

# Database Commands Documentation

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## 1 Introduction

This document provides documentation for the commands available in the Database class.

## 2 Commands

### 2.1 createTable

**Description:** Creates a new table in the database.

**Parameters:**

- **tableName:** The name of the table to create.
- **columns:** The columns of the table.

**Usage:**

```
db.createTable("students", {"id", "name", "age"});
```

### 2.2 insertInto

**Description:** Inserts data into a table in the database.

**Parameters:**

- **tableName:** The name of the table to insert data into.
- **values:** The values to insert into the table.

**Usage:**

```
db.insertInto("students", {"1", "John", "25"});
```

## 2.3 selectFrom

**Description:** Selects data from a table in the database.

**Parameters:**

- **tableName:** The name of the table to select data from.

**Usage:**

```
db.selectFrom("students");
```

## 2.4 deleteFrom

**Description:** Deletes data from a table in the database based on a condition.

**Parameters:**

- **tableName:** The name of the table to delete data from.
- **condition:** The condition to apply for deleting rows.

**Usage:**

```
// Example: Delete rows where age is less than 18
```

```
db.deleteFrom("students", [](const std::string& age) { return std::stoi(age) < 18 });
```

## 2.5 update

**Description:** Updates data in a table in the database based on a condition.

**Parameters:**

- **tableName:** The name of the table to update data in.
- **columnToUpdate:** The column to update.
- **newValue:** The new value to set for the specified column.
- **condition:** The condition to apply for updating rows.

**Usage:**

```
// Example: Update age to 30 for rows where name is "John"
```

```
db.update("students", "age", "30", [](const std::string& name) { return name == "John" });
```

## 2.6 alterTableAddColumn

**Description:** Adds a new column to a table in the database.

**Parameters:**

- **tableName:** The name of the table to add a column to.
- **newColumnName:** The name of the new column to add.

**Usage:**

```
db.alterTableAddColumn("students", "favorite_color");
```

## 2.7 dropTable

**Description:** Drops a table from the database.

**Parameters:**

- **tableName:** The name of the table to drop.

**Usage:**

```
db.dropTable("students");
```

## 2.8 createIndex

**Description:** Creates an index on a column of a table in the database.

**Parameters:**

- **indexName:** The name of the index to create.
- **tableName:** The name of the table to create the index on.
- **columnName:** The name of the column to create the index on.

**Usage:**

```
db.createIndex("age_index", "students", "age");
```

## 2.9 dropIndex

**Description:** Drops an index from the database.

**Parameters:**

- **indexName:** The name of the index to drop.

**Usage:**

```
db.dropIndex("age_index");
```

## 2.10 createView

**Description:** Creates a view in the database.

**Parameters:**

- **viewName:** The name of the view to create.
- **query:** The SQL query defining the view.

**Usage:**

```
db.createView("student_view", "SELECT * FROM students WHERE age > 25");
```

## 2.11 dropView

**Description:** Drops a view from the database.

**Parameters:**

- **viewName:** The name of the view to drop.

**Usage:**

```
db.dropView("student_view");
```

## 2.12 insertIntoSelect

**Description:** Inserts data into a table from the result of a SELECT query.

**Parameters:**

- **tableName:** The name of the table to insert data into.
- **columns:** The columns of the table.
- **selectQuery:** The SQL SELECT query to execute.

**Usage:**

```
// Example: Insert data into students table from another table using a select
db.insertIntoSelect("students", {"id", "name", "age"}, "SELECT * FROM other_t
```

## 2.13 truncateTable

**Description:** Truncates a table in the database (removes all data).

**Parameters:**

- **tableName:** The name of the table to truncate.

**Usage:**

```
db.truncateTable("students");
```

## 2.14 printTable

**Description:** Prints the contents of a table in the database.

**Parameters:**

- **tableName:** The name of the table to print.

**Usage:**

```
db.printTable("students");
```