

EXPERIMENT 19

```
> use DBMS
< switched to db DBMS
> db.restaurants.insertOne({
  "address": {
    "building": "1007",
    "coord": [-73.856077, 40.848447],
    "street": "Morris Park Ave",
    "zipcode": "10462"
  },
  "borough": "Bronx",
  "cuisine": "Bakery",
  "grades": [
    {"date": new Date(1393804800000), "grade": "A", "score": 2},
    {"date": new Date(1378857600000), "grade": "A", "score": 6},
    {"date": new Date(1358985600000), "grade": "A", "score": 10},
    {"date": new Date(1322006400000), "grade": "A", "score": 9},
    {"date": new Date(1299715200000), "grade": "B", "score": 14}
  ],
  "name": "Morris Park Bake Shop",
  "restaurant_id": "30075445"
})
```

```
< {
  acknowledged: true,
  insertedId: ObjectId('6648b2822ba022877671bc57')
}
```

DBMS > |

1. Write a MongoDB query to find the restaurant Id, name, borough and cuisine for those restaurants which prepared dish except 'American' and 'Chinese' or restaurant's name begins with letter 'Wil'.

```
> db.restaurants.find({
  $or: [
    { cuisine: { $nin: ["American", "Chinese"] } },
    { name: { $regex: /^Wil/i } }
  ]
},
{
  restaurant_id: 1,
  name: 1,
  borough: 1,
  cuisine: 1,
  _id: 0
})
< {
  borough: 'Bronx',
  cuisine: 'Bakery',
  name: 'Morris Park Bake Shop',
  restaurant_id: '30075445'
}
```

2. Write a MongoDB query to find the restaurant Id, name, and grades for those restaurants which achieved a grade of "A" and scored 11 on an ISODate "2014-08 11T00:00:00Z"

```
> db.restaurants.find(
  {
    "grades": {
      $elemMatch: {
        "date": ISODate("2014-08-11T00:00:00Z"),
        "grade": "A",
        "score": 11
      }
    }
  },
  {
    "restaurant_id": 1,
    "name": 1,
    "grades": 1,
    "_id": 0
  }
)
```

among many of survey dates.

3. Write a MongoDB query to find the restaurant Id, name and grades for those restaurants where the 2nd element of grades array contains a grade of "A" and score 9 on an ISODate "2014-08-11T00:00:00Z".

```
> db.restaurants.find(
  {
    "grades.1.date": ISODate("2014-08-11T00:00:00Z"),
    "grades.1.grade": "A",
    "grades.1.score": 9
  },
  {
    "restaurant_id": 1,
    "name": 1,
    "grades": 1,
    "_id": 0
  }
)
```

<
DBMS > |

4. Write a MongoDB query to find the restaurant Id, name, address and geographical location for those restaurants where 2nd element of coord array contains a value which is more than 42 and upto 52.

```
> db.restaurants.find(
  {
    "address.coord.1": { $gt: 42, $lte: 52 }
  },
  {
    "restaurant_id": 1,
    "name": 1,
    "address": 1,
    "_id": 0
  }
)
<
DBMS>
```

5. Write a MongoDB query to arrange the name of the restaurants in ascending order along with all the columns.

```
> db.restaurants.find().sort({ "name": 1 })
< {
  _id: ObjectId('6648b2822ba022877671bc57'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
      grade: 'A',
      score: 2
    }
  ],
}
```

6. Write a MongoDB query to arrange the name of the restaurants in descending along with all the columns.

```
> db.restaurants.find().sort({ "name": -1 })
< {
  _id: ObjectId('6648b2822ba022877671bc57'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
```

7. Write a MongoDB query to arranged the name of the cuisine in ascending order and for that same cuisine borough should be in descending order.

```

> db.restaurants.find().sort({ "cuisine": 1, "borough": -1 })
< {
  _id: ObjectId('6648b2822ba022877671bc57'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
      grade: 'A',
      score: 2
    }
  ]
}

