

Assignment4

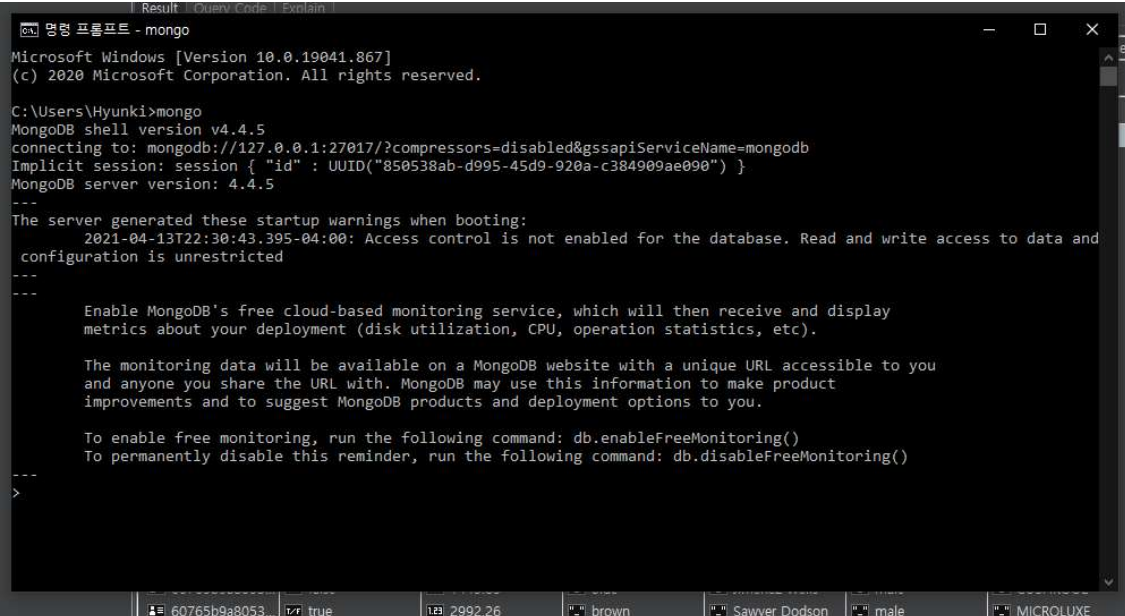
CSC 4710 Database System

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Part1

I am using Window. Thus, I took a picture that I operate mongo in the CMD. Also, I added a picture that I imported restaurant.json in the Studio 3T.



```
명령 프롬프트 - mongo
Microsoft Windows [Version 10.0.19041.867]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\Hyunki>mongo
MongoDB shell version v4.4.5
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("850538ab-d995-45d9-920a-c384909ae090") }
MongoDB server version: 4.4.5

---
The server generated these startup warnings when booting:
  2021-04-13T22:30:43.395-04:00: Access control is not enabled for the database. Read and write access to data and
configuration is unrestricted
---

  Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

  The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

  To enable free monitoring, run the following command: db.enableFreeMonitoring()
  To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---
>
```

Studio 3T for MongoDB - TRIAL LICENSE

File Edit Database Collection Index Document GridFS View Help

Connect Collection IntelliShell SQL Aggregate Map-Reduce Compare Schema Reschema Tasks Export Import Data Masking SQL Migration Users Roles Server 3T

Welcome to your trial of full free access to Studio 3T. The trial is available for 29 days. [How to get a license?](#)

Search Open Connections (Ctrl-F) ...

local host localhost27017 [direct]

Assignment4

Collections (1)

restaurant

Views (0)

GridFS Buckets (0)

