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'
}
```