS)
      * *Command*:
        + select <column expr0>,<column expr1>, … from <tbl0>,<tbl1>, … where <cond0> and <cond1> and …
      * *Parameters*:
        + TBLNAMES:
        + COLUMNS:
        + CONDS:
      * *Errors:* any type of invalid syntax
      * *Returns*: new table that has been formed from the join of the given table(s), filtered by the conditional statement(s), and selected from with the column expression(s)