```

8. Write a MongoDB query to know whether all the addresses contains the street or not.

```

> db.restaurants.find({
  $and: [
    { "address.street": { $exists: true, $ne: null } },
    { "address.street": { $not: { $size: 0 } } }
  ]
}).count() === db.restaurants.count()
< DeprecationWarning: Collection.count() is deprecated. Use countDocuments or estimatedDocumentCount.
< true
DBMS> |

```

9. Write a MongoDB query which will select all documents in the restaurants collection where the coord field value is Double.

```

> db.restaurants.find({ "address.coord": { $type: "double" } })
< {
  _id: ObjectId('6648b2822ba022877671bc57'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
      grade: 'A',
      score: 2
    },
  ]
}

```

10. Write a MongoDB query which will select the restaurant Id, name and grades for those restaurants which returns 0 as a remainder after dividing the score by 7.

```

> db.restaurants.find(
  { $expr: { $eq: [{ $mod: ["$grades.score", 7] }, 0] } },
  { "restaurant_id": 1, "name": 1, "grades": 1, "_id": 0 }
)

```

11. Write a MongoDB query to find the restaurant name, borough, longitude and attitude and cuisine for those restaurants which contains 'mon' as three letters somewhere in its name.

```
> db.restaurants.find(
  { "name": { $regex: /mon/i } },
  {
    "name": 1,
    "borough": 1,
    "address.coord": 1,
    "cuisine": 1,
    "_id": 0
  }
)
<
DBMS >
```

12. Write a MongoDB query to find the restaurant name, borough, longitude and latitude and cuisine for those restaurants which contain 'Mad' as first three letters of its name.

```
> db.restaurants.find(
  { "name": { $regex: /^Mad/i } },
  {
    "name": 1,
    "borough": 1,
    "address.coord": 1,
    "cuisine": 1,
    "_id": 0
  }
)
<
DBMS > |
```


13. Write a MongoDB query to find the restaurants that have at least one grade with a score of less than 5.

```
> db.restaurants.find(
  { "grades": { $elemMatch: { "score": { $lt: 5 } } } }
)
< {
  _id: ObjectId('6648b2822ba022877671bc57'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
```

14. Write a MongoDB query to find the restaurants that have at least one grade with a score of less than 5 and that are located in the borough of Manhattan.

```
> db.restaurants.find({
  $and: [
    { "borough": "Manhattan" },
    { "grades": { $elemMatch: { "score": { $lt: 5 } } } }
  ]
})
<
DBMS> |
```

15. Write a MongoDB query to find the restaurants that have at least one grade with a score of less than 5 and that are located in the borough of Manhattan or Brooklyn.

```
> db.restaurants.find({
  $and: [
    { "borough": { $in: ["Manhattan", "Brooklyn"] } },
    { "grades": { $elemMatch: { "score": { $lt: 5 } } } }
  ]
})
<
DBMS >
```

16. Write a MongoDB query to find the restaurants that have at least one grade with a score of less than 5 and that are located in the borough of Manhattan or Brooklyn, and their cuisine is not American.

```
> db.restaurants.find({
  $and: [
    { "borough": { $in: ["Manhattan", "Brooklyn"] } },
    { "grades": { $elemMatch: { "score": { $lt: 5 } } } },
    { "cuisine": { $ne: "American" } }
  ]
})
<
DBMS >
```

17. Write a MongoDB query to find the restaurants that have at least one grade with a score of less than 5 and that are located in the borough of Manhattan or Brooklyn, and their cuisine is not American or Chinese.

```
> db.restaurants.find({
  $and: [
    { "borough": { $in: ["Manhattan", "Brooklyn"] } },
    { "grades": { $elemMatch: { "score": { $lt: 5 } } } },
    { "cuisine": { $nin: ["American", "Chinese"] } }
  ]
})
<
DBMS >
```