System (0)

admin

config

local

Quickstart x IntelliShell: local host x restaurant x

local host (localhost27017) > Assignment4 > restaurant

Query {}

Projection {} Sort {}

Skip Limit

Result Query Code Explain

50 Documents 1 to 50

Table View

restaurant > isActive

_id	isActive	DailySales	logoColor	OwnerName	OwnerGender	restaurantName	email
60765b9a8053...	false	2120.9	brown	Lela Dickerson	female	OPTYK	leila...
60765b9a8053...	false	2276.34	blue	Naomi Mckee	female	LUNCHPAD	naomi...
60765b9a8053...	true	2740.51	brown	Christian Mercer	male	HANDSHAKE	christ...
60765b9a8053...	true	2315.68	blue	Tammie Roberts...	female	DUFLEX	tammie...
60765b9a8053...	false	2756.3	green	Riggs Blair	male	OATFARM	riggs...
60765b9a8053...	true	2131.97	brown	Christensen Ros...	male	TROLLERY	christ...
60765b9a8053...	false	2656.94	blue	Marcie Humphrey	female	ANIXANG	marcie...
60765b9a8053...	false	1259.29	brown	Roman Bird	male	NAVIR	roman...
60765b9a8053...	false	1214.73	green	Jenna Pacheco	female	OLYMPIX	jenna...
60765b9a8053...	false	3478.18	blue	Hinton Dunlap	male	ESCHOIR	hinton...
60765b9a8053...	false	2300.12	green	Margret Steele	female	GRUPOLI	margre...
60765b9a8053...	false	2085.18	blue	Donaldson Glenn	male	GEEKKO	dondal...
60765b9a8053...	false	1765.74	blue	Peters Landry	male	QUANTASIS	peter...
60765b9a8053...	true	2277.9	blue	Kaufman Mcknl...	male	ZEPITOPC	kaufma...
60765b9a8053...	false	2552.96	brown	Bailey Ramsey	male	KNOWLYSIS	bailey...
60765b9a8053...	false	2288.51	brown	Nikki Robbins	female	IMAGINART	nikki...
60765b9a8053...	true	1122.09	brown	Susana Lee	female	FURNITECH	susana...
60765b9a8053...	true	1615.14	blue	Wooten Gallagher	male	APEX	wooten...
60765b9a8053...	true	1386.92	blue	Kathrine Peterson	female	ENDIPIN	kathri...
60765b9a8053...	false	1704.65	brown	Rhonda Ellis	female	EMTRAK	rhonda...
60765b9a8053...	false	1445.85	blue	Jimenez Wells	male	GUSHKOL	jimene...
60765b9a8053...	true	2992.26	brown	Sawyer Dodson	male	MICROLUXE	sawyer...
60765b9a8053...	false	3579.39	green	Mcbride Cochran	male	GEOFORMA	mcbride...
60765b9a8053...	false	1317.9	green	Noreen Branch	female	EYEWAX	noreen...
60765b9a8053...	false	2525.45	green	Tania Herrera	female	BEZAL	tania...
60765b9a8053...	true	3425.41	green	Castillo Morton	male	SLOFAST	castil...
60765b9a8053...	false	3511.71	blue	Boyer Hatfield	male	OTHERWAY	boyer...
60765b9a8053...	false	2745.6	brown	Selena Chambers	female	ZIPAK	selena...
60765b9a8053...	true	3641.54	green	Maribel Onell	female	LIQUICOM	maribe...
60765b9a8053...	true	1773.77	blue	Haley Estes	female	PROXSOF	haley...
60765b9a8053...	true	3107.69	blue	Ollie McIntyre	female	CHORIZON	ollie...
60765b9a8053...	true	3275.73	green	Dixie Mckay	female	ZIGGLES	dixie...
60765b9a8053...	true	1394.85	blue	Simmons Pierce	male	MEMORA	simmon...
60765b9a8053...	true	3863.81	brown	Haynes Ewing	male	RONELON	haynes...
60765b9a8053...	true	3092.2	green	Nola Bass	female	VERTIDE	nola...
60765b9a8053...	false	1799.22	brown	Marlon Crawford	female	XYLAR	marlon...
60765b9a8053...	false	2533.5	brown	McLaughlin Clarke	male	EVIDENDS	mcclau...
60765b9a8053...	true	3090.08	brown	Angel Newman	female	REMOTION	angel...
60765b9a8053...	true	3442.82	blue	Eva Mayer	female	TYPHONICA	eva...
60765b9a8053...	true	1411.11	green	Erma Blackburn	female	SAVVY	erma...
60765b9a8053...	true	3031.16	brown	James Moore	female	ORBALIX	james...
60765b9a8053...	false	3817.26	brown	French Oneal	male	NETUR	french...
60765b9a8053...	true	1852.55	green	Cristina Phelps	female	OHMNET	cristi...
60765b9a8053...	false	2739.16	green	Frederick Thornt...	male	NUTRALAB	freder...
60765b9a8053...	false	3547.93	brown	Audrey Harris	female	VANTAGE	audrey...
60765b9a8053...	true	3295.8	blue	Carrillo Macdon	male	COMTOUR	carril...

