

# Problem Statements & Queries

## 1. Insert a New Movie into the Database

**Problem:** A new blockbuster movie needs to be added to the database.

```
db.movies.insertOne({
  title: "Avatar 3",
  year: 2025,
  genre: ["Sci-Fi", "Adventure"],
  director: "James Cameron",
  rating: 9.1,
  boxOffice: 1500000000
});
```

```
Type "it" for more
> db.movies.insertOne({
  title: "Avatar 3",
  year: 2025,
  genre: ["Sci-Fi", "Adventure"],
  director: "James Cameron",
  rating: 9.1,
  boxOffice: 1500000000
});
< {
  acknowledged: true,
  insertedId: ObjectId('67d6a9c5ef234f45a8a2d337')
}
Atlas atlas-14llsp-shard-0 [primary] sample_mflix> |
```

## 2. Bulk Insert Multiple Movies

**Problem:** Insert multiple movies at once.

```
db.movies.insertMany([
  { title: "Interstellar", year: 2014, genre: ["Sci-Fi"], rating: 8.6 },
  { title: "Inception", year: 2010, genre: ["Sci-Fi", "Thriller"], rating: 8.8 },
  { title: "The Dark Knight", year: 2008, genre: ["Action", "Drama"], rating: 9.0 }
]);
```

```
> db.movies.insertMany([
  { title: "Interstellar", year: 2014, genre: ["Sci-Fi"], rating: 8.6 },
  { title: "Inception", year: 2010, genre: ["Sci-Fi", "Thriller"], rating: 8.8 },
  { title: "The Dark Knight", year: 2008, genre: ["Action", "Drama"], rating: 9.0 }
]);

< {
  acknowledged: true,
  insertedIds: {
    '0': ObjectId('67d6aab0ef234f45a8a2d338'),
    '1': ObjectId('67d6aab0ef234f45a8a2d339'),
    '2': ObjectId('67d6aab0ef234f45a8a2d33a')
  }
}
```

### 3. Find Movies Belonging to 'Sci-Fi' or 'Action' Genre

**Problem:** Filter movies based on genre.

```
db.movies.find({ genre: { $in: ["Sci-Fi", "Action"] } });
```

```

> db.movies.find({ genre: { $in: ["Sci-Fi", "Action"] } });
< {
  _id: ObjectId('67d6a9c5ef234f45a8a2d337'),
  title: 'Avatar 3',
  year: 2025,
  genre: [
    'Sci-Fi',
    'Adventure'
  ],
  director: 'James Cameron',
  rating: 9.1,
  boxOffice: 1500000000
}
{
  _id: ObjectId('67d6aab0ef234f45a8a2d338'),
  title: 'Interstellar',
  year: 2014,
  genre: [
    'Sci-Fi'
  ],
  rating: 8.6
}

```

```

{
  _id: ObjectId('67d6aab0ef234f45a8a2d339'),
  title: 'Inception',
  year: 2010,
  genre: [
    'Sci-Fi',
    'Thriller'
  ],
  rating: 8.8
}
{
  _id: ObjectId('67d6aab0ef234f45a8a2d33a'),
  title: 'The Dark Knight',
  year: 2008,
  genre: [
    'Action',
    'Drama'
  ],
  rating: 9
}

```

#### 4. Increase the Box Office Collection for a Movie

**Problem:** A movie's earnings increased.

```

db.movies.updateOne({ title: "Avatar 3" }, { $inc: { boxOffice:
500000000 } });

```

```
> db.movies.updateOne({ title: "Avatar 3" }, { $inc: { boxOffice: 500000000 } });
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

## 5. Add a New Genre to an Existing Movie

**Problem:** "Inception" should also be labeled as "Mind-Bending".

```
db.movies.updateOne({ title: "Inception" }, { $push: { genre:
"Mind-Bending" } });
```

```
> db.movies.updateOne({ title: "Inception" }, { $push: { genre: "Mind-Bending" } });
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Atlas atlas-14llsp-shard-0 [primary] sample_mflix>
```

## 6. Remove a Specific Genre from a Movie

**Problem:** Remove "Drama" from "The Dark Knight".

```
db.movies.updateOne({ title: "The Dark Knight" }, { $pull: { genre:
"Drama" } });
```

```
> db.movies.updateOne({ title: "The Dark Knight" }, { $pull: { genre: "Drama" } });
< {
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 0,
  upsertedCount: 0
}
```

## 7. Aggregate: Count Movies per Genre

**Problem:** Get a genre-wise count of movies.

```
db.movies.aggregate([
  { $unwind: "$genre" },
  { $group: { _id: "$genre", count: { $sum: 1 } } }
]);
```

```
> db.movies.aggregate([
  { $unwind: "$genre" },
  { $group: { _id: "$genre", count: { $sum: 1 } } }
]);
< {
  _id: 'Sci-Fi',
  count: 2
}
{
  _id: 'Action',
  count: 1
}
{
  _id: 'Drama',
  count: 1
}
{
  _id: 'Mind-Bending',
  count: 1
}
{
  _id: 'Thriller',
  count: 1
}
```

## 8. Find the Top 3 Highest-Rated Sci-Fi Movies

**Small Output:** Limited to 3 results.

