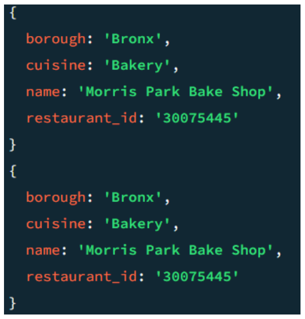
EXERCISE 18

Structure of 'restaurants' collection:

```
{
 "address": {
   "building": "1007",
   "coord": [ -73.856077, 40.848447 ],
   "street": "Morris Park Ave",
   "zipcode": "10462"
 },
 "borough": "Bronx",
 "cuisine": "Bakery",
 "grades": [
   { "date": { "$date": 1393804800000 }, "grade": "A", "score": 2 },
   { "date": { "$date": 1378857600000 }, "grade": "A", "score": 6 },
   { "date": { "$date": 1358985600000 }, "grade": "A", "score": 10 },
   { "date": { "$date": 1322006400000 }, "grade": "A", "score": 9 },
   { "date": { "$date": 1299715200000 }, "grade": "B", "score": 14 }
 ],
 "name": "Morris Park Bake Shop",
 "restaurant_id": "30075445"
}
```

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

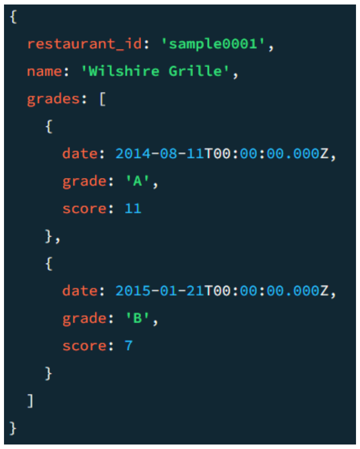
```
db.restaurants.find(
  {
    $or: [
      { cuisine: { $nin: ['American', 'Chinese'] } },
      { name: { $regex: /^Wil/ } }
    ]
  },
  { restaurant_id: 1, name: 1, borough: 1, cuisine: 1, _id: 0 }
);
```



```
{
  borough: 'Bronx',
  cuisine: 'Bakery',
  name: 'Morris Park Bake Shop',
  restaurant_id: '30075445'
}
{
  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" among many of survey dates..

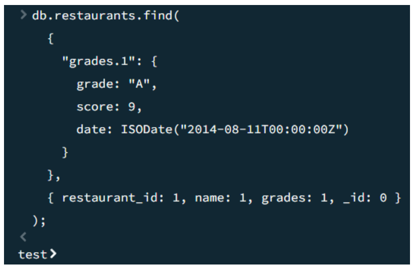
```
db.restaurants.find(
  {
    grades: {
      $elemMatch: {
        grade: "A",
        score: 11,
        date: ISODate("2014-08-11T00:00:00Z")
      }
    }
  },
  { restaurant_id: 1, name: 1, grades: 1, _id: 0 }
);
```



```
{
  restaurant_id: 'sample0001',
  name: 'Wilshire Grille',
  grades: [
    {
      date: 2014-08-11T00:00:00.000Z,
      grade: 'A',
      score: 11
    },
    {
      date: 2015-01-21T00:00:00.000Z,
      grade: 'B',
      score: 7
    }
  ]
}
```

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".

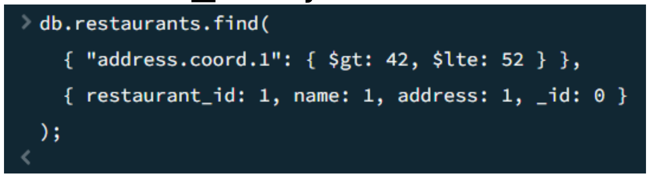
```
db.restaurants.find(
  {
    "grades.1": {
      grade: "A",
      score: 9,
      date: ISODate("2014-08-11T00:00:00Z")
    }
  },
  { restaurant_id: 1, name: 1, grades: 1, _id: 0 }
);
```



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

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..

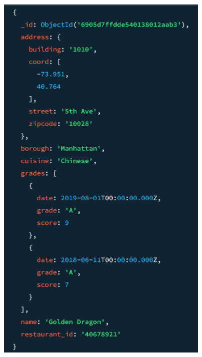
```
db.restaurants.find(
  { "address.coord.1": { $gt: 42, $lte: 52 } },
  { restaurant_id: 1, name: 1, address: 1, _id: 0 }
);
```



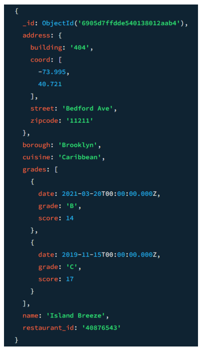
```
> db.restaurants.find(
    { "address.coord.1": { $gt: 42, $lte: 52 } },
    { restaurant_id: 1, name: 1, address: 1, _id: 0 }
  );
<
```

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 });
```