Operations

1 document selected

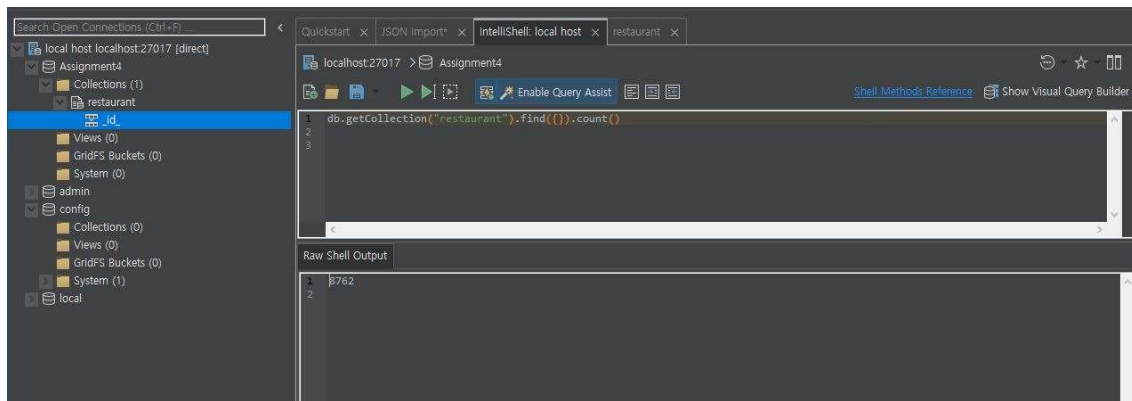
Count Documents 00:00:00.002

Part2

1.

8762

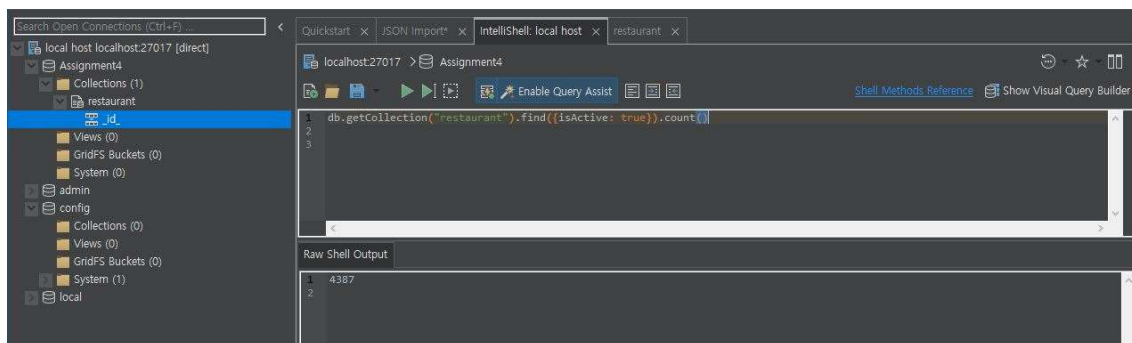
```
db.getCollection("restaurant").find({}).count()
```



2.

4387

```
db.getCollection("restaurant").find({isActive: true}).count()
```



3.

```
db.getCollection("restaurant").find().sort({DailySales:-1}).limit(1)
```

The screenshot shows the MongoDB Compass interface. The left sidebar displays the database structure for 'localhost:27017', including a 'restaurant' collection. The main editor shows the query: `db.getCollection("restaurant").find().sort({DailySales:-1}).limit(1)`. The 'Raw Shell Output' tab at the bottom displays the result as a table with the following data:

_id	isActive	DailySales	logoColor	OwnerName	OwnerGender	restaurantName	email
60765b9a8053...	false	3999.92	blue	Lang Farley	male	FARMAGE	langfar