18. Write a MongoDB query to find the restaurants that have a grade with a score of 2 and a grade with a score of 6.

```
<
> db.restaurants.find({
  $and: [
    { "grades": { $elemMatch: { "score": 2 } } },
    { "grades": { $elemMatch: { "score": 6 } } }
  ]
})
< {
  _id: ObjectId('6648b2822ba022877671bc57'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Manhattan',
  cuisine: 'American',
  grades: [
    { score: 2 },
    { score: 6 }
  ],
  name: 'Morris Park Cafe',
  rating: 4.5
}
```

19. Write a MongoDB query to find the restaurants that have a grade with a score of 2 and a grade with a score of 6 and are located in the borough of Manhattan.

```
> db.restaurants.find({
  $and: [
    { "borough": "Manhattan" },
    { "grades": { $elemMatch: { "score": 2 } } },
    { "grades": { $elemMatch: { "score": 6 } } }
  ]
})
<
DBMS>
```

20. Write a MongoDB query to find the restaurants that have a grade with a score of 2 and a grade with a score of 6 and are located in the borough of Manhattan or Brooklyn.

```
> db.restaurants.find({
  $and: [
    { "borough": { $in: ["Manhattan", "Brooklyn"] } },
    { "grades": { $elemMatch: { "score": 2 } } },
    { "grades": { $elemMatch: { "score": 6 } } }
  ]
})
<
DBMS >
```

21. Write a MongoDB query to find the restaurants that have a grade with a score of 2 and a grade with a score of 6 and are located in the borough of Manhattan or Brooklyn, and their cuisine is not American.

```
> db.restaurants.find({
  $and: [
    { "borough": { $in: ["Manhattan", "Brooklyn"] } },
    { "grades": { $elemMatch: { "score": 2 } } },
    { "grades": { $elemMatch: { "score": 6 } } },
    { "cuisine": { $nin: ["American"] } }
  ]
})
<
DBMS >
```

22. Write a MongoDB query to find the restaurants that have a grade with a score of 2 and a grade with a score of 6 and are located in the borough of Manhattan or Brooklyn, and their cuisine is not American or Chinese.

```
> db.restaurants.find({
  $and: [
    { "borough": { $in: ["Manhattan", "Brooklyn"] } },
    { "grades": { $elemMatch: { "score": 2 } } },
    { "grades": { $elemMatch: { "score": 6 } } },
    { "cuisine": { $nin: ["American", "Chinese"] } }
  ]
})
<
DBMS >
```

23. Write a MongoDB query to find the restaurants that have a grade with a score of 2 or a grade with a score of 6.

```
> db.restaurants.find({
  $or: [
    { "grades": { $elemMatch: { "score": 2 } } },
    { "grades": { $elemMatch: { "score": 6 } } }
  ]
})
< {
  _id: ObjectId('6648b2822ba022877671bc57'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
```

EXPERIMENT 20

```
> db.movies.insertOne({
  "_id": ObjectId("573a1390f29313caabcd42e8"),
  "plot": "A group of bandits stage a brazen train hold-up, only to find a determined posse hot on their heels.",
  "genres": ["Short", "Western"],
  "runtime": 11,
  "cast": [
    "A.C. Abadie",
    "Gilbert M. 'Broncho Billy' Anderson",
    "George Barnes",
    "Justus D. Barnes"
  ]
})
< {
  acknowledged: true,
  insertedId: ObjectId('573a1390f29313caabcd42e8')
}
DBMS> |
```

1. Find all movies with full information from the 'movies' collection that released in the year 1893.

```
> db.movies.find({ "year": 1893 })
<
DBMS> |
```

2. Find all movies with full information from the 'movies' collection that have a runtime greater than 120 minutes.

```
> db.movies.find({ "runtime": { $gt: 120 } })
<
DBMS> |
```

