Title: MongoDB Queries

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RESTAURANTS COLLECTION QUERIES

1. **Find restaurants that do not serve 'American' or 'Chinese' cuisine or whose name starts with 'Wil':**

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

Output :

restaurant_id	name	borough	cuisine
4001	Wilshire Grill	Manhattan	Italian
4002	Willa's Place	Brooklyn	Mediterranean
4003	Deli Delight	Queens	Japanese

2. **Find restaurants with grade 'A', score 11 on ISODate '2014-08-11':**

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

Output :

restaurant_id	name	grades
1001	Gourmet Bistro	[{ grade: "A", score: 11, date: ISODate("2014-08-11T00:00:00Z") }, ...]

3. **Find restaurants where the 2nd grade is 'A' with a score of 9 on ISODate '2014-08-11':**

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

Output :

restaurant_id	name	grades
2001	Spice Haven	[{ grade: "B", score: 8, date: ISODate("2014-07-11T00:00:00Z") }, { grade: "A", score: 9, date: ISODate("2014-08-11T00:00:00Z") }, ...]

4. **Find restaurants where the 2nd coordinate is between 42 and 52:**

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

Output :

restaurant_id	name	address	coord
3001	Bistro Central	{ street: "123 Main St", coord: [40.73061, 45.12345] }	[40.73061, 45.12345]
3002	City Eats	{ street: "456 Elm St", coord: [40.73061, 47.65432] }	[40.73061, 47.65432]

5. **Arrange restaurants by name in ascending order:**

```
db.restaurants.find().sort({ name: 1 });
```

Output Example:

restaurant_id	name	borough	cuisine
4003	Deli Delight	Queens	Japanese
4001	Wilshire Grill	Manhattan	Italian
4002	Willa's Place	Brooklyn	Mediterranean

6. **Arrange restaurants by name in descending order:**

```
db.restaurants.find().sort({ name: -1 });
```

Output :

restaurant_id	name	borough	cuisine
4002	Willa's Place	Brooklyn	Mediterranean
4001	Wilshire Grill	Manhattan	Italian
4003	Deli Delight	Queens	Japanese

7. **Arrange cuisines in ascending order and boroughs in descending order:**

```
db.restaurants.find().sort({ cuisine: 1, borough: -1 });
```

Output :

restaurant_id	name	borough	cuisine
4002	Willa's Place	Brooklyn	Mediterranean
4001	Wilshire Grill	Manhattan	Italian
4003	Deli Delight	Queens	Japanese

8. **Check if all addresses contain a street:**

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

Output :

restaurant_id	name	address
1001	Gourmet Bistro	{ street: "123 Elm St" }
1002	Spice Haven	{ street: "456 Oak St" }
1003	City Eats	{ street: "789 Pine St" }

9. **Find all documents where 'coord' field values are Double:**

```
db.restaurants.find({ "address.coord": { $type: "double" } });
```

Output :

restaurant_id	name	address
3001	Bistro Central	{ street: "123 Main St", coord: [40.73061, 45.12345] }
3002	City Eats	{ street: "456 Elm St", coord: [40.73061, 47.65432] }

10. **Find restaurants with scores divisible by 7:**

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

Output :

restaurant_id	name	grades
5001	Healthy Eats	[{ grade: "B", score: 14, date: ISODate("2015-01-01T00:00:00Z") }, ...]
5002	Fresh Bites	[{ grade: "A", score: 21, date: ISODate("2016-06-01T00:00:00Z") }, ...]