4.

```
db.getCollection("restaurant").find().sort({DailySales:1}).limit(1)
```

The screenshot shows the MongoDB Compass interface. The left sidebar displays the database structure for 'localhost:27017', including a 'restaurant' collection. The main editor shows the query: `db.getCollection("restaurant").find().sort({DailySales:1}).limit(1)`. The 'Raw Shell Output' tab at the bottom displays the result as a table with the following data:

_id	isActive	DailySales	logoColor	OwnerName	OwnerGender	restaurantName	email
60765b9b8053...	true	1000.97	brown	Esther Ford	female	ASSISTIX	estherf

5.

```
db.getCollection("restaurant").aggregate([{$group: {_id:null, avg: {$avg: "$DailySales"} } } ]])
```

The screenshot shows the IntelliJ Shell interface with a query executed in the 'restaurant' database. The query is:

```
1 db.getCollection("restaurant").aggregate([{$group: {_id:null, avg: {$avg: "$DailySales"} } } ]])
2
```

The output is displayed in a table view with the following data:

_id	avg
null	2505.81451837

6.

49.828...%

```
var totalGender = db.getCollection("restaurant").count();
db.getCollection("restaurant").aggregate(
  [
    { "$group": { "_id": { "OwnerGender": "$OwnerGender"}, "countEach":
{ "$sum": 1 } } }},
    { "$project": {
      "countEach": 1,
      "percentage": {
        "$concat": [ { "$substr": [ { "$multiply": [ { "$divide":
[ "$countEach", { "$literal": totalGender } ] ] },
          100 ] }, 0,6 ] },
        "", "%" ] }
      }
    }
  ]
)
```

The screenshot shows a MongoDB Shell window with a query and its results. The query is an aggregate query that groups data by OwnerGender and calculates the percentage of each gender. The results are displayed in a table view.

Raw Shell Output: Aggregate Query (line 2)

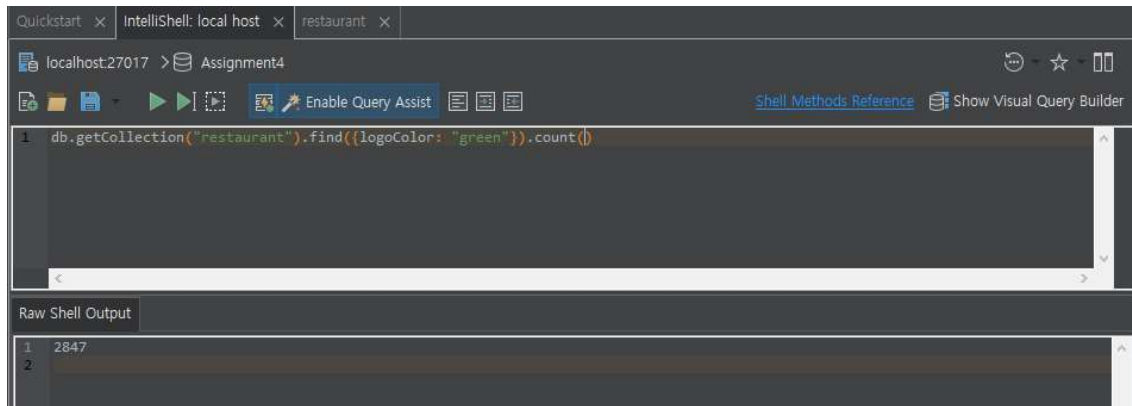
Output > countEach

_id	OwnerGender (_id.OwnerGender)	countEach	percentage
{ 1 fields }	male	4396.0	50.171%
{ 1 fields }	female	4366.0	49.828%

7.

