

OctopusDB Tutorial

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Start using octopusdb

```
bash octopus.sh
```

```
Welcome to the OctopusDB monitor.  
(1) CreateDatabase  
(2) OpenDatabase  
(3) DropDatabase  
(4) ListDatabases  
(5) ExitProgram  
(6) Manual  
octopusDB [(none)] >
```

Creating a new database

Database name: Must contain only letters or an alphanumeric string.

```
Welcome to the OctopusDB monitor.
```

```
(1) CreateDatabase  
(2) OpenDatabase  
(3) DropDatabase  
(4) ListDatabases  
(5) ExitProgram  
(6) Manual
```

```
octopusDB [(none)] >1
```

```
Database name : ITI
```

```
Query Ok.
```

```
Press any key to continue ..
```

```
octopusDB [(none)] >1
```

```
Database name : iti1
```

```
Query Ok.
```

```
Press any key to continue ..
```

```
octopusDB [(none)] >1
```

```
Database name : iti-1
```

```
ERROR: You have an error in your syntax, check the manual for the right syntax.
```

```
Press any key to continue ..
```

```
octopusDB [(none)] >1
```

```
Database name : 4985875
```

```
ERROR: You have an error in your syntax, check the manual for the right syntax.
```

```
Press any key to continue ..
```

```
octopusDB [(none)] >1
```

```
Database name : iti 1
```

```
ERROR: You have an error in your syntax, check the manual for the right syntax.
```

```
Press any key to continue ..
```

Deleting a Database

Database name: Must be an existing database.

```
Welcome to the OctopusDB monitor.
```

```
(1) CreateDatabase
```

```
(2) OpenDatabase
```

```
(3) DropDatabase
```

```
(4) ListDatabases
```

```
(5) ExitProgram
```

```
(6) Manual
```

```
octopusDB [(none)] >3
```

```
Database name : iti1
```

```
Query Ok.
```

```
Press any key to continue ..
```

```
octopusDB [(none)] >3
```

```
Database name : students
```

```
ERROR: Can't drop database 'students'.Database doesn't exist.
```

```
Press any key to continue ..
```

List Databases

```
Welcome to the OctopusDB monitor.
```

```
(1) CreateDatabase
```

```
(2) OpenDatabase
```

```
(3) DropDatabase
```

```
(4) ListDatabases
```

```
(5) ExitProgram
```

```
(6) Manual
```

```
octopusDB [(none)] >4
```

```
+-----+
```

```
| Databases |
```

```
+-----+
```

```
| supermarket |
```

```
| Students |
```

```
| newDB |
```

```
| ITI |
```

```
+-----+
```

```
Press any key to continue ..
```

Opening User Manual

```
(2) OpenDatabase
(3) DropDatabase
(4) ListDatabases
(5) ExitProgram
(6) Manual
octopusDB [(none)] >6
```

User Guide on Options:

+CreateDatabase-Creates a new data base.

|Arguments:

| -Database Name: Name can't contain any characters or spaces and can't be all numbers.

|
+UseDatabase-Opens an existing database to manage tables inside it.

|Arguments:

| -Database Name: Should be an existing database.

|
+DropDatabase-Deletes the whole database with all tables.

|Arguments:

| -Database Name: Should be an existing database.

|
+ExitProgram-Exits the program.

Open a database

Database name: Must be an existing database.

```
Welcome to the OctopusDB monitor.
(1) CreateDatabase
(2) OpenDatabase
(3) DropDatabase
(4) ListDatabases
(5) ExitProgram
(6) Manual
octopusDB [(none)] >2

Database name : students
ERROR: Can't open database 'students'.Database doesn't exist.
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
(1) CreateDatabase
(2) OpenDatabase
(3) DropDatabase
(4) ListDatabases
(5) ExitProgram
(6) Manual
octopusDB [(none)] >2

Database name : ITI
```