11. **Find restaurants where name contains 'mon':**

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

Output :

restaurant_id	name	borough	cuisine	address.coord
6001	Common Grounds	Manhattan	American	[40.73061, 45.12345]
6002	Lemon Grove	Brooklyn	Mediterranean	[40.73061, 47.65432]

12. **Find restaurants where name starts with 'Mad':**

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

Output :

restaurant_id	name	borough	cuisine	address.coord
7001	Mad Hatter	Manhattan	British	[40.73061, 45.12345]
7002	Mad Max	Brooklyn	Australian	[40.73061, 47.65432]

13. **Find restaurants with at least one grade score < 5:**

```
db.restaurants.find({
  "grades.score": { $lt: 5 }
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	grades
8001	Basic Eats	[{ grade: "C", score: 4, date: ISODate("2020-01-01T00:00:00Z") }, ...]
8002	Simple Bites	[{ grade: "B", score: 3, date: ISODate("2021-02-01T00:00:00Z") }, ...]

14. **Find restaurants with grade score < 5 in Manhattan:**

```
db.restaurants.find({
  borough: "Manhattan",
  "grades.score": { $lt: 5 }
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	grades
9001	Quick Eats	[{ grade: "D", score: 4, date: ISODate("2022-03-01T00:00:00Z") }, ...]
9002	New Delights	[{ grade: "C", score: 2, date: ISODate("2023-04-01T00:00:00Z") }, ...]

15. **Find restaurants with grade score < 5 in Manhattan or Brooklyn:**

```
db.restaurants.find({
  borough: { $in: ["Manhattan", "Brooklyn"] },
  "grades.score": { $lt: 5 }
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output Example:

restaurant_id	name	borough	grades
10001	City Fast Food	Manhattan	[{ grade: "D", score: 4, date: ISODate("2022-05-01T00:00:00Z") }, ...]
10002	Brooklyn Eats	Brooklyn	[{ grade: "C", score: 3, date: ISODate("2023-06-01T00:00:00Z") }, ...]

16. **Find restaurants with grade score < 5 in Manhattan or Brooklyn, excluding American cuisine:**

```
db.restaurants.find({
  borough: { $in: ["Manhattan", "Brooklyn"] },
  "grades.score": { $lt: 5 },
  cuisine: { $ne: "American" }
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	borough	cuisine	grades
11001	Pasta Place	Manhattan	Italian	[{ grade: "D", score: 4, date: ISODate("2022-07-01T00:00:00Z") }, ...]
11002	Green Leaf	Brooklyn	Vegetarian	[{ grade: "C", score: 3, date: ISODate("2023-08-01T00:00:00Z") }, ...]

17. **Find restaurants with grade score < 5 in Manhattan or Brooklyn, excluding American and Chinese cuisine:**

```
db.restaurants.find({
  borough: { $in: ["Manhattan", "Brooklyn"] },
  "grades.score": { $lt: 5 },
  cuisine: { $nin: ["American", "Chinese"] }
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	borough	cuisine	grades
12001	Fresh Bites	Manhattan	Mediterranean	[{ grade: "D", score: 4, date: ISODate("2022-09-01T00:00:00Z") }, ...]
12002	Vegan Delight	Brooklyn	Vegan	[{ grade: "C", score: 3, date: ISODate("2023-10-01T00:00:00Z") }, ...]

18. **Find restaurants with a grade score of 2 and a grade score of 6:**

```
db.restaurants.find({
  $and: [
    { "grades.score": 2 },
    { "grades.score": 6 }
  ]
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	grades
13001	Best Bites	[{ grade: "D", score: 2, date: ISODate("2023-11-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2024-01-01T00:00:00Z") }]

19. **Find restaurants with grade score 2 and 6 located in Manhattan:**

```
db.restaurants.find({
  borough: "Manhattan",
  $and: [
    { "grades.score": 2 },
    { "grades.score": 6 }
  ]
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	grades
14001	Central Eats	[{ grade: "D", score: 2, date: ISODate("2023-12-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2024-02-01T00:00:00Z") }]

20. **Find restaurants with grade score 2 and 6 in Manhattan or Brooklyn:**

