

DBMS PROJECT

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(1) CREATE DATABASE <database-name>;

(a) <database-name> \in [a-zA-Z_] [a-zA-Z0-9_]*

```
Database db = new Database("<database-name>");
db.create();
```

(2) USE <database-name>;

```
db.open("<database-name>");
```

(3) CREATE TABLE <table-name> (<column-name> <data-type>, ...);

(a) <table-name> \in [a-zA-Z_] [a-zA-Z0-9_]*

(b) <column-name> \in [a-zA-Z_] [a-zA-Z0-9_]*

(c) <data-type> \in {int, string, float}

```
db.create_table(
    "<table-name>",
    {
        "<column-name>" : "<data-type>",
        ...
    });
```

(4) <data-item>

(a) if corresponding <data-type> is **int**:

<data-item> \in [+|-]*[0-9]*

(b) if corresponding <data-type> is **float**:

<data-item> \in [+|-]*[0-9]*.[0-9]*

(c) if corresponding <data-type> is **string**:

<data-item> \in '.*'

(5) INSERT INTO <table-name> VALUES (<data-item>, ...);

NOTE: For **all** columns in (3) there must be a corresponding <data-item>.

```
db.insert(
    "<table-name>",
    ["<data-item>", ... ]);
```

(6) <where-clause> \in { WHERE <column-name> = <data-item> }

(7) SELECT * FROM <table-name>;

```
db.select("<table-name>");
```

(8) SELECT * FROM <table-name> <where-clause>;

```
db.select(
    "<table-name>",
    "<column-name>",
    "<data-item>");
```

(9) SELECT <column-name>, ... FROM <table-name>;

```
db.select(
    "<table-name>",
    ["<column-name>", ...]);
```

(10) SELECT <column-name>, ... FROM <table-name> <where-clause>;

```
db.select(
    "<table-name>",
    "<where-column-name>",
    "<where-data-item>",
    ["<column-name>", ...]);
```

(11) UPDATE <table-name> SET <column-name> = <data-item> <where-clause>;

NOTE: <data-item> should match corresponding <data-type> associated with <column-name>.

```
db.update(
    "<table-name>",
    "<column-name>",
    "<data-item>",
    "<where-column-name>",
    "<where-data-item>");
```

(12) DELETE FROM <table-name>;

```
db.delete("<table-name>");
```

(13) DELETE FROM <table-name> <where-clause>;

```
db.delete(  
    "<table-name>",  
    "<column-name>",  
    "<data-item>");
```

(14) DROP TABLE <table-name>;

```
db.drop_table("<table-name>");
```

(15) DROP DATABASE <database-name>;

```
db.drop();
```

(16) START TRANSACTION;

```
db.start();
```

(17) COMMIT TRANSACTION;

```
db.commit();
```

(18) ROLLBACK TRANSACTION;

```
db.rollback();
```

(19) EXIT;

```
db.close();
```