2847

```
db.getCollection("restaurant").find({logoColor: "green"}).count()
```

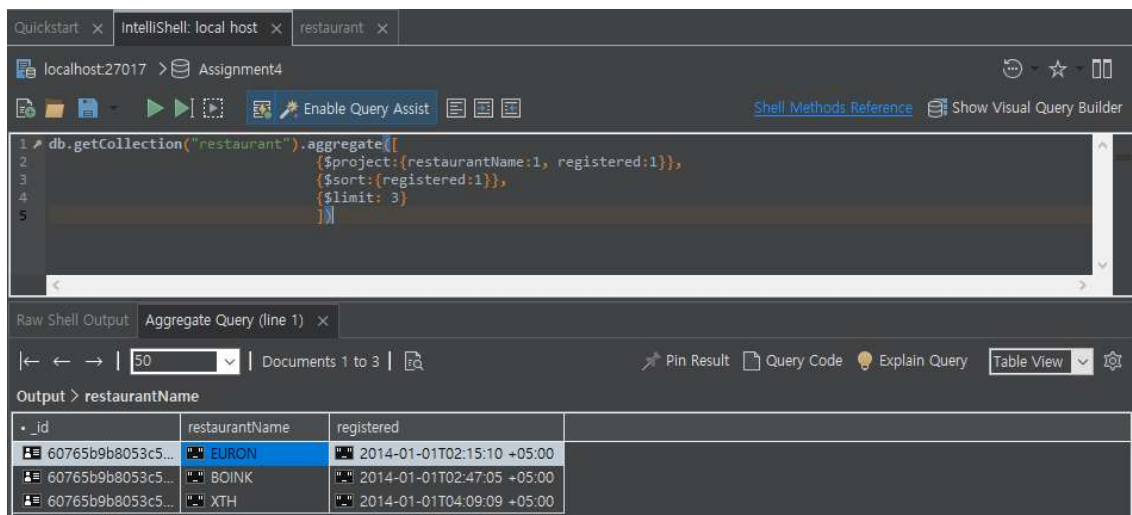


The screenshot shows the IntelliJ Shell interface with a tab for 'restaurant'. The command entered is `db.getCollection("restaurant").find({logoColor: "green"}).count()`. The 'Raw Shell Output' pane shows the result '2847'.

8.

EURON

```
db.getCollection("restaurant").aggregate([
    {$project:{restaurantName:1, registered:1}},
    {$sort:{registered:1}},
    {$limit: 3}
])
```



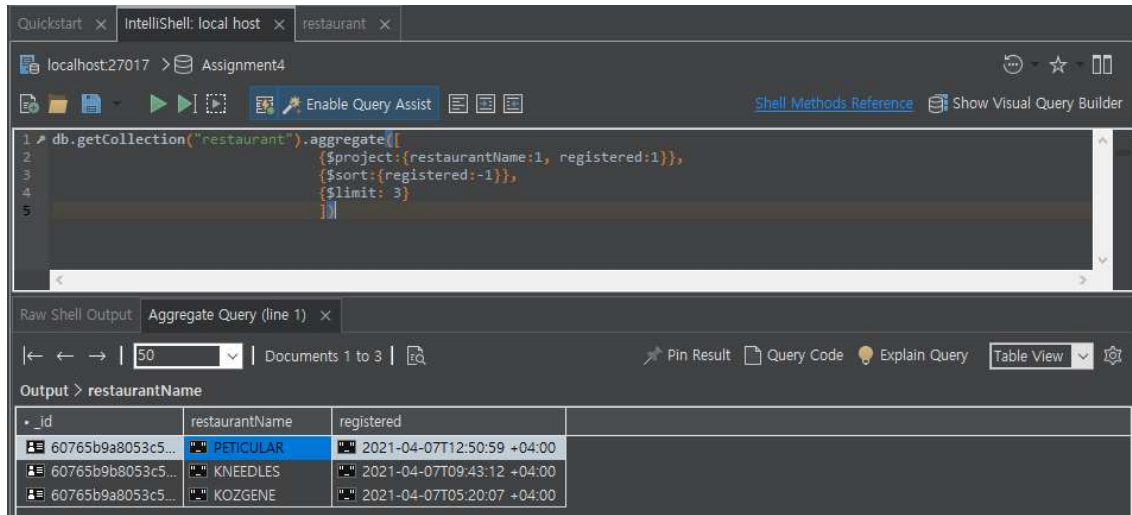
The screenshot shows the IntelliJ Shell interface with a tab for 'restaurant'. The command entered is an aggregate query: `db.getCollection("restaurant").aggregate([{$project:{restaurantName:1, registered:1}}, {$sort:{registered:1}}, {$limit: 3}])`. The 'Raw Shell Output' pane shows 'Aggregate Query (line 1)'. Below the output, a table view displays the results:

_id	restaurantName	registered
60765b9b8053c5...	EURON	2014-01-01T02:15:10 +05:00
60765b9b8053c5...	BOINK	2014-01-01T02:47:05 +05:00
60765b9b8053c5...	XTH	2014-01-01T04:09:09 +05:00

9.

