

PART A

```
MariaDB [(none)]> SHOW VARIABLES WHERE Variable_name LIKE "autocommit";
+-----+-----+
| Variable_name | Value |
+-----+-----+
| autocommit    | ON    |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [(none)]> SHOW VARIABLES WHERE Variable_name LIKE "in_transaction";
+-----+-----+
| Variable_name | Value |
+-----+-----+
| in_transaction | 0     |
+-----+-----+
1 row in set (0.00 sec)
```

Autocommit → set to 1, the default, all queries are committed immediately.

in_transaction → Session-only and read-only variable that is set to 1 if you are in a transaction, and 0 if not.

```
MariaDB [(none)]> set autocommit=0
-> ;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> SHOW VARIABLES WHERE Variable_name LIKE "autocommit";
+-----+-----+
| Variable_name | Value |
+-----+-----+
| autocommit    | OFF   |
+-----+-----+
1 row in set (0.01 sec)
```

```

MariaDB [University]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> CREATE TABLE Avg_sal (
  -> asalary FLOAT
  -> );
Query OK, 0 rows affected (0.15 sec)

MariaDB [University]> SET @av = (SELECT avg(salary) FROM instructor);
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> INSERT INTO Avg_sal VALUES
  -> (@av);
Query OK, 1 row affected (0.00 sec)

MariaDB [University]> COMMIT;
Query OK, 0 rows affected (0.08 sec)

MariaDB [University]> select * from Avg_sal;
+-----+
| asalary |
+-----+
| 77600.2 |
+-----+
1 row in set (0.00 sec)

MariaDB [University]> █

```

```

MariaDB [University]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> CREATE TABLE Avg_sal (
  -> asalary DOUBLE
  -> );
Query OK, 0 rows affected (0.14 sec)

MariaDB [University]> SET @av = (SELECT avg(salary) FROM instructor);
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> INSERT INTO Avg_sal VALUES
  -> (@av);
Query OK, 1 row affected (0.00 sec)

MariaDB [University]> SHOW VARIABLES WHERE Variable_name LIKE "in_transaction";
+-----+-----+
| Variable_name | Value |
+-----+-----+
| in_transaction | 1     |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> COMMIT;
Query OK, 0 rows affected (0.04 sec)

MariaDB [University]> █

```

```

MariaDB [University]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> CREATE TABLE Avg_sal_rollback(
  -> asalary DOUBLE
  -> );
Query OK, 0 rows affected (0.13 sec)

MariaDB [University]> SET @av = (SELECT avg(salary) FROM instructor);
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> INSERT INTO Avg_sal_rollback VALUES
  -> (@av);
Query OK, 1 row affected (0.00 sec)

MariaDB [University]> ROLLBACK;
Query OK, 0 rows affected (0.04 sec)

MariaDB [University]> SELECT * FROM Avg_sal_rollback;
Empty set (0.00 sec)

MariaDB [University]> █

```

```

MariaDB [University]>
MariaDB [University]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> CREATE TABLE Avg_sal_rollback(
  -> asalary DOUBLE
  -> );
Query OK, 0 rows affected (0.14 sec)

MariaDB [University]> SET @av = (SELECT avg(salary) FROM instructor);
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> INSERT INTO Avg_sal_rollback VALUES
  -> (@av);
Query OK, 1 row affected (0.00 sec)

MariaDB [University]> COMMIT;
Query OK, 0 rows affected (0.04 sec)

MariaDB [University]> SELECT * FROM Avg_sal_rollback;
+-----+
| asalary |
+-----+
| 77600.1882 |
+-----+
1 row in set (0.00 sec)

MariaDB [University]> █