It will take you to a different menu to manage tables inside the database

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [ITI] >1
```


Create a new table

Table name: Must contain only letters or an alphanumeric string.

Columns and datatypes: name of each column followed by datatype and primary key constrain if exists.

- You cannot assign PK constrain to multiple columns.
- You cannot assign PK constrain to a text column.
- You cannot give multiple columns the same name
- Column name should contain only letters or alphanumeric string.

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [ITI] >2
Table name : Students
Columns and datatypes : id INT PRIMARY_KEY,name TEXT,address TEXT,phone TEXT
Query Ok.
Press any key to continue ..
```

```
octopusDB [ITI] >2
Table name : Subjects
Columns and datatypes : id PRIMARY_KEY, name TEXT , maxScore INT
Query Ok.
Press any key to continue ..
```

```
octopusDB [ITI] >2
Table name : Subjects
Columns and datatypes : ID PRIMARY_KEY , name TEXT PRIMARY_KEY
ERROR: Multiple primary key defined.
Press any key to continue ..
```

```
octopusDB [ITI] >2
Table name : Subjects
Columns and datatypes : name TEXT PRIMARY_KEY , maxScore INT
ERROR: Primary key constrain is assigned on a TEXT column.
Press any key to continue ..
```

List Tables in the database

```
Welcome to the OctopusDB monitor.  
(1) ListTables      (2) CreateTable  
(3) DropTable      (4) InsertRecord  
(5) DeleteRecord   (6) UpdateRecord  
(7) SelectRecord   (8) ShowTable  
(9) ExitDatabase   (10) ExitProgram  
(11) Manual  
octopusDB [ITI] >1  
Empty set.  
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.  
(1) ListTables      (2) CreateTable  
(3) DropTable      (4) InsertRecord  
(5) DeleteRecord   (6) UpdateRecord  
(7) SelectRecord   (8) ShowTable  
(9) ExitDatabase   (10) ExitProgram  
(11) Manual  
octopusDB [ITI] >1  
+-----+  
| Tables_in_ITI |  
+-----+  
| Students      |  
| Subjects      |  
+-----+  
Press any key to continue ..
```

Inserting records in a table

Table name: Must be an existing table in the current database.

Record: Column values of record.

- You cannot assign a non-integer value to an integer column
- You cannot assign a number out of INT range for an int column.
- You cannot assign a duplicate primary key.

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [ITI] >4
Table name : Students
Record : 13,Aya Hamed , New Cairo , 011445433
Query Ok.
Press any key to continue ..
```

```
octopusDB [ITI] >4
Table name : Students
Record : three , aya hamed , Cairo , 454
ERROR: Incorrect integer value: 'three' for column 'ITI.Students.id'.
Press any key to continue ..
```

```
octopusDB [ITI] >4
Table name : Students
Record : 13 , ahmed atef , New Cairo , 045545445
ERROR: Duplicate entry '13' for key 'PRIMARY'.
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [supermarket] >4
Table name : items
Record : 4,brown bread,6,19
Query Ok.
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [supermarket] >4
Table name : items
Record : 3, chicken, 8,9
ERROR: Duplicate entry '3' for key 'PRIMARY'.
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [supermarket] >4
Table name : items
Record : 2147483648,chocolate , 8, 6
ERROR: Out of range value for column 'supermarket.items.id'
Press any key to continue ..
```

```
octopusDB [supermarket] >4
Table name : items
Record : one, chicken , 6 ,7
ERROR: Incorrect integer value: 'one' for column 'supermarket.items.id'.
Press any key to continue ..
```

Print all records in a table

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [ITI] >8
Table name : Students
+-----+-----+-----+-----+
| id | name | address | phone |
+-----+-----+-----+-----+
| 1 | aya | cairo | 01146666666 |
| 2 | atef | rehab | 0115566775 |
| 3 | sarah | nasrCity | 0112225664 |
| 4 | samar | heliopolis | 0984875 |
| 5 | sarah | helwan | 06774466 |
| 6 | atef | helwan | 0696096 |
+-----+-----+-----+-----+
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [supermarket] >8
Table name : items
+-----+-----+-----+-----+
| id | item | price | quantity |
+-----+-----+-----+-----+
| 1 | chocolate | 4 | 7 |
| 2 | cheese bites | 4 | 15 |
| 3 | milk | 3 | 30 |
| 5 | white bread | 3 | 14 |
+-----+-----+-----+-----+
Press any key to continue ..
```

