Tutorial 2
MongoDB Compass

The objective of this tutorial is to understand how MongoDB works through the usage of MongoDB Compass. You are also expected to be able to do MongoDB CRUD Operations on MongoDB Compass.

CRUD Exercise

1. Open MongoDB Compass, then Connect to localhost.

Database Name	Storage Size	Collections	Indexes	
admin	16.0KB	0	1	🗑
config	24.0KB	0	2	🗑
local	36.0KB	1	1	🗑

2. Add new database called `restaurantdb` and a collection called `restaurant`.

3. Insert the following data into `restaurant` collection:

i.   Name   : Theio Theo
        Address   : 5/7, Waverley Road, Malvern East VIC 3145, Melbourne
        Phone number : 03 8657 8585
        Cuisines   : Greek, Healthy Food
        Average cost ($) : 100
        Opening Hours : 5pm-10pm
        BYO   : true

ii.   Name   : Portofino Pizza
        Address   : 884 Glen Huntly Road, Caulfield VIC 3145, Melbourne
        Phone number : 03 9528 6693
        Cuisines   : Pizza, Italian
        Average cost ($) : 60
        Opening Hours : 5pm-10pm
        BYO   : true

iii.   Name   : The Cheesecake Shop
        Address   : 882 Glen Huntly Road, Caulfield VIC 3145, Melbourne
        Phone number : 03 9528 5203
        Cuisines   : Desserts
        Average cost ($) : 20
        Opening Hours : 9am-7.30pm
        BYO   : false

iv.   Name   : Cool Rays
        Address   : 71 Terry Street, Healesville VIC 3777
        Phone number : 03 9876 1234
        Cuisines   : Desserts
        Average cost ($) : 20
        Opening Hours : 9am-7.30pm

BYO   : false

v.   Name   : Humble Rays
  Address   : 71 Bouverie Street, Carlton VIC 3053, Melbourne
  Phone number   : 03 8657 8526
  Cuisines   : Coffee and Tea, Cafe Food, Asian Fusion
  Average cost ($) : 50
  Opening Hours   : 8am-4pm
  BYO   : false

vi.   Name   : The Crux & Co
  Address   : 35 Albert Road, South Melbourne VIC 3205, Melbourne
  Phone number   : 03 9820 1081
  Cuisines   : Coffee and Tea, Cafe Food
  Average cost ($) : 60
  Opening Hours   : 8am-4pm
  BYO   : false

vii.   Name   : Advieh
  Address   : 71B Gamon Street, Seddon VIC 3011, Melbourne
  Phone number   : 03 8592 7384
  Cuisines   : Middle Eastern, Coffee and Tea, Cafe Food
  Average cost ($) : 50
  Opening Hours   : 8am-3:30pm, 6pm-10pm
  BYO   : false

viii.   Name   : Suda
  Address   : Shop C2, 550 Lonsdale Street, CBD, VIC 3000
  Phone number   : 03 9942 6422
  Cuisines   : Korean, Asian
  Average cost ($) : 60
  Opening Hours   : 12noon – 2:30pm, 5pm – 10pm
  BYO   : false

ix.   Name   : Devon
  Address   : 76 Devonshire Street, Surry Hills NSW 2010, Sydney
  Phone number   : 02 9211 8777
  Cuisines   : Coffee and Tea, Cafe Food
  Average cost ($) : 60
  Opening Hours   : 8am-3.30pm
  BYO   : true

x.   Name   : The Grounds of Alexandria Cafe
  Address   : Shop 7A, 2 Huntley Street, Alexandria NSW 2015, Sydney
  Phone number   : 02 9699 2225
  Cuisines   : Coffee and Tea, Salad, Poké, Cafe Food
  Average cost ($) : 80
  Opening Hours   : 7.30am-4pm
  BYO   : false

xi.   Name   : Chefs Gallery
  Address   : Shop 12, Regent Place Arcade, 501 George Street, CBD NSW 2000, Sydney
  Phone number   : 02 9267 8877
  Cuisines   : Chinese, Asian
  Average cost ($) : 70
  Opening Hours   : 11.30am-10pm
  BYO   : true
  Known for   : Unique Chinese dining experience with handmade noodles, dim sum and chapas (Chinese style tapas)

xii.   Name   : Ciao Italia
  Address   : 273 Mill Point Road, South Perth, Perth, WA 6151
  Phone number   : 08 9368 5500

Cuisines   : Italian, Seafood
Average cost ($) : 65
Opening Hours   : 5pm-10pm
BYO   : true