```

2)

```

ERROR 1212 (HY000): Variable 'tx_isolation' is not a variable component (can't be
MariaDB [University]> SELECT @@GLOBAL.tx_isolation, @@tx_isolation;
+-----+-----+
| @@GLOBAL.tx_isolation | @@tx_isolation |
+-----+-----+
| REPEATABLE-READ      | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> SELECT @@SESSION.tx_isolation, @@tx_isolation;
+-----+-----+
| @@SESSION.tx_isolation | @@tx_isolation |
+-----+-----+
| REPEATABLE-READ      | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> SELECT tx_isolation, @@tx_isolation;
ERROR 1054 (42S22): Unknown column 'tx_isolation' in 'field list'
MariaDB [University]> SELECT @@tx_isolation, @@tx_isolation;
+-----+-----+
| @@tx_isolation | @@tx_isolation |
+-----+-----+
| REPEATABLE-READ | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

```

```

MariaDB [University]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> SET GLOBAL TRANSACTION ISOLATION LEVEL SERIALIZABLE;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> SELECT @@GLOBAL.tx_isolation, @@tx_isolation;
+-----+-----+
| @@GLOBAL.tx_isolation | @@tx_isolation |
+-----+-----+
| SERIALIZABLE          | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> SELECT @@SESSION.tx_isolation, @@tx_isolation;
+-----+-----+
| @@SESSION.tx_isolation | @@tx_isolation |
+-----+-----+
| REPEATABLE-READ        | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> SELECT @@tx_isolation, @@tx_isolation;
+-----+-----+
| @@tx_isolation         | @@tx_isolation |
+-----+-----+
| REPEATABLE-READ        | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> █

```

```

MariaDB [University]> set transaction isolation level serializable;
ERROR 1568 (25001): Transaction characteristics can't be changed while a transaction is in progress
MariaDB [University]> █

```

```

MariaDB [University]> commit;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> set transaction isolation level serializable;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> SELECT @@GLOBAL.tx_isolation, @@tx_isolation;
+-----+-----+
| @@GLOBAL.tx_isolation | @@tx_isolation |
+-----+-----+
| SERIALIZABLE          | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> SELECT @@SESSION.tx_isolation, @@tx_isolation;
+-----+-----+
| @@SESSION.tx_isolation | @@tx_isolation |
+-----+-----+
| REPEATABLE-READ        | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> SELECT @@tx_isolation, @@tx_isolation;
+-----+-----+
| @@tx_isolation         | @@tx_isolation |
+-----+-----+
| REPEATABLE-READ        | REPEATABLE-READ |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> █

```

5)

```
MariaDB [University]>
MariaDB [University]> CREATE USER 'libin_dummy'@'%' IDENTIFIED BY 'password';
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> GRANT ALL PRIVILEGES ON University.* TO 'libin_dummy'@'%;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> describe Avg_sal;
+-----+-----+-----+-----+-----+-----+
| Field  | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| asalary | double | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.04 sec)

MariaDB [University]> SET SESSION TRANSACTION ISOLATION LEVEL SERIALIZABLE;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> SELECT @@GLOBAL.tx_isolation, @@tx_isolation;
+-----+-----+
| @@GLOBAL.tx_isolation | @@tx_isolation |
+-----+-----+
| SERIALIZABLE          | SERIALIZABLE    |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> SELECT @@SESSION.tx_isolation, @@tx_isolation;
+-----+-----+
| @@SESSION.tx_isolation | @@tx_isolation |
+-----+-----+
| SERIALIZABLE           | SERIALIZABLE    |
+-----+-----+
1 row in set (0.00 sec)

MariaDB [University]> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> insert into Avg_sal values(2);
Query OK, 1 row affected (0.00 sec)

MariaDB [University]> █
```

```
111501015@iitpkdd122:~/Database-Lab$ mysql -u libin_dummy -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 10
Server version: 10.2.12-MariaDB-10.2.12+maria~xenial mariadb.org binary distribution

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use University
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [University]> alter table Avg_sal add column b int;
^C^C -- query killed. Continuing normally.
ERROR 1317 (70100): Query execution was interrupted
MariaDB [University]> alter table Avg_sal add column b int;
█
```

