

1. Movies Collection

The Movies collection stores detailed information about each movie available for booking. This includes essential attributes such as the title, genre, release year, duration, ratings, and a list of actors. This data allows users to browse and select movies based on their preferences.

```
{
  "movie_id": "Number",
  "title": "String",
  "genre": "String",
  "release_year": "Number",
  "duration": "Number", // in minutes
  "ratings": "Number", // Average rating between 0 and 5
  "actors": ["Array of Actor Names"]
}
```

Code

```
db.movies.insertMany([

  {
    movie_id: 2,
    title: "Bahubali",
    genre: "Action",
    release_year: 2015,
    duration: 159,
    ratings: 4.8,
    actors: ["Prabhas", "Anushka Shetty"]
  },
  {
    movie_id: 3,
    title: "RRR",
    genre: "Action",
    release_year: 2022,
    duration: 182,
    ratings: 4.7,
```

```

    actors: ["Ram Charan", "NTR"]
  }
])

```

Output:



```

[
  {
    "_id": "6944f2ae634827f11d8aa364",
    "movie_id": 10,
    "title": "Vikram",
    "genre": "Action",
    "language": "Tamil",
    "release_year": 2022,
    "duration": 174,
    "ratings": 4.6,
    "actors": [
      "Kamal Haasan"
    ]
  },
  {
    "_id": "6944f2ae634827f11d8aa363",
    "movie_id": 9,
    "title": "KGF Chapter 2",
    "genre": "Action",
    "language": "Kannada",
    "release_year": 2022,
    "duration": 168,
    "ratings": 4.7,
    "actors": [
      "Yash"
    ]
  },
  {
    "_id": "6944f063634827f11d8aa35f",
    "movie_id": 3,
    "title": "RRR",
    "genre": "Action",
    "release_year": 2022,
    "duration": 182,
    "ratings": 4.7,
    "actors": [
      "Ram Charan",
      "NTR"
    ]
  }
]

```

2. Theaters Collection

The Theaters collection contains information about the different theaters where movies are screened. Key attributes include the theaters name, location (city, state, and country) and its seating capacity. This information is crucial for users to choose a convenient location for their movie experience.

```

{
  "theater_id": "Number",
  "name": "String",
  "location": {
    "city": "String",
    "state": "String",
    "country": "String"
  },
  "seating_capacity": "Number"
}

```

MongoDB Code

```
db.theaters.insertOne({  
  theater_id: 1,  
  name: "PVR Cinemas",  
  location: {  
    city: "Bangalore",  
    state: "Karnataka",  
    country: "India"  
  },  
  seating_capacity: 300  
})
```

```
db.theaters.find()
```

Output:

```
{  
  "_id": ObjectId("64f1a2c9b8e4f123456789ab"),  
  "theater_id": 1,  
  "name": "PVR Cinemas",  
  "location": {  
    "city": "Bangalore",  
    "state": "Karnataka",  
    "country": "India"  
  },  
  "seating_capacity": 300  
}
```

```
}
```

3. Users Collection

The Users collection is designed to store information about the customers who use the booking system. It includes attributes such as the users name, email, date of birth and loyalty points. This data helps in managing user accounts and providing personalized services.

```
{  
  "user_id": "Number",  
  "name": "String",  
  "email": "String",  
  "date_of_birth": "Date",  
  "loyalty_points": "Number"  
}
```

MongoDB Code

```
db.users.insertOne({  
  
  user_id: 1,  
  
  name: "Anita",  
  
  email: "anita@gmail.com",  
  
  date_of_birth: new Date("2002-08-20"),  
  
  loyalty_points: 120  
  
})
```

```
db.users.find()
```

Output:

```
{  
  
  "_id": ObjectId("64f1b3d2c9a4f123456789cd"),  
  
  "user_id": 1,  
  
  "name": "Anita",  
  
  "email": "anita@gmail.com",  
  
}
```

```
"date_of_birth": ISODate("2002-08-20T00:00:00.000Z"),  
"loyalty_points": 120  
}
```