Note: some data can be stored as an object or array. For instance, the address can be stored as an object as shown below.

```
  _id: ObjectId("5d451b986b3d34f35a085609")
  name: "Humble Rays"
∨ address: Object
    street: "71 Bouverie Street"
    suburb: "Carlton"
    state: "VIC"
    postcode: 3053
  phone: "03 8354 8459"
∨ cuisines: Array
    0: "Coffee and Tea"
    1: "Cafe Food"
    2: "Asian Fusion"
  averagecost: 50
  opening_hours: "8am-4pm"
  byo: false
```

4. Change the view to TABLE.

	restaurantdb.restaurant		DOCUMENTS 12 / TOTAL SIZE 3.5KB / AVG. SIZE 298B	INDEXES 1 / TOTAL SIZE 20.0KB / AVG. SIZE 20.0KB

Documents   Aggregations   Explain Plan   Indexes

FILTER   ▸ OPTIONS   FIND   RESET   ...

INSERT DOCUMENT   VIEW ≔ LIST ⊞ TABLE   Displaying documents 1 - 12 of 12 ‹ › C

🏠 restaurant

	_id ObjectId	name String	address Object	phone String	cuisines Array
1	5d451b986b3d34f35a085605	"Theio Theo"	{} 4 fields	"03 8657 8585"	[] 2 elements
2	5d451b986b3d34f35a085606	"Portofino Pizza"	{} 4 fields	"03 9528 6693"	[] 2 elements
3	5d451b986b3d34f35a085607	"The Cheesecake Shop"	{} 4 fields	"03 9528 5203"	[] 1 elements
4	5d451b986b3d34f35a085608	"Cool Rays"	{} 4 fields	"03 9876 1234"	[] 1 elements
5	5d451b986b3d34f35a085609	"Humble Rays"	{} 4 fields	"03 8354 8459"	[] 3 elements
6	5d451b986b3d34f35a08560a	"The Crux & Co"	{} 4 fields	"03 9820 1081"	[] 2 elements
7	5d451b986b3d34f35a08560b	"Advieh"	{} 4 fields	"03 8592 7384"	[] 3 elements
8	5d451b986b3d34f35a08560c	"Suda"	{} 4 fields	"03 9942 6422"	[] 2 elements
9	5d451b986b3d34f35a08560d	"Devon"	{} 4 fields	"02 9211 8777"	[] 2 elements
10	5d451b986b3d34f35a08560e	"The Grounds of Alexandria Cafe"	{} 4 fields	"02 9699 2225"	[] 4 elements
11	5d451b986b3d34f35a08560f	"Chefs Gallery"	{} 4 fields	"02 9267 8877"	[] 2 elements
12	5d451b986b3d34f35a085610	"Ciao Italia"	{} 4 fields	"08 9368 5500"	[] 2 elements

Write down your observation(s).

5. Read Operation.
    5.1. Show all restaurants.

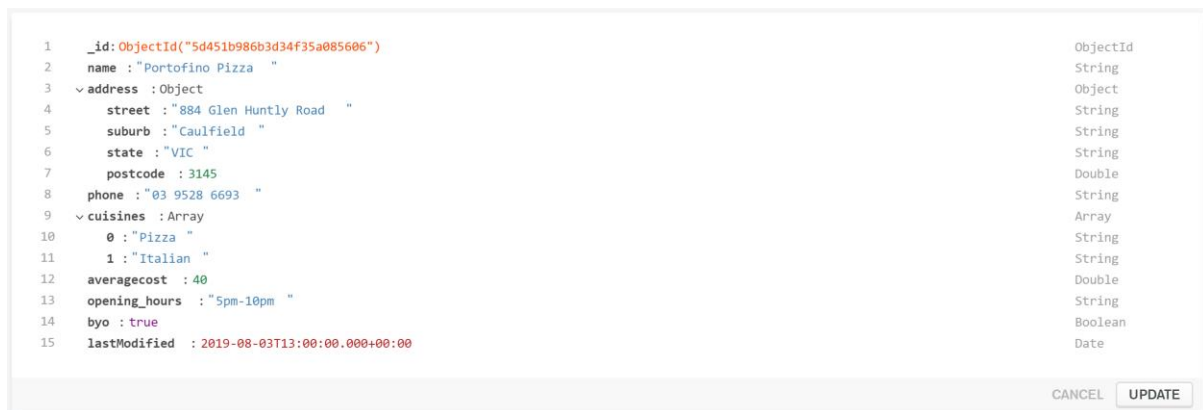   5.2. Show restaurants that do not provide BYO.