Read certain records from table

Conditions: You can provide multiple conditions separated by commas in the following syntax COL=VAL, COL=VAL. Should provide existing columns.

```
(9) ExitDatabase      (10) ExitProgram
(11) Manual
octopusDB [supermarket] >7
Table name : items
Conditions : price=3
+-----+-----+-----+-----+
| id | item          | price | quantity |
+-----+-----+-----+-----+
| 5  | white bread  | 3     | 14       |
| 6  | brown bread  | 3     | 14       |
+-----+-----+-----+-----+
Press any key to continue ..
```

```
(7) SelectRecord      (8) ShowTable
(9) ExitDatabase      (10) ExitProgram
(11) Manual
octopusDB [supermarket] >7
Table name : items
Conditions : item=white bread,price=3
+-----+-----+-----+-----+
| id | item          | price | quantity |
+-----+-----+-----+-----+
| 5  | white bread  | 3     | 14       |
+-----+-----+-----+-----+
Press any key to continue ..
```

Updating records in a table

Conditions: You can provide multiple conditions separated by commas in the following syntax COL=VAL, COL=VAL. Should provide existing columns.

Updated Value: Provided in the following syntax COL=VAL.

- Should be an existing column.
- Cannot assign same value for multiple records in a PK column.
- Cannot assign non-int value to an integer column.
- You cannot assign a number out of INT range for an int column.

```
(1) ListTables      (2) CreateTable
(3) DropTable      (4) InsertRecord
(5) DeleteRecord   (6) UpdateRecord
(7) SelectRecord   (8) ShowTable
(9) ExitDatabase   (10) ExitProgram
(11) Manual
octopusDB [supermarket] >6
Table name : items
Conditions : id=6
Updated value : item=water
No matching Records.
Press any key to continue ..
```

```
(1) ListTables      (2) CreateTable
(3) DropTable      (4) InsertRecord
(5) DeleteRecord   (6) UpdateRecord
(7) SelectRecord   (8) ShowTable
(9) ExitDatabase   (10) ExitProgram
(11) Manual
octopusDB [supermarket] >6
Table name : items
Conditions : id=3,item=milk
Updated value : price=77
Query Ok.
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
```

```
(1) ListTables      (2) CreateTable  
(3) DropTable      (4) InsertRecord  
(5) DeleteRecord   (6) UpdateRecord  
(7) SelectRecord   (8) ShowTable  
(9) ExitDatabase   (10) ExitProgram  
(11) Manual
```

```
octopusDB [ITI] >6
```

```
Table name : Students
```

```
Conditions : name=sarah
```

```
Updated value : id=9
```

```
ERROR: Can't assign the same value for key 'PRIMARY' in multiple records.
```

```
Press any key to continue ..
```


Deleting Records from a table

Conditions: You can provide multiple conditions separated by commas in the following syntax COL=VAL, COL=VAL. Should provide existing columns.

 **Note that not providing any condition will delete all records.**

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [supermarket] >5
Table name : items
Conditions : id=743, item=milk
Query Ok. No matching records.
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [supermarket] >5
Table name : items
Conditions : item=chocolate,price=4
Query Ok.
Press any key to continue ..
```

```
Welcome to the OctopusDB monitor.
(1) ListTables      (2) CreateTable
(3) DropTable       (4) InsertRecord
(5) DeleteRecord    (6) UpdateRecord
(7) SelectRecord    (8) ShowTable
(9) ExitDatabase    (10) ExitProgram
(11) Manual
octopusDB [supermarket] >5
Table name : items
Conditions : item=brown bread
Query Ok.
Press any key to continue ..
```

Deleting a table

```
Welcome to the OctopusDB monitor.  
(1) ListTables      (2) CreateTable  
(3) DropTable      (4) InsertRecord  
(5) DeleteRecord   (6) UpdateRecord  
(7) SelectRecord   (8) ShowTable  
(9) ExitDatabase   (10) ExitProgram  
(11) Manual  
octopusDB [ITI] >3  
Table name : Subjects  
Query Ok.  
Press any key to continue ..
```