MongoDB Code (Q1 – Q20)

```
const mongoose = require("mongoose");  
  
async function runAllQueries() {  
  await mongoose.connect("mongodb://localhost:27017/movieBookingDB");  
  
  const db = mongoose.connection.db;  
  
  console.log("\nQ1: Insert a new movie");  
  console.log(await db.collection("movies").insertOne({  
    movie_id: 1,  
    title: "Hello Brother",  
    genre: "Comedy",  
    release_year: 1994,  
    duration: 150,  
    ratings: 4.5,  
    actors: ["Nagarjuna"]  
  }));  
  
  console.log("\nQ2: Insert multiple users");  
  console.log(await db.collection("users").insertMany([  
    { user_id: 1, name: "Ravi", email: "ravi@gmail.com", date_of_birth: new  
Date("1998-05-12"), loyalty_points: 50 },  
    { user_id: 2, name: "Anita", email: "anita@gmail.com", date_of_birth: new  
Date("2002-08-20"), loyalty_points: 120 }  
  ]));  
  
  console.log("\nQ3: Comedy movies");  
  console.log(await db.collection("movies").find({ genre: "Comedy" }).toArray());  
  
  console.log("\nQ4: Theaters in Bangalore");  
  console.log(await db.collection("theaters").find({ "location.city": "Bangalore"  
}).toArray());  
  
  console.log("\nQ5: Update seating capacity");  
  console.log(await db.collection("theaters").updateOne(  
    { theater_id: 1 },  
    { $set: { seating_capacity: 350 } }  
  ));  
  
  console.log("\nQ6: Delete movie by title");
```

```
console.log(await db.collection("movies").deleteOne({ title: "Hello Brother" }));

console.log("\nQ7: Bookings by user ID 2");
console.log(await db.collection("bookings").find({ user_id: 2 }).toArray());

console.log("\nQ8: Movie title and genre");
console.log(await db.collection("movies")
  .find({ title: "Hello Brother" }, { projection: { _id: 0, title: 1, genre: 1 } })
  .toArray());

console.log("\nQ9: Users with loyalty > 100");
console.log(await db.collection("users").find({ loyalty_points: { $gt: 100 } })
  .toArray());

console.log("\nQ10: Insert new booking");
console.log(await db.collection("bookings").insertOne({
  booking_id: 1,
  user_id: 2,
  movie_id: 1,
  theater_id: 1,
  seats_booked: 2,
  total_price: 500,
  booking_date: new Date()
}));

console.log("\nQ11: Users born after 2000");
console.log(await db.collection("users").find({ date_of_birth: { $gt: new
Date("2000-01-01") } }).toArray());

console.log("\nQ12: Update rating");
console.log(await db.collection("movies").updateOne(
  { title: "Hello Brother" },
  { $set: { ratings: 4.9 } }
));

console.log("\nQ13: Movies after 1990");
console.log(await db.collection("movies").find({ release_year: { $gte: 1990 } })
  .toArray());

console.log("\nQ14: Theaters in Karnataka");
console.log(await db.collection("theaters").find({ "location.state": "Karnataka" })
  .toArray());

console.log("\nQ15: Delete bookings for movie");
console.log(await db.collection("bookings").deleteMany({ movie_id: 1 }));

console.log("\nQ17: Latest 3 movies");
console.log(await db.collection("movies").find().sort({ release_year: -1 })
  .limit(3).toArray());
```

```

console.log("\nQ18: Count Action movies");
console.log(await db.collection("movies").countDocuments({ genre: "Action" }));

console.log("\nQ19: Users with loyalty = 50");
console.log(await db.collection("users").find({ loyalty_points: 50 }).toArray());

console.log("\nQ20: Update user name");
console.log(await db.collection("users").updateOne(
  { user_id: 1 },
  { $set: { name: "Manasa" } }
));

await mongoose.disconnect();
}

runAllQueries();