The alter table is waiting till transaction is over. (waiting for metalock)

```
MariaDB [University]> SHOW VARIABLES WHERE Variable_name LIKE "%lock_wait%";
+-----+-----+
| Variable_name | Value |
+-----+-----+
| innodb_lock_wait_timeout | 50 |
| lock_wait_timeout | 86400 |
+-----+-----+
2 rows in set (0.00 sec)
```

Time to wait = 86400 sec (1 year)

lock_wait_timeout

- **Description:** Timeout in seconds for attempts to acquire [metadata locks](#). Statements using metadata locks include [FLUSH TABLES WITH READ LOCK](#), [LOCK TABLES](#), [HANDLER](#) and DML and DDL operations on tables, [stored procedures](#) and [functions](#), and [views](#). The timeout is separate for each attempt, of which there may be multiple in a single statement. 0 (from [MariaDB 10.3.0](#)) means no wait. See [WAIT and NOWAIT](#).
- **Commandline:** --lock-wait-timeout=#
- **Scope:** Global, Session
- **Dynamic:** Yes
- **Data Type:** numeric
- **Default Value:**
 - 86400 (1 day) >= [MariaDB 10.2.4](#)
 - 31536000 (1 year) <= [MariaDB 10.2.3](#)
- **Range:**
 - 0 to 31536000 (>= [MariaDB 10.3](#))
 - 1 to 31536000 (<= [MariaDB 10.2](#))
- **Introduced:** [MariaDB 5.5](#)

```
MariaDB [University]> insert into Avg_sal (asalary) values(3);
Query OK, 1 row affected (0.00 sec)
```

```
MariaDB [University]> Select * from
-> information_schema.metadata_lock_info;
```

THREAD_ID	LOCK_MODE	LOCK_DURATION	LOCK_TYPE	TABLE_SCHEMA	TABLE_NAME
10	MDL_INTENTION_EXCLUSIVE	NULL	Global read lock		
10	MDL_INTENTION_EXCLUSIVE	NULL	Schema metadata lock	University	
9	MDL_SHARED_WRITE	NULL	Table metadata lock	University	Avg_sal
10	MDL_SHARED_UPGRADABLE	NULL	Table metadata lock	University	Avg_sal

4 rows in set (0.00 sec)

```
MariaDB [University]> █
```

That is libin_dummy(9) is waiting for table metalock


```

MariaDB [University]> Select * from information_schema.processlist;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| ID | USER | HOST | DB | COMMAND | TIME | STATE | TID | INFO | TIME_MS | STAGE | MAX_STAGE | PROGRESS | MEMORY_USED | EX |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 10 | libin_dummy | localhost | University | Query | 184 | Waiting for table metadata lock | alter table Avg_sal add column c int | 184257.198 | 0 | 0 | 0.000 | 71832 |
| 9 | root | localhost | University | Query | 0 | Filling schema table | Select * from information_schema.processlist | 0.496 | 0 | 0 | 0.000 | 85448 |
| 5 | system user | 0 | NULL | Daemon | 0 | InnoDB shutdown handler | NULL | 0.000 | 0 | 0 | 0.000 | 24352 |
| 3 | system user | 0 | NULL | Daemon | 0 | InnoDB purge worker | NULL | 0.000 | 0 | 0 | 0.000 | 24352 |
| 1 | system user | 0 | NULL | Daemon | 0 | InnoDB purge coordinator | NULL | 0.000 | 0 | 0 | 0.000 | 24352 |
| 4 | system user | 0 | NULL | Daemon | 0 | InnoDB purge worker | NULL | 0.000 | 0 | 0 | 0.000 | 24352 |
| 2 | system user | 0 | NULL | Daemon | 0 | InnoDB purge worker | NULL | 0.000 | 0 | 0 | 0.000 | 24352 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)

MariaDB [University]>

```

```

MariaDB [University]> Select USER AS Have_lock from information_schema.processlist WHERE STATE LIKE 'Filling%' ;
+-----+
| Have_lock |
+-----+
| root |
+-----+
1 row in set (0.00 sec)

MariaDB [University]> Select USER AS Waiting from information_schema.processlist WHERE STATE LIKE 'Waiting%' ;
+-----+
| Waiting |
+-----+
| libin_dummy |
+-----+
1 row in set (0.00 sec)