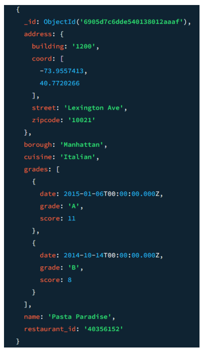
```
{
  _id: ObjectId('6905d7ffdde540138012aab3'),
  address: {
    building: '1010',
    coord: [
      -73.951,
      40.764
    ],
    street: '5th Ave',
    zipcode: '10028'
  },
  borough: 'Manhattan',
  cuisine: 'Chinese',
  grades: [
    {
      date: 2019-08-01T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
    {
      date: 2018-06-11T00:00:00.000Z,
      grade: 'A',
      score: 7
    }
  ],
  name: 'Golden Dragon',
  restaurant_id: '40678921'
}
```



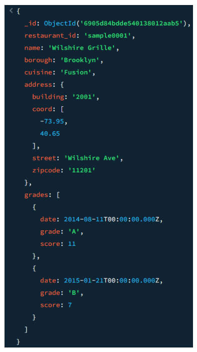
```
{
  _id: ObjectId('6905d7ffdde540138012aab4'),
  address: {
    building: '404',
    coord: [
      -73.995,
      40.721
    ],
    street: 'Bedford Ave',
    zipcode: '11211'
  },
  borough: 'Brooklyn',
  cuisine: 'Caribbean',
  grades: [
    {
      date: 2021-03-20T00:00:00.000Z,
      grade: 'B',
      score: 14
    },
    {
      date: 2019-11-15T00:00:00.000Z,
      grade: 'C',
      score: 17
    }
  ],
  name: 'Island Breeze',
  restaurant_id: '40876543'
}
```

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 });



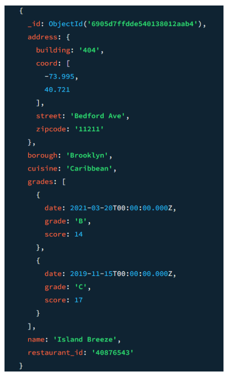
```
{
  _id: ObjectId('6905d7c6dde540138012aaaf'),
  address: {
    building: '1200',
    coord: [
      -73.9557413,
      40.7720266
    ],
    street: 'Lexington Ave',
    zipcode: '10021'
  },
  borough: 'Manhattan',
  cuisine: 'Italian',
  grades: [
    {
      date: 2015-01-06T00:00:00.000Z,
      grade: 'A',
      score: 11
    },
    {
      date: 2014-10-14T00:00:00.000Z,
      grade: 'B',
      score: 8
    }
  ],
  name: 'Pasta Paradise',
  restaurant_id: '40356152'
}
```