```
db.restaurants.find({
  borough: { $in: ["Manhattan", "Brooklyn"] },
  $and: [
    { "grades.score": 2 },
    { "grades.score": 6 }
  ]
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	borough	grades
15001	Urban Eats	Manhattan	[{ grade: "D", score: 2, date: ISODate("2024-03-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2024-04-01T00:00:00Z") }]
15002	Downtown Deli	Brooklyn	[{ grade: "D", score: 2, date: ISODate("2024-05-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2024-06-01T00:00:00Z") }]

21. **Find restaurants with grade score 2 and 6 in Manhattan or Brooklyn, excluding American cuisine:**

```
db.restaurants.find({
  borough: { $in: ["Manhattan", "Brooklyn"] },
  $and: [
    { "grades.score": 2 },
    { "grades.score": 6 }
  ],
  cuisine: { $ne: "American" }
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	borough	cuisine	grades
16001	Italian Bistro	Manhattan	Italian	[{ grade: "D", score: 2, date: ISODate("2024-07-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2024-08-01T00:00:00Z") }]
16002	Vegan Haven	Brooklyn	Vegan	[{ grade: "D", score: 2, date: ISODate("2024-09-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2024-10-01T00:00:00Z") }]

22. **Find restaurants with grade score 2 and 6 in Manhattan or Brooklyn, excluding American and Chinese cuisine:**

```
db.restaurants.find({
  borough: { $in: ["Manhattan", "Brooklyn"] },
  $and: [
    { "grades.score": 2 },
    { "grades.score": 6 }
  ],
  cuisine: { $nin: ["American", "Chinese"] }
}, { restaurant_id: 1, name: 1, grades: 1 });
```

Output :

restaurant_id	name	borough	cuisine	grades
17001	Mediterranean	Brooklyn	Mediterranean	[{ grade: "D", score: 2, date: ISODate("2024-11-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2024-12-01T00:00:00Z") }]
17002	Fresh Eats	Manhattan	Vegan	[{ grade: "D", score: 2, date: ISODate("2025-01-01T00:00:00Z") }, { grade: "C", score: 6, date: ISODate("2025-02-01T00:00:00Z") }]

MOVIES COLLECTION QUERIES:

1. **Find movies released in 1893:**

```
db.movies.find({ year: 1893 });
```

Output :

title	year	genres	released	directors
The Arrival of a Train	1893	Short	ISODate("1893-01-01T00:00:00Z")	Louis Le Prince

2. **Find movies with runtime greater than 120 minutes:**

```
db.movies.find({ runtime: { $gt: 120 } });
```

Output :

title	runtime	genres	released	directors
Epic Adventure	150	Action, Drama	ISODate("2020-06-01T00:00:00Z")	John Doe
Extended Cut	180	Sci-Fi, Fantasy	ISODate("2022-11-01T00:00:00Z")	Jane Smith

3. **Find movies with genre 'Short':**

```
db.movies.find({ genres: "Short" });
```

Output :

title	genres	year	runtime	released	directors
The Brief Encounter	Short	2021	15	ISODate("2021-07-01T00:00:00Z")	Alice Johnson

4. **Find movies directed by 'William K.L. Dickson':**

```
db.movies.find({ directors: "William K.L. Dickson" });
```

Output :

title	directors	year	genres	released
The Kinetoscopic Record	William K.L. Dickson	1894	Short	ISODate("1894-01-01T00:00:00Z")
Roundhay Garden Scene	William K.L. Dickson	1888	Short	ISODate("1888-10-14T00:00:00Z")

5. **Find movies released in the USA:**

```
db.movies.find({ countries: "USA" });
```

Output :

title	countries	year	genres	released
American Dream	USA	2022	Drama	ISODate("2022-05-01T00:00:00Z")
Hollywood Nights	USA	2021	Thriller	ISODate("2021-08-15T00:00:00Z")

6. **Find movies rated 'UNRATED':**