```

B)

```

libin@Lenovo-Yoga-500-14IBD:/media/libin/study/DataBase-Lab$ mongoimport --db test --collection restaurants --type json --file primer-dataset.json
connected to: 127.0.0.1
2018-03-15T16:04:21.721+0530 check 9 25359
2018-03-15T16:04:21.816+0530 imported 25359 objects

```

```

> var rec = db.restaurants.findOne()
> for (key in rec) { var val = rec[key]; print( key + "(" + typeof(val) + "): " + val ) }
_id(object): 5aaa4bdd2dc10a001fffc196
address(object): [object Object]
borough(string): Bronx
cuisine(string): Bakery
grades(object): [object Object],[object Object],[object Object],[object Object],[object Object]
name(string): Morris Park Bake Shop
restaurant_id(string): 30075445
>

```

```

> db.restaurants.count()
50718
>

```

```

> db.restaurants.find({'cuisine': 'American'}).count()
12366
> db.restaurants.find({'cuisine': 'American'}).count()

```

```

> db.restaurants.aggregate([{$group : {_id: '$cuisine', num: {$sum : 1 } }}])
{ "_id" : "Chilean", "num" : 2 }
{ "_id" : "Californian", "num" : 2 }
{ "_id" : "Creole/Cajun", "num" : 2 }
{ "_id" : "Nuts/Confectionary", "num" : 12 }
{ "_id" : "Hotdogs/Pretzels", "num" : 32 }
{ "_id" : "Australian", "num" : 32 }
{ "_id" : "Cajun", "num" : 14 }
{ "_id" : "Iranian", "num" : 4 }
{ "_id" : "Fruits/Vegetables", "num" : 14 }
{ "_id" : "Creole", "num" : 48 }
{ "_id" : "Salads", "num" : 90 }
{ "_id" : "Peruvian", "num" : 136 }
{ "_id" : "Moroccan", "num" : 30 }
{ "_id" : "Caf  /Coffee/Tea", "num" : 4 }
{ "_id" : "Vietnamese/Cambodian/Malaysia", "num" : 132 }
{ "_id" : "Brazilian", "num" : 52 }
{ "_id" : "Tapas", "num" : 56 }
{ "_id" : "Polynesian", "num" : 2 }
{ "_id" : "Juice, Smoothies, Fruit Salads", "num" : 546 }
{ "_id" : "Indonesian", "num" : 16 }
Type "it" for more
> it
{ "_id" : "Scandinavian", "num" : 14 }
{ "_id" : "Sandwiches", "num" : 918 }
{ "_id" : "English", "num" : 32 }
{ "_id" : "Barbecue", "num" : 104 }
{ "_id" : "Asian", "num" : 618 }
{ "_id" : "Eastern European", "num" : 130 }
{ "_id" : "Bottled beverages, including water, sodas, juices, etc.", "num" : 144 }
{ "_id" : "Czech", "num" : 12 }
{ "_id" : "Thai", "num" : 570 }
{ "_id" : "Mediterranean", "num" : 438 }
{ "_id" : "Middle Eastern", "num" : 336 }
{ "_id" : "African", "num" : 136 }
{ "_id" : "Seafood", "num" : 294 }
{ "_id" : "Soups & Sandwiches", "num" : 102 }
{ "_id" : "Not Listed/Not Applicable", "num" : 38 }
{ "_id" : "Soul Food", "num" : 88 }
{ "_id" : "Spanish", "num" : 1274 }