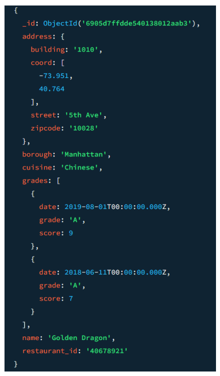
```
< {
    _id: ObjectId('6905d84bdde540138012aab5'),
    restaurant_id: 'sample0001',
    name: 'Wilshire Grille',
    borough: 'Brooklyn',
    cuisine: 'Fusion',
    address: {
      building: '2001',
      coord: [
        -73.95,
        40.65
      ],
      street: 'Wilshire Ave',
      zipcode: '11201'
    },
    grades: [
      {
        date: 2014-08-11T00:00:00.000Z,
        grade: 'A',
        score: 11
      },
      {
        date: 2015-01-21T00:00:00.000Z,
        grade: 'B',
        score: 7
      }
    ]
  }
```

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 });



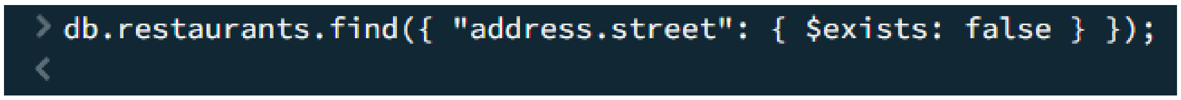
```
{
  _id: ObjectId('6905d7ffdde540138012aab4'),
  address: {
    building: '404',
    coord: [
      -73.995,
      40.721
    ],
    street: 'Bedford Ave',
    zipcode: '11211'
  },
  borough: 'Brooklyn',
  cuisine: 'Caribbean',
  grades: [
    {
      date: 2021-03-20T00:00:00.000Z,
      grade: 'B',
      score: 14
    },
    {
      date: 2019-11-15T00:00:00.000Z,
      grade: 'C',
      score: 17
    }
  ],
  name: 'Island Breeze',
  restaurant_id: '40876543'
}
```



```
{
  _id: ObjectId('6905d7ffdde540138012aab3'),
  address: {
    building: '1010',
    coord: [
      -73.951,
      40.764
    ],
    street: '5th Ave',
    zipcode: '10028'
  },
  borough: 'Manhattan',
  cuisine: 'Chinese',
  grades: [
    {
      date: 2019-08-01T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
    {
      date: 2018-06-11T00:00:00.000Z,
      grade: 'A',
      score: 7
    }
  ],
  name: 'Golden Dragon',
  restaurant_id: '40678921'
}
```

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

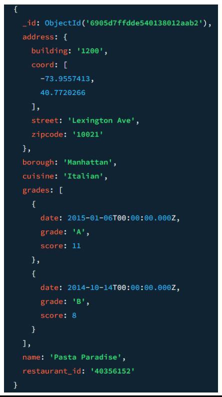
db.restaurants.find({ "address.street": { $exists: false } });



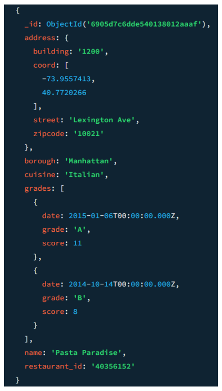
```
> db.restaurants.find({ "address.street": { $exists: false } });
<
```