```
db.movies.find({ rated: "UNRATED" });
```

Output :

title	rated	year	genres	released
The Untitled Project	UNRATED	2023	Drama	ISODate("2023-12-01T00:00:00Z")
Experimental Film	UNRATED	2022	Experimental	ISODate("2022-09-01T00:00:00Z")

7. **Find movies with more than 1000 votes on IMDb:**

```
db.movies.find({ "imdb.votes": { $gt: 1000 } });
```

Output :

title	imdb.votes	year	genres	released
Blockbuster Hit	1500	2023	Action	ISODate("2023-07-01T00:00:00Z")
Top Rated Film	2000	2022	Drama	ISODate("2022-11-01T00:00:00Z")

8. **Find movies with IMDb rating higher than 7:**

```
db.movies.find({ "imdb.rating": { $gt: 7 } });
```

Output :

title	imdb.rating	year	genres	released
Great Film	8.5	2024	Action	ISODate("2024-03-01T00:00:00Z")
Excellent Movie	9.2	2023	Drama	ISODate("2023-09-01T00:00:00Z")

9. **Find movies with viewer rating higher than 4 on Tomatoes:**

```
db.movies.find({ "tomatoes.viewer.rating": { $gt: 4 } });
```

Output :

title	tomatoes.viewer .rating	year	genres	released
Must-Watch Film	4.5	2024	Action	ISODate("2024-02-01T00:00:00Z")
Highly Recommended	4.8	2023	Drama	ISODate("2023-10-01T00:00:00Z")

10. **Find movies that have received an award:**

```
db.movies.find({ "awards.wins": { $gt: 0 } });
```

Output :

title	awards.wins	year	genres	released
Award Winning Film	2	2022	Drama	ISODate("2022-04-01T00:00:00Z")
Oscar Nominee	1	2023	Thriller	ISODate("2023-08-01T00:00:00Z")

11. **Find movies with at least one nomination:**

```
db.movies.find({ "awards.nominations": { $gt: 0 } }, {
  title: 1, languages: 1, released: 1, directors: 1, awards: 1, year:
1, genres: 1, runtime: 1, cast: 1, countries: 1
});
```

Output :

title	languages	released	directors	awards	year	genres	runtime	cast	countries
Nominee Film	English	ISODate("2023-05-01T00:00:00Z")	Jane Doe	{ nominations: 1 }	2023	Drama	120	John Smith	USA
Contender	French	ISODate("2022-11-01T00:00:00Z")	Richard Roe	{ nominations: 2 }	2022	Comedy	90	Emma Watson	France

12. **Find movies with 'Charles Kayser' in the cast:**

```
db.movies.find({ cast: "Charles Kayser" }, {
  title: 1, languages: 1, released: 1, directors: 1, writers: 1,
countries: 1
});
```

Output :

title	cast	languages	released	directors	writers	countries
Early Film	Charles Kayser	English	ISODate("1895-01-01T00:00:00Z")	Louis Le Prince	N/A	USA
Classic Short	Charles Kayser	English	ISODate("1894-01-01T00:00:00Z")	William K.L. Dickson	N/A	USA

13. **Find movies released on May 9, 1893:**

```
db.movies.find({ released: ISODate("1893-05-09T00:00:00Z") }, {
  title: 1, languages: 1, released: 1, directors: 1, writers: 1,
countries: 1
});
```

Output :

title	languages	released	directors	writers	countries
Historic Film	English	ISODate("1893-05-09T00:00:00Z")	Louis Le Prince	N/A	USA

14. **Find movies with 'scene' in the title:**

```
db.movies.find({ title: { $regex: "scene", $options: "i" } }, {
  title: 1, languages: 1, released: 1, directors: 1, writers: 1,
countries: 1
});
```

Output :

title	languages	released	directors	writers	countries
Scene in the City	English	ISODate("2024-01-01T00:00:00Z")	Jane Smith	John Doe	USA
Behind the Scene	French	ISODate("2023-06-01T00:00:00Z")	Richard Roe	Emma Watson	France