```

```

{ "_id" : "Soul Food", "num" : 88 }
{ "_id" : "Spanish", "num" : 1274 }
{ "_id" : "Armenian", "num" : 80 }
{ "_id" : "Egyptian", "num" : 28 }
{ "_id" : "Soups", "num" : 8 }
Type "it" for more
> it
{ "_id" : "Mexican", "num" : 1508 }
{ "_id" : "Pizza/Italian", "num" : 936 }
{ "_id" : "Japanese", "num" : 1520 }
{ "_id" : "French", "num" : 688 }
{ "_id" : "Polish", "num" : 50 }
{ "_id" : "Ethiopian", "num" : 36 }
{ "_id" : "Southwestern", "num" : 18 }
{ "_id" : "German", "num" : 62 }
{ "_id" : "Italian", "num" : 2138 }
{ "_id" : "Chinese/Cuban", "num" : 32 }
{ "_id" : "Korean", "num" : 524 }
{ "_id" : "Russian", "num" : 176 }
{ "_id" : "Steak", "num" : 172 }
{ "_id" : "Indian", "num" : 632 }
{ "_id" : "Hawaiian", "num" : 6 }
{ "_id" : "Pizza", "num" : 2326 }
{ "_id" : "Donuts", "num" : 958 }
{ "_id" : "Caribbean", "num" : 1314 }
{ "_id" : "Bangladeshi", "num" : 72 }
{ "_id" : "Hotdogs", "num" : 68 }
Type "it" for more
>

```

```

> it
{ "_id" : "Pancakes/Waffles", "num" : 32 }
{ "_id" : "Turkish", "num" : 140 }
{ "_id" : "Afghan", "num" : 28 }
{ "_id" : "Other", "num" : 2022 }
{ "_id" : "Chinese", "num" : 4836 }
{ "_id" : "Ice Cream, Gelato, Yogurt, Ices", "num" : 696 }
{ "_id" : "Delicatessen", "num" : 642 }
{ "_id" : "Bagels/Pretzels", "num" : 336 }
{ "_id" : "Chicken", "num" : 820 }
{ "_id" : "Jewish/Kosher", "num" : 632 }
{ "_id" : "Vegetarian", "num" : 204 }
{ "_id" : "Café/Coffee/Tea", "num" : 2428 }
{ "_id" : "American", "num" : 12366 }
{ "_id" : "Continental", "num" : 116 }
{ "_id" : "Chinese/Japanese", "num" : 118 }
{ "_id" : "Irish", "num" : 380 }
{ "_id" : "Tex-Mex", "num" : 286 }
{ "_id" : "Hamburgers", "num" : 866 }
{ "_id" : "Pakistani", "num" : 62 }
{ "_id" : "Latin (Cuban, Dominican, Puerto Rican, South & Central American)", "num" : 1700 }
Type "it" for more
> it
{ "_id" : "Sandwiches/Salads/Mixed Buffet", "num" : 510 }
{ "_id" : "Portuguese", "num" : 16 }
{ "_id" : "Bakery", "num" : 1382 }
{ "_id" : "Filipino", "num" : 52 }
{ "_id" : "Greek", "num" : 222 }
>