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" } }
);
```



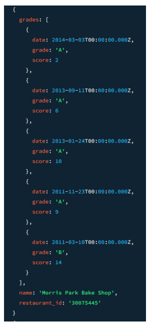
```
{
  _id: ObjectId('6905d7ffdde540138012aab2'),
  address: {
    building: '1200',
    coord: [
      -73.9557413,
      40.7720266
    ],
    street: 'Lexington Ave',
    zipcode: '10021'
  },
  borough: 'Manhattan',
  cuisine: 'Italian',
  grades: [
    {
      date: 2015-01-06T00:00:00.000Z,
      grade: 'A',
      score: 11
    },
    {
      date: 2014-10-14T00:00:00.000Z,
      grade: 'B',
      score: 8
    }
  ],
  name: 'Pasta Paradise',
  restaurant_id: '40356152'
}
```



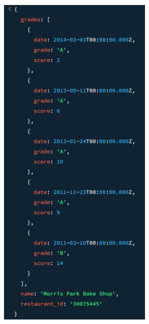
```
{
  _id: ObjectId('6905d7c6dde540138012aaaf'),
  address: {
    building: '1200',
    coord: [
      -73.9557413,
      40.7720266
    ],
    street: 'Lexington Ave',
    zipcode: '10021'
  },
  borough: 'Manhattan',
  cuisine: 'Italian',
  grades: [
    {
      date: 2015-01-06T00:00:00.000Z,
      grade: 'A',
      score: 11
    },
    {
      date: 2014-10-14T00:00:00.000Z,
      grade: 'B',
      score: 8
    }
  ],
  name: 'Pasta Paradise',
  restaurant_id: '40356152'
}
```

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.

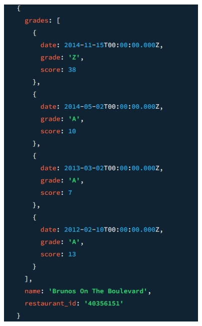
```
db.restaurants.find(
  { "grades.score": { $mod: [7, 0] } },
  { restaurant_id: 1,
name: 1, grades: 1, _id: 0 }
);
```



```
{
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
      grade: 'A',
      score: 2
    },
    {
      date: 2013-09-11T00:00:00.000Z,
      grade: 'A',
      score: 6
    },
    {
      date: 2013-01-24T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2011-11-23T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
    {
      date: 2011-03-10T00:00:00.000Z,
      grade: 'B',
      score: 14
    }
  ],
  name: 'Morris Park Bake Shop',
  restaurant_id: '30075445'
}
```



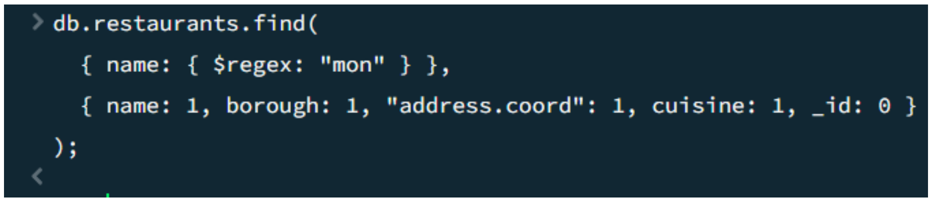
```
< {
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
      grade: 'A',
      score: 2
    },
    {
      date: 2013-09-11T00:00:00.000Z,
      grade: 'A',
      score: 6
    },
    {
      date: 2013-01-24T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2011-11-23T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
    {
      date: 2011-03-10T00:00:00.000Z,
      grade: 'B',
      score: 14
    }
  ],
  name: 'Morris Park Bake Shop',
  restaurant_id: '30075445'
}
```



```
{
  grades: [
    {
      date: 2014-11-15T00:00:00.000Z,
      grade: 'Z',
      score: 38
    },
    {
      date: 2014-05-02T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2013-03-02T00:00:00.000Z,
      grade: 'A',
      score: 7
    },
    {
      date: 2012-02-10T00:00:00.000Z,
      grade: 'A',
      score: 13
    }
  ],
  name: 'Brunos On The Boulevard',
  restaurant_id: '40356151'
}
```

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.

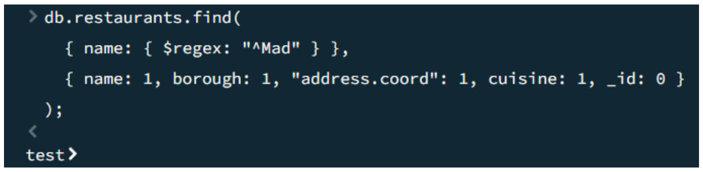
```
db.restaurants.find(
  { name: { $regex: "mon" } },
  { name: 1, borough: 1, "address.coord": 1, cuisine: 1, _id: 0 }
);
```



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

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.

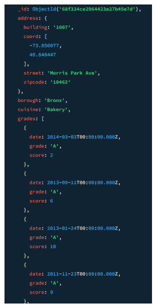
```
db.restaurants.find(
  { name: { $regex: "^Mad" } },
  { name: 1, borough: 1, "address.coord": 1, cuisine: 1, _id: 0 }
);
```



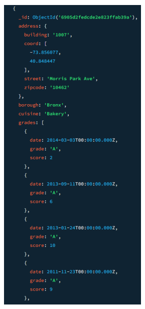
```
> db.restaurants.find(
    { name: { $regex: "^Mad" } },
    { name: 1, borough: 1, "address.coord": 1, cuisine: 1, _id: 0 }
  );
<
test>
```

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.score": { $lt: 5 } }
);
```