PETICULAR

```
db.getCollection("restaurant").aggregate([
  {$project:{restaurantName:1, registered:1}},
  {$sort:{registered:-1}},
  {$limit: 3}
])
```



IntelliShell: local host x restaurant x

localhost:27017 > Assignment4

Enable Query Assist

Shell Methods Reference Show Visual Query Builder

```
1 db.getCollection("restaurant").aggregate([
2   {$project:{restaurantName:1, registered:1}},
3   {$sort:{registered:-1}},
4   {$limit: 3}
5 ])
```

Raw Shell Output Aggregate Query (line 1) x

← → | 50 | Documents 1 to 3 | Pin Result Query Code Explain Query Table View

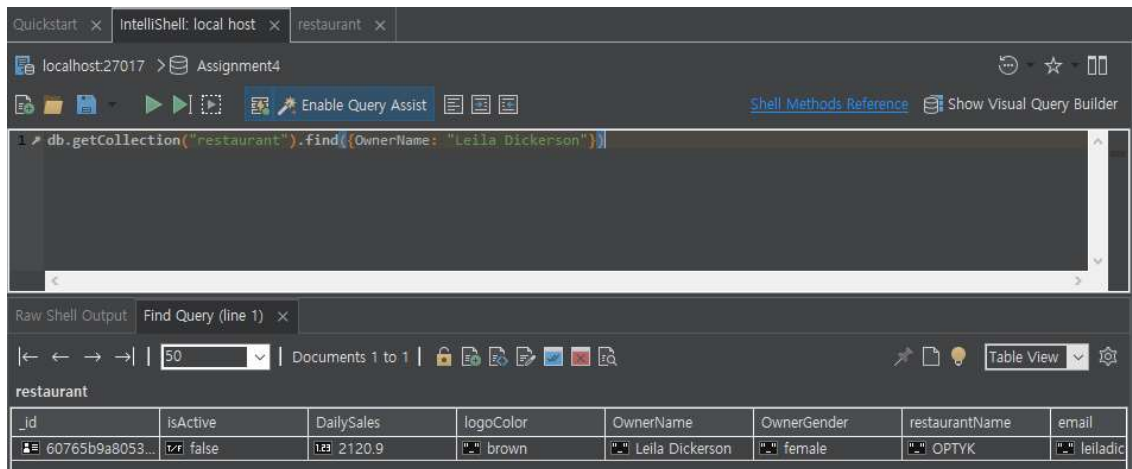
Output > restaurantName

_id	restaurantName	registered
60765b9a8053c5...	PETICULAR	2021-04-07T12:50:59 +04:00
60765b9b8053c5...	KNEEDLES	2021-04-07T09:43:12 +04:00
60765b9a8053c5...	KOZGENE	2021-04-07T05:20:07 +04:00

10.

Yes

```
db.getCollection("restaurant").find({OwnerName: "Leila Dickerson"})
```



IntelliShell: local host x restaurant x

localhost:27017 > Assignment4

Enable Query Assist

Shell Methods Reference Show Visual Query Builder

```
1 db.getCollection("restaurant").find({OwnerName: "Leila Dickerson"})
```

Raw Shell Output Find Query (line 1) x

← → | 50 | Documents 1 to 1 | Table View

restaurant

_id	isActive	DailySales	logoColor	OwnerName	OwnerGender	restaurantName	email
60765b9a8053c5...	false	2120.9	brown	Leila Dickerson	female	OPTYK	leiladic

11.