```

```
> db.restaurants.distinct("restaurant_id", {$and : [{ 'cuisine': 'Hawaiian'}, { 'grades.grade': 'A' } ]})
[ "41509012", "41515513", "50002079" ]
> db.restaurants.distinct("restaurant_id", {$and : [{ 'cuisine': 'Hawaiian'}, { 'grades.grade': 'A' } ]}).length
3
> █
```

```
> db.restaurants.aggregate([{$group : { _id: '$cuisine', num: {$sum : 1} }}, {$sort: {num:-1}}])
{ "_id" : "American", "num" : 12366 }
{ "_id" : "Chinese", "num" : 4836 }
{ "_id" : "Café/Coffee/Tea", "num" : 2428 }
{ "_id" : "Pizza", "num" : 2326 }
{ "_id" : "Italian", "num" : 2138 }
{ "_id" : "Other", "num" : 2022 }
{ "_id" : "Latin (Cuban, Dominican, Puerto Rican, South & Central American)", "num" : 1700 }
{ "_id" : "Japanese", "num" : 1520 }
{ "_id" : "Mexican", "num" : 1508 }
{ "_id" : "Bakery", "num" : 1382 }
{ "_id" : "Caribbean", "num" : 1314 }
{ "_id" : "Spanish", "num" : 1274 }
{ "_id" : "Donuts", "num" : 958 }
{ "_id" : "Pizza/Italian", "num" : 936 }
{ "_id" : "Sandwiches", "num" : 918 }
{ "_id" : "Hamburgers", "num" : 866 }
{ "_id" : "Chicken", "num" : 820 }
{ "_id" : "Ice Cream, Gelato, Yogurt, Ices", "num" : 696 }
{ "_id" : "French", "num" : 688 }
{ "_id" : "Delicatessen", "num" : 642 }
Type "it" for more
> █
```

```
> it
{ "_id" : "Indian", "num" : 632 }
{ "_id" : "Jewish/Kosher", "num" : 632 }
{ "_id" : "Asian", "num" : 618 }
{ "_id" : "Thai", "num" : 570 }
{ "_id" : "Juice, Smoothies, Fruit Salads", "num" : 546 }
{ "_id" : "Korean", "num" : 524 }
{ "_id" : "Sandwiches/Salads/Mixed Buffet", "num" : 510 }
{ "_id" : "Mediterranean", "num" : 438 }
{ "_id" : "Irish", "num" : 380 }
{ "_id" : "Middle Eastern", "num" : 336 }
{ "_id" : "Bagels/Pretzels", "num" : 336 }
{ "_id" : "Seafood", "num" : 294 }
{ "_id" : "Tex-Mex", "num" : 286 }
{ "_id" : "Greek", "num" : 222 }
{ "_id" : "Vegetarian", "num" : 204 }
{ "_id" : "Russian", "num" : 176 }
{ "_id" : "Steak", "num" : 172 }
{ "_id" : "Bottled beverages, including water, sodas, juices, etc.", "num" : 144 }
{ "_id" : "Turkish", "num" : 140 }
{ "_id" : "Peruvian", "num" : 136 }
Type "it" for more
> █
```



```

> it
{ "_id" : "African", "num" : 136 }
{ "_id" : "Vietnamese/Cambodian/Malaysia", "num" : 132 }
{ "_id" : "Eastern European", "num" : 130 }
{ "_id" : "Chinese/Japanese", "num" : 118 }
{ "_id" : "Continental", "num" : 116 }
{ "_id" : "Barbecue", "num" : 104 }
{ "_id" : "Soups & Sandwiches", "num" : 102 }
{ "_id" : "Salads", "num" : 90 }
{ "_id" : "Soul Food", "num" : 88 }
{ "_id" : "Armenian", "num" : 80 }
{ "_id" : "Bangladeshi", "num" : 72 }
{ "_id" : "Hotdogs", "num" : 68 }
{ "_id" : "German", "num" : 62 }
{ "_id" : "Pakistani", "num" : 62 }
{ "_id" : "Tapas", "num" : 56 }
{ "_id" : "Brazilian", "num" : 52 }
{ "_id" : "Filipino", "num" : 52 }
{ "_id" : "Polish", "num" : 50 }
{ "_id" : "Creole", "num" : 48 }
{ "_id" : "Not Listed/Not Applicable", "num" : 38 }
Type "it" for more
>

```

```

> it
{ "_id" : "Ethiopian", "num" : 36 }
{ "_id" : "Hotdogs/Pretzels", "num" : 32 }
{ "_id" : "Australian", "num" : 32 }
{ "_id" : "English", "num" : 32 }
{ "_id" : "Chinese/Cuban", "num" : 32 }
{ "_id" : "Pancakes/Waffles", "num" : 32 }
{ "_id" : "Moroccan", "num" : 30 }
{ "_id" : "Egyptian", "num" : 28 }
{ "_id" : "Afghan", "num" : 28 }
{ "_id" : "Southwestern", "num" : 18 }
{ "_id" : "Indonesian", "num" : 16 }
{ "_id" : "Portuguese", "num" : 16 }
{ "_id" : "Cajun", "num" : 14 }
{ "_id" : "Fruits/Vegetables", "num" : 14 }
{ "_id" : "Scandinavian", "num" : 14 }
{ "_id" : "Nuts/Confectionary", "num" : 12 }
{ "_id" : "Czech", "num" : 12 }
{ "_id" : "Soups", "num" : 8 }
{ "_id" : "Hawaiian", "num" : 6 }
{ "_id" : "Iranian", "num" : 4 }
Type "it" for more
>