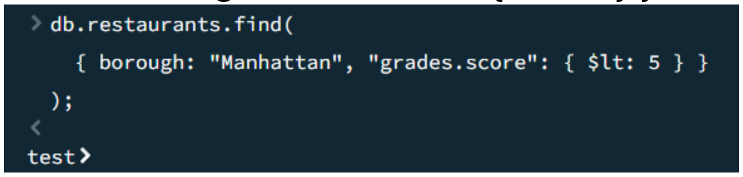
```
  _id: ObjectId('68f334ce2964423e27b45e7d'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
      grade: 'A',
      score: 2
    },
    {
      date: 2013-09-11T00:00:00.000Z,
      grade: 'A',
      score: 6
    },
    {
      date: 2013-01-24T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2011-11-23T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
```



```
{
  _id: ObjectId('6905d2fedcde2e823ffab39a'),
  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
    },
    {
      date: 2013-09-11T00:00:00.000Z,
      grade: 'A',
      score: 6
    },
    {
      date: 2013-01-24T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2011-11-23T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
```

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.

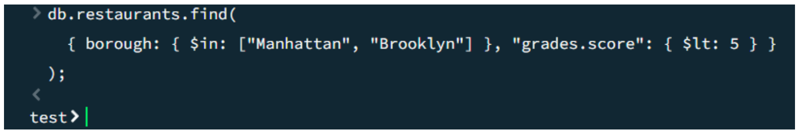
```
db.restaurants.find(
  { borough: "Manhattan", "grades.score": { $lt: 5 } }
);
```



```
> db.restaurants.find(
    { borough: "Manhattan", "grades.score": { $lt: 5 } }
  );
<
test>
```

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.

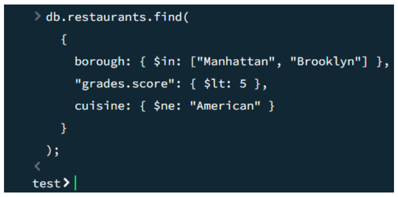
```
db.restaurants.find(
  { borough: { $in: ["Manhattan", "Brooklyn"] }, "grades.score": { $lt:
5 } }
);
```



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

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.

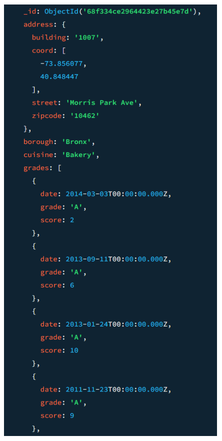
```
db.restaurants.find(
  {
    borough: { $in: ["Manhattan", "Brooklyn"] },
    "grades.score": { $lt: 5 },
    cuisine: { $ne: "American" }
  }
);
```



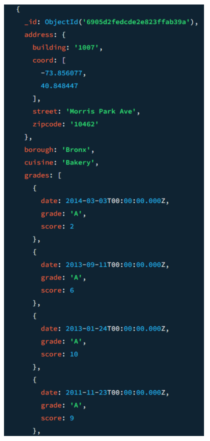
```
> db.restaurants.find(
    {
      borough: { $in: ["Manhattan", "Brooklyn"] },
      "grades.score": { $lt: 5 },
      cuisine: { $ne: "American" }
    }
  );
<
test>
```