3. Find all movies with full information from the 'movies' collection that have "Short" genre.

```
> db.movies.find({ "genres": "Short" })
< {
  _id: ObjectId('573a1390f29313caabcd42e8'),
  plot: 'A group of bandits stage a brazen train hold-up, only to find a determined posse hot on their heels.',
  genres: [
    'Short',
    'Western'
  ],
  runtime: 11,
  cast: [
    'A.C. Abadie',
    'Gilbert M. 'Broncho Billy' Anderson',
    'George Barnes',
    'Justus D. Barnes'
  ]
}
DBMS> |
```

4. Retrieve all movies from the 'movies' collection that were directed by "William K.L. Dickson" and include complete information for each movie.

```
> db.movies.find({ "director": "William K.L. Dickson" })  
<  
DBMS> |
```

5. Retrieve all movies from the 'movies' collection that were released in the USA and include complete information for each movie.

```
> db.movies.find({ "country": "USA" })  
<  
DBMS>
```

6. Retrieve all movies from the 'movies' collection that have complete information and are rated as "UNRATED".

```
> db.movies.find({ "rating": "UNRATED" })  
<  
DBMS>
```

7. Retrieve all movies from the 'movies' collection that have complete information and have received more than 1000 votes on IMDb.

```
> db.movies.find({ "imdb_votes": { $gt: 1000 } })  
<  
DBMS>
```

8. Retrieve all movies from the 'movies' collection that have complete information and have an IMDb rating higher than 7.

```
> db.movies.find({ "imdb_rating": { $gt: 7 } })  
<  
DBMS> |
```

9. Retrieve all movies from the 'movies' collection that have complete information and have a viewer rating higher than 4 on Tomatoes.

```
> db.movies.find({ "tomato_viewer_rating": { $gt: 4 } })  
<  
DBMS> |
```

10. Retrieve all movies from the 'movies' collection that have received an award.

```
> db.movies.find({ "awards": { $exists: true, $ne: null } })  
<  
DBMS> |
```


11. Find all movies with title, languages, released, directors, writers, awards, year, genres, runtime, cast, countries from the 'movies' collection in MongoDB that have at least one nomination.

```
> db.movies.find(
  { "awards.nominations": { $gt: 0 } }, // Find movies with at least one nomination
  {
    "title": 1,
    "languages": 1,
    "released": 1,
    "directors": 1,
    "writers": 1,
    "awards": 1,
    "year": 1,
    "genres": 1,
    "runtime": 1,
    "cast": 1,
    "countries": 1,
    "_id": 0 // Exclude the default _id field
  }
)
<
DBMS >
```

12. Find all movies with title, languages, released, directors, writers, awards, year, genres, runtime, cast, countries from the 'movies' collection in MongoDB with cast including "Charles Kayser".


```

> db.movies.find(
  { "cast": "Charles Kayser" }, // Filter movies with Charles Kayser in the cast
  {
    "title": 1,
    "languages": 1,
    "released": 1,
    "directors": 1,
    "writers": 1,
    "awards": 1,
    "year": 1,
    "genres": 1,
    "runtime": 1,
    "cast": 1,
    "countries": 1,
    "_id": 0 // Exclude the default _id field
  }
)
<
DBMS >

```

13. Retrieve all movies with title, languages, released, directors, writers, countries from the 'movies' collection in MongoDB that released on May 9, 1893.

```

> db.movies.find(
  { "released": ISODate("1893-05-09") }, // Filter movies released on May 9, 1893
  {
    "title": 1,
    "languages": 1,
    "released": 1,
    "directors": 1,
    "writers": 1,
    "countries": 1,
    "_id": 0 // Exclude the default _id field
  }
)
<
DBMS >

```

14. Retrieve all movies with title, languages, released, directors, writers, countries from the 'movies' collection in MongoDB that have a word "scene" in the title.

```
> db.movies.find(
  { "title": { $regex: /scene/i } }, // Filter movies with "scene" in the title
  {
    "title": 1,
    "languages": 1,
    "released": 1,
    "directors": 1,
    "writers": 1,
    "countries": 1,
    "_id": 0 // Exclude the default _id field
  }
)
<
DBMS >
```