```
db.movies.find({ genre: "Sci-Fi" })
.sort({ rating: -1 })
.limit(3);
```

```

> db.movies.find({ genre: "Sci-Fi" })
  .sort({ rating: -1 })
  .limit(3);
< {
  _id: ObjectId('67d6aab0ef234f45a8a2d339'),
  title: 'Inception',
  year: 2010,
  genre: [
    'Sci-Fi',
    'Thriller'
  ],
  rating: 8.8
}
{
  _id: ObjectId('67d6aab0ef234f45a8a2d338'),
  title: 'Interstellar',
  year: 2014,
  genre: [
    'Sci-Fi'
  ],
  rating: 8.6
}

```

## 9. Find the Most Common Genre in the Database

**Small Output:** Only the most frequent genre.

```

db.movies.aggregate([
  { $unwind: "$genre" },
  { $group: { _id: "$genre", count: { $sum: 1 } } },
  { $sort: { count: -1 } },
  { $limit: 1 }
]);

```

```

> db.movies.aggregate([
  { $unwind: "$genre" },
  { $group: { _id: "$genre", count: { $sum: 1 } } },
  { $sort: { count: -1 } },
  { $limit: 1 }
]);
< {
  _id: 'Sci-Fi',
  count: 2
}

```

## 10. Find the Oldest Movie in the Database

**Small Output:** Only 1 result.

```
db.movies.find().sort({ year: 1 }).limit(1);
```

```
> db.movies.find().sort({ year: 1 }).limit(1);
< {
  _id: ObjectId('573a139af29313caabcf0782'),
  fullplot: 'Set in Hong Kong, 1962, Chow Mo-Wan is a newspaper editor who moves into a new building with his wife. At the same time, Su L
  imdb: {
    rating: 8.1,
    votes: 67663,
    id: 118694
  },
  year: 2000,
  plot: 'Two neighbors, a woman and a man, form a strong bond after both suspect extramarital activities of their spouses. However, they a
  genres: [
    'Drama',
    'Romance'
  ],
  rated: 'PG',
  metacritic: 85,
  title: 'In the Mood for Love',
  lastupdated: '2015-09-15 05:14:09.273000000',
  languages: [
    'Cantonese',
    'Shanghainese',
    'French'
  ],
  writers: [
    'Kar Wai Wong'
```

```

],
type: 'movie',
tomatoes: {
  website: 'http://www.wkw-inthemoodforlove.com',
  viewer: {
    rating: 4.3,
    numReviews: 51804,
    meter: 94
  },
},
dvd: 2002-03-05T00:00:00.000Z,
critic: {
  rating: 7.8,
  numReviews: 119,
  meter: 90
},
lastUpdated: 2015-09-15T17:08:11.000Z,
consensus: 'This understated romance, featuring good performances by its leads, is both visually beautiful and emotionally moving.',
rotten: 12,
production: 'USA Films',
fresh: 107
},
poster: 'https://m.media-amazon.com/images/M/MV5BYjZjODRlMjQtMjJlYy00ZDBjLTkyYTQtZGQxZTk5NzJhYmNmXkEyXkFqcGdeQXVyMTQxNzMzNDI@._V1_SY1000
num_mflix_comments: 0,
released: 2001-03-09T00:00:00.000Z,
awards: {
  wins: 49,
  nominations: 33,

```

```

    text: 'Nominated for 1 BAFTA Film Award. Another 48 wins & 33 nominations.'
  },
  countries: [
    'Hong Kong',
    'China'
  ],
  cast: [
    'Maggie Cheung',
    'Tony Chiu Wai Leung',
    'Ping Lam Siu',
    "Tung Cho 'Joe' Cheung"
  ],
  directors: [
    'Kar Wai Wong'
  ],
  runtime: 98
}

```

## 11. Find the Highest-Rated Movie of Each Genre

**Small Output:** One movie per genre.

```

db.movies.aggregate([
  { $unwind: "$genre" },
  { $sort: { genre: 1, rating: -1 } },
  { $group: { _id: "$genre", topMovie: { $first: "$title" } } }
])

```



```
]);
```

```
> db.movies.aggregate([
  { $unwind: "$genre" },
  { $sort: { genre: 1, rating: -1 } },
  { $group: { _id: "$genre", topMovie: { $first: "$title" } } }
]);
< {
  _id: 'Mind-Bending',
  topMovie: 'Inception'
}
{
  _id: 'Drama',
  topMovie: 'The Dark Knight'
}
{
  _id: 'Action',
  topMovie: 'The Dark Knight'
}
{
  _id: 'Sci-Fi',
  topMovie: 'Inception'
}
{
  _id: 'Thriller',
  topMovie: 'Inception'
}
```