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(
  {
    grades: {
      $all: [
        { $elemMatch: { score: 2 } },
        { $elemMatch: { score: 6 } }
      ]
    }
  }
);
```



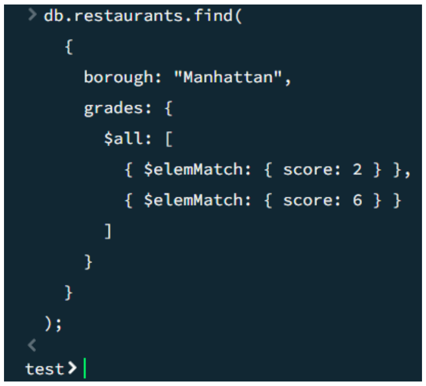
```
  _id: ObjectId('68f334ce2964423e27b45e7d'),
  address: {
    building: '1007',
    coord: [
      -73.856077,
      40.848447
    ],
    street: 'Morris Park Ave',
    zipcode: '10462'
  },
  borough: 'Bronx',
  cuisine: 'Bakery',
  grades: [
    {
      date: 2014-03-03T00:00:00.000Z,
      grade: 'A',
      score: 2
    },
    {
      date: 2013-09-11T00:00:00.000Z,
      grade: 'A',
      score: 6
    },
    {
      date: 2013-01-24T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2011-11-23T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
```