```

```

> it
{ "_id" : "Café/Coffee/Tea", "num" : 4 }
{ "_id" : "Chilean", "num" : 2 }
{ "_id" : "Californian", "num" : 2 }
{ "_id" : "Creole/Cajun", "num" : 2 }
{ "_id" : "Polynesian", "num" : 2 }
>

```

```
> db.restaurants.aggregate([{$group : {_id: '$cuisine', num: {$sum : 1} }}, {$sort: {num:-1}}, {$match :{ num : {$gt : 100}}}]])
{ "_id" : "American", "num" : 12366 }
{ "_id" : "Chinese", "num" : 4836 }
{ "_id" : "Café/Coffee/Tea", "num" : 2428 }
{ "_id" : "Pizza", "num" : 2326 }
{ "_id" : "Italian", "num" : 2138 }
{ "_id" : "Other", "num" : 2022 }
{ "_id" : "Latin (Cuban, Dominican, Puerto Rican, South & Central American)", "num" : 1700 }
{ "_id" : "Japanese", "num" : 1520 }
{ "_id" : "Mexican", "num" : 1508 }
{ "_id" : "Bakery", "num" : 1382 }
{ "_id" : "Caribbean", "num" : 1314 }
{ "_id" : "Spanish", "num" : 1274 }
{ "_id" : "Donuts", "num" : 958 }
{ "_id" : "Pizza/Italian", "num" : 936 }
{ "_id" : "Sandwiches", "num" : 918 }
{ "_id" : "Hamburgers", "num" : 866 }
{ "_id" : "Chicken", "num" : 820 }
{ "_id" : "Ice Cream, Gelato, Yogurt, Ices", "num" : 696 }
{ "_id" : "French", "num" : 688 }
{ "_id" : "Delicatessen", "num" : 642 }
Type "it" for more
>
```

```
> it
{ "_id" : "Indian", "num" : 632 }
{ "_id" : "Jewish/Kosher", "num" : 632 }
{ "_id" : "Asian", "num" : 618 }
{ "_id" : "Thai", "num" : 570 }
{ "_id" : "Juice, Smoothies, Fruit Salads", "num" : 546 }
{ "_id" : "Korean", "num" : 524 }
{ "_id" : "Sandwiches/Salads/Mixed Buffet", "num" : 510 }
{ "_id" : "Mediterranean", "num" : 438 }
{ "_id" : "Irish", "num" : 380 }
{ "_id" : "Middle Eastern", "num" : 336 }
{ "_id" : "Bagels/Pretzels", "num" : 336 }
{ "_id" : "Seafood", "num" : 294 }
{ "_id" : "Tex-Mex", "num" : 286 }
{ "_id" : "Greek", "num" : 222 }
{ "_id" : "Vegetarian", "num" : 204 }
{ "_id" : "Russian", "num" : 176 }
{ "_id" : "Steak", "num" : 172 }
{ "_id" : "Bottled beverages, including water, sodas, juices, etc.", "num" : 144 }
{ "_id" : "Turkish", "num" : 140 }
{ "_id" : "Peruvian", "num" : 136 }
Type "it" for more
>
```

```
Type "it" for more
> it
{ "_id" : "African", "num" : 136 }
{ "_id" : "Vietnamese/Cambodian/Malaysia", "num" : 132 }
{ "_id" : "Eastern European", "num" : 130 }
{ "_id" : "Chinese/Japanese", "num" : 118 }
{ "_id" : "Continental", "num" : 116 }
{ "_id" : "Barbecue", "num" : 104 }
{ "_id" : "Soups & Sandwiches", "num" : 102 }
>
```