        {BYO:false}

5.3. List all restaurants that are in VIC. {"Address.state":"VIC"}

5.4. Find restaurants that serve Italian cuisine. {Cuisines:{$regex:/Italian/}}

5.5. Display the restaurant's name and cuisines for all restaurants. {Name:1,Cuisines:1}

5.6. Display the restaurant's name, address and cuisines, but exclude the ID, for all restaurants. {Name:1,Cuisines:1,Address:1, _id:0}

5.7. Display the restaurant's name, suburb, postcode and phone number, but exclude the ID, for all restaurants.
{Name:1,Cuisines:1, _id:0,"Phone number":1,"Address.postcode":1,"Address.surbub":1}

5.8. Show 5 restaurants with the restaurant's name, average cost, cuisines and phone number, but exclude the ID.
{Name:1,"Average cost ($)":1,Cuisines:1,"Phone number":1,_id:0}, collation: limit 5

5.9. Display the restaurant's name, suburb, average cost, cuisines and phone number, but exclude the ID, for all restaurants in VIC. {"Address.state":"VIC"}
{"Address.surbub":1, Name:1, "Average cost($)":1,Cuisines:1,"Phone number":1,_id:0}

5.10. Display the restaurant's name, suburb, average cost, cuisines and phone number, but exclude the ID, for all restaurants in VIC.

5.11. Show 5 restaurants in VIC with the restaurant's name, suburb, average cost, cuisines and phone number, but exclude the ID.

5.12. Display the next 5 restaurants in VIC after skipping first 5 (from the previous question).

5.13. Find restaurants with the average cost less than $50. {"Average cost ($)":{$lt:59}}

5.14. Find restaurants with the average cost more than $50 but less than equal to $100.
{"Average cost ($)":{$gt:50,$lte:100}}

5.15. Find the restaurants that serve "Coffee and Tea" and their average cost is less than $60. {"Average cost ($)":{$lt:60}, Cuisines:{$regex:/Coffee and Tea/}}

5.16. Find the restaurants that do not serve any cuisine of "Café Food" and their average cost is over $20.

5.17. Find the restaurants that do not serve any cuisine of "Café Food" and their average cost is over $20 and they are not located in VIC.

5.18. Sort all restaurants according to the restaurant's name in ascending order. {Name:1}

5.19. Display the restaurant's name, postcode, opening hours, and BYO. Sort the name in descending order.

5.20. Display the restaurant's name, postcode, opening hours, and BYO. Sort the name and postcode in ascending order.

5.21. Find the restaurants that do not serve any cuisine of "Café Food" and their average cost is over $20 and they are not located in VIC. Sort the results by the average cost.
{Cuisines:{$nin:["Café Food"]}, "Average cost ($)":{$gt:20},"Address.state": {$ne:"VIC"}}

5.22. Find the restaurants that serve Seafood or Salad. Sort the results by the average cost in descending order.

5.23. Find restaurants that are in Caulfield or Malvern East or Carlton that have the average cost less than $60.

5.24. Find restaurants that are NOT in Caulfield or Malvern East or Carlton that have the average cost less than $60.

5.25. Show restaurant that has the "known for" information.

{"Known for":{$exists:1}}

6. Update Operation.

6.1. Change the average cost of Portofino Pizza to $40.

6.2. Add a field called `lastModified` in the document that you recently updated. Change the data type to Date and insert the value with today's date.

```
1      _id: ObjectId("5d451b986b3d34f35a085606")                    ObjectId
2      name : "Portofino Pizza  "                                   String
3    v address  : Object                                            Object
4        street  : "884 Glen Huntly Road   "                        String
5        suburb  : "Caulfield  "                                    String
6        state : "VIC "                                             String
7        postcode  : 3145                                           Double
8      phone : "03 9528 6693   "                                    String
9    v cuisines  : Array                                            Array
10       0 : "Pizza  "                                              String
11       1 : "Italian  "                                            String
12     averagecost  : 40                                            Double
13     opening_hours  : "5pm-10pm  "                                String
14     byo : true                                                   Boolean
15     lastModified  : 2019-08-03T13:00:00.000+00:00                Date

                                                    CANCEL    UPDATE
```

6.3. Add Italian cuisine to Cool Rays.

6.4. Add a field called `lastModified` in Cool Rays. Change the data type to Date and insert the value with today's date.

7. Delete Operation.

7.1. Find restaurant named Cool Rays. Delete this restaurant.

7.2. Can we undo our delete action in MongoDB?

The End