

ToyDB Combined DDL and DML Syntax Specification

Dowland Aiello

11/24/23

Contents

1	Grammar	1
1.1	Expressions	1
1.2	Atom	1
1.3	Number	1
1.4	Symbol	2
1.5	String	2
1.6	List	2
2	Semantics	2
2.1	create_database	2
2.2	create_table	2
2.3	insert_into_table	2

1 Grammar

1.1 Expressions

`expression ::= list | atom`

1.2 Atom

`atom ::= number | symbol | string`

1.3 Number

`number ::= [+]?['0'-'9']+`

1.4 Symbol

```
symbol ::= ['A'-'Z']['A'-'Z''0'-'9'].*
```

1.5 String

```
string ::= '''['A'-'Z''0'-'9'].*'''
```

1.6 List

```
list ::= '(', expression*, ')'
```

2 Semantics

Several built-in symbols carry unique significance. These symbols represent built-in functions that are meant to be called first in list-position. These include:

2.1 create_database

Instruction creating a database, expects a string argument representing the name of the database.

2.2 create_table

Instruction creating a table in a database, expects a string argument representing the name of the database, a string argument representing the name of the table, a list of strings representing the names of the columns in the database, and a list of symbols representing the names of the types of each column in the database.

2.3 insert_into_table

Instruction inserting values into a table in a database, expects a string argument representing the name of the database, a string argument representing the name of the table, a list of strings representing the columns to insert values into, and a list of numbers or strings representing the values to insert into the columns