

# OctopusDB Tutorial

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**Authored by:**

- Ahmed Atef
- Aya Hamed



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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 ..
```

# 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 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 : 1 aya cairo 01146666666
Query Ok.
Press any key to continue ..
```

```
octopusDB [ITI] >4
Table name : Students
Record : 1 atef cairo 0948575
ERROR: Duplicate entry '1' for key 'PRIMARY'.
Press any key to continue ..
```

```
octopusDB [ITI] >4
Table name : Students
Record : two atef cairo 0115663355
ERROR: Incorrect integer value: 'two' for column 'ITI.Students.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 ..
```

# Read certain records from table

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

```
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] >7
Table name : Students
Conditions : name=sarah
+-----+-----+-----+-----+
| id | name | address | phone |
+-----+-----+-----+-----+
| 3  | sarah | nasrCity | 0112225664 |
| 5  | sarah | helwan   | 06774466   |
+-----+-----+-----+-----+
Press any key to continue ..
```

```
octopusDB [ITI] >7
Table name : Students
Conditions : name=sarah address=nasrCity
+-----+-----+-----+-----+
| id | name | address | phone |
+-----+-----+-----+-----+
| 3  | sarah | nasrCity | 0112225664 |
+-----+-----+-----+-----+
Press any key to continue ..
```

```
octopusDB [ITI] >7
Table name : Students
Conditions : name=sarah age=22
ERROR: Unknown column 'age'.
Press any key to continue ..
```

# Updating records in a table

**Conditions:** You can provide multiple conditions separated by spaces 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.

```
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=atef address=helwan
Updated value : phone=947383474
Query Ok.
Press any key to continue ..
```

```
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 ..
```

```
octopusDB [ITI] >6
Table name : Students
Conditions : name=aya
Updated value : id=3
ERROR: Duplicate entry for key 'PRIMARY'.
Press any key to continue ..
```

```
octopusDB [ITI] >6
Table name : Students
Conditions : name=aya
Updated value : id=one
Incorrect integer value: one for column id.
Press any key to continue ..
```

---

# Deleting Records from 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] >5  
Table name : Students  
Conditions : name=atef address=helwan  
Query Ok.  
Press any key to continue ..
```

```
octopusDB [ITI] >5  
Table name : Students  
Conditions : name=atef address=Giza  
Query Ok. No matching records.  
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 ..
```