Yes. Only one restaurant

```
db.getCollection("restaurant").find({latitude: 40.48467})
```

The screenshot shows the IntelliJ Shell interface with a query executed in the 'restaurant' collection. The query is `db.getCollection("restaurant").find({latitude: 40.48467})`. The result is displayed in a table view below the 'Raw Shell Output' tab.

email	phone	address	registered	latitude	longitude	availableFruit	availableSalads
leiladickerson@...	+1 (924) 538-3...	665 Opal Court,...	2020-06-02T06...	40.48467	13.539483	strawberry	Greek

12.

1737

```
db.getCollection("restaurant").find({availableSalads: "Greek"}).count()
```

The screenshot shows the IntelliJ Shell interface with a query executed in the 'restaurant' collection. The query is `db.getCollection("restaurant").find({availableSalads: "Greek"}).count()`. The result is displayed in the 'Raw Shell Output' tab.

```
1 1737
2
```

13.

```
db.getCollection("restaurant").aggregate([
    {$project:{restaurantName:1, DailySales:1,
    availavaleFoods:1}},
    {$match:{availavaleFoods:"Sandwitch"}},
    {$sort:{DailySales:-1}},
    {$limit: 5}
])
```

The screenshot shows the MongoDB Shell interface. The query is: `db.getCollection("restaurant").aggregate([{$project:{restaurantName:1, DailySales:1, availavaleFoods:1}}, {$match:{availavaleFoods:"Sandwitch"}}, {$sort:{DailySales:-1}}, {$limit: 5}])`. The results are displayed in a table with 5 rows.

_id	DailySales	restaurantName	availavaleFoods
60765b9b8053c5...	3999.83	INTERODEO	Sandwitch
60765b9b8053c5...	3999.18	PETIGEMS	Sandwitch
60765b9b8053c5...	3999.0	SLOFAST	Sandwitch
60765b9a8053c5...	3998.84	MENBRAIN	Sandwitch
60765b9a8053c5...	3997.05	DEVILTOE	Sandwitch

14.

3014

```
db.getCollection("restaurant").find({availavaleFruit: "apple"}).count()
```

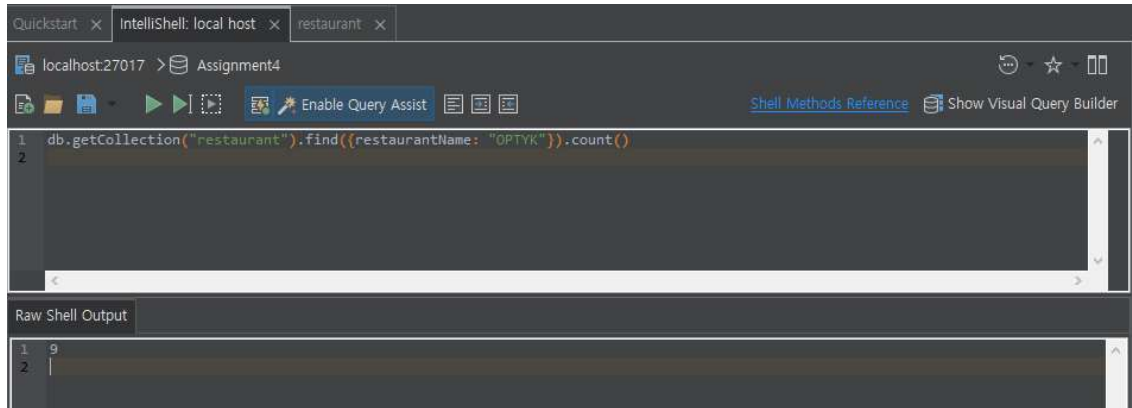
The screenshot shows the MongoDB Shell interface. The query is: `db.getCollection("restaurant").find({availavaleFruit: "apple"}).count()`. The result is displayed in the Raw Shell Output section as the number 3014.

3014

15.

Yes, there are 9 restaurants that are named "OPTYK"

```
db.getCollection("restaurant").find({restaurantName: "OPTYK"}).count()
```



The screenshot shows the IntelliJ Shell IDE interface. The top bar indicates the connection is to 'localhost:27017' and the database is 'Assignment4'. The main editor area contains the following MongoDB query:

```
1 db.getCollection("restaurant").find({restaurantName: "OPTYK"}).count()
2
```

Below the editor, the 'Raw Shell Output' panel displays the result of the query:

```
1 9
2
```