```
{
  _id: ObjectId('6905d2fedcde2e823ffab39a'),
  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
    },
    {
      date: 2013-09-11T00:00:00.000Z,
      grade: 'A',
      score: 6
    },
    {
      date: 2013-01-24T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2011-11-23T00:00:00.000Z,
      grade: 'A',
      score: 9
    },
```

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.

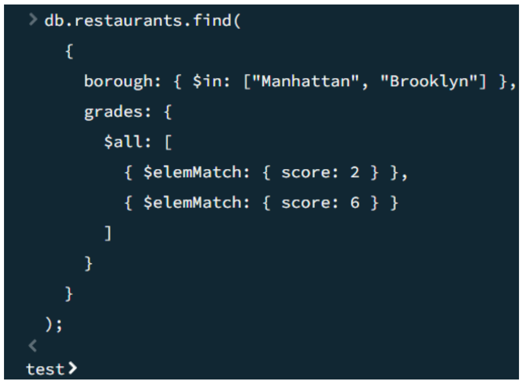
```
db.restaurants.find(
 {
   borough: "Manhattan",
   grades: {
     $all: [
       { $elemMatch: { score: 2 } },
       { $elemMatch: { score: 6 } }
     ]
   }
 }
);
```



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

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.

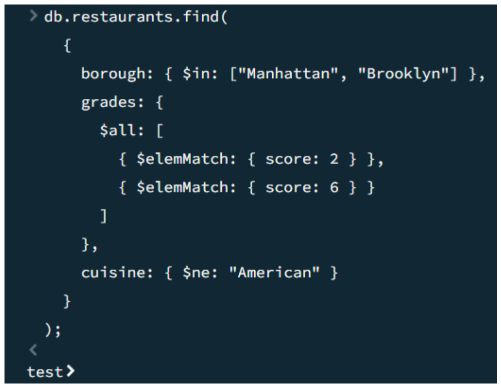
```
db.restaurants.find(
 {
   borough: { $in: ["Manhattan", "Brooklyn"] },
   grades: {
     $all: [
       { $elemMatch: { score: 2 } },
       { $elemMatch: { score: 6 } }
     ]
   }
 }
);
```



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

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.

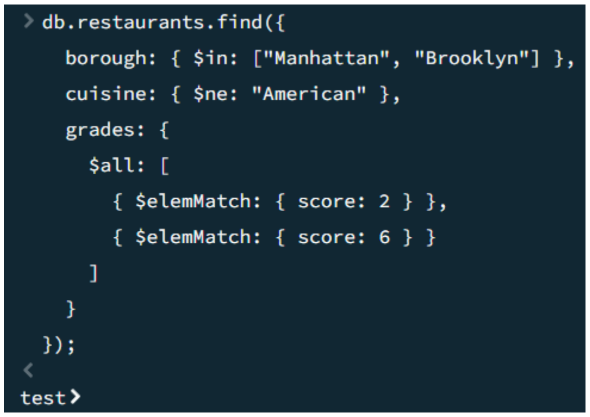
```
db.restaurants.find(
  {
    borough: { $in: ["Manhattan", "Brooklyn"] },
    grades: {
      $all: [
        { $elemMatch: { score: 2 } },
        { $elemMatch: { score: 6 } }
      ]
    },
    cuisine: { $ne: "American" }
  }
);
```



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

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.

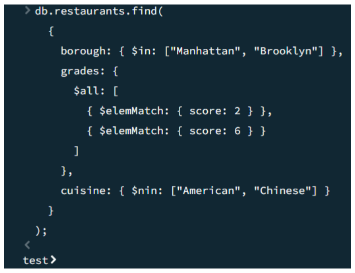
```
db.restaurants.find({
  borough: { $in: ["Manhattan", "Brooklyn"] },
  cuisine: { $ne: "American" },
  grades: {
    $all: [
      { $elemMatch: { score: 2 } },
      { $elemMatch: { score: 6 } }
    ]
  }
});
```



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

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.

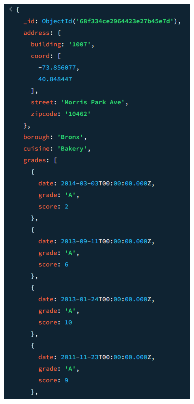
```
db.restaurants.find(
  {
    borough: { $in: ["Manhattan", "Brooklyn"] },
    grades: {
      $all: [
        { $elemMatch: { score: 2 } },
        { $elemMatch: { score: 6 } }
      ]
    },
    cuisine: { $nin: ["American", "Chinese"] }
  }
);
```



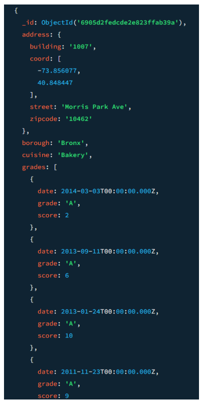
```
> db.restaurants.find(
    {
      borough: { $in: ["Manhattan", "Brooklyn"] },
      grades: {
        $all: [
          { $elemMatch: { score: 2 } },
          { $elemMatch: { score: 6 } }
        ]
      },
      cuisine: { $nin: ["American", "Chinese"] }
    }
  );
<
test>
```

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(
  {
    grades: {
      $elemMatch: { score: { $in: [2, 6] } }
    }
  }
);
```



```
< {
    _id: ObjectId('68f334ce2964423e27b45e7d'),
    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
      },
      {
        date: 2013-09-11T00:00:00.000Z,
        grade: 'A',
        score: 6
      },
      {
        date: 2013-01-24T00:00:00.000Z,
        grade: 'A',
        score: 10
      },
      {
        date: 2011-11-23T00:00:00.000Z,
        grade: 'A',
        score: 9
      },
```



```
{
  _id: ObjectId('6905d2fedcde2e823ffab39a'),
  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
    },
    {
      date: 2013-09-11T00:00:00.000Z,
      grade: 'A',
      score: 6
    },
    {
      date: 2013-01-24T00:00:00.000Z,
      grade: 'A',
      score: 10
    },
    {
      date: 2011-11-23T00:00:00.000Z,
      grade: 'A',
      score: 9
```

Evaluation Procedure	**Marks awarded**
MONGODB Procedure(5)	
Program/Execution (5)	
Viva(5)	
Total (15)	
Faculty Signature	