```

Ouput:

sathyanarayana@mac movies-booking-api % node allQueries.js

Q1: Insert a new movie

```

{
  acknowledged: true,
  insertedId: new ObjectId("6944f6ab050afdefe5b2205b")
}

```

Q2: Insert multiple users

```

{
  acknowledged: true,
  insertedCount: 2,
  insertedIds: {
    '0': new ObjectId("6944f6ab050afdefe5b2205c"),

```

```
'1': new ObjectId("6944f6ab050afdefe5b2205d")
}
}
```

Q3: Comedy movies

```
[
{
  _id: new ObjectId("6944f2ae634827f11d8aa365"),
  movie_id: 11,
  title: '3 Idiots',
  genre: 'Comedy',
  language: 'Hindi',
  release_year: 2009,
  duration: 170,
  ratings: 4.8,
  actors: [ 'Aamir Khan' ]
},
{
  _id: new ObjectId("6944f6ab050afdefe5b2205b"),
  movie_id: 1,
  title: 'Hello Brother',
  genre: 'Comedy',
  release_year: 1994,
  duration: 150,
```



```
    ratings: 4.5,  
    actors: [ 'Nagarjuna' ]  
  }  
]
```

Q4: Theaters in Bangalore

```
[]
```

Q5: Update seating capacity

```
{  
  acknowledged: true,  
  modifiedCount: 0,  
  upsertedId: null,  
  upsertedCount: 0,  
  matchedCount: 0  
}
```

Q6: Delete movie by title

```
{ acknowledged: true, deletedCount: 1 }
```

Q7: Bookings by user ID 2

```
[]
```

Q8: Movie title and genre

```
[]
```

Q9: Users with loyalty > 100

```
[  
  {  
    _id: new ObjectId("6944f422fdaa44f676d1529c"),  
    user_id: 2,  
    name: 'Anita',  
    email: 'a@gmail.com',  
    date_of_birth: 2002-08-20T00:00:00.000Z,  
    loyalty_points: 120,  
    __v: 0  
  },  
  {  
    _id: new ObjectId("6944f6ab050afdefe5b2205d"),  
    user_id: 2,  
    name: 'Anita',  
    email: 'anita@gmail.com',  
    date_of_birth: 2002-08-20T00:00:00.000Z,  
    loyalty_points: 120  
  }  
]
```

Q10: Insert new booking

```
{  
  acknowledged: true,  
  insertedId: new ObjectId("6944f6ab050afdefe5b2205e")  
}
```

Q11: Users born after 2000

```
[  
  {  
    _id: new ObjectId("6944f422fdaa44f676d1529c"),  
    user_id: 2,  
    name: 'Anita',  
    email: 'a@gmail.com',  
    date_of_birth: 2002-08-20T00:00:00.000Z,  
    loyalty_points: 120,  
    __v: 0  
  },  
  {  
    _id: new ObjectId("6944f6ab050afdefe5b2205d"),  
    user_id: 2,  
    name: 'Anita',  
    email: 'anita@gmail.com',  
    date_of_birth: 2002-08-20T00:00:00.000Z,  
    loyalty_points: 120  
  }  
]
```

```
]
```

Q12: Update rating

```
{  
  acknowledged: true,  
  modifiedCount: 0,  
  upsertedId: null,  
  upsertedCount: 0,  
  matchedCount: 0  
}
```

Q13: Movies after 1990

```
[  
  {  
    _id: new ObjectId("6944f063634827f11d8aa35e"),  
    movie_id: 2,  
    title: 'Bahubali',  
    genre: 'Action',  
    release_year: 2015,  
    duration: 159,  
    ratings: 4.8,  
    actors: [ 'Prabhas', 'Anushka Shetty' ]  
  },  
  {
```

```
_id: new ObjectId("6944f063634827f11d8aa35f"),  
movie_id: 3,  
title: 'RRR',  
genre: 'Action',  
release_year: 2022,  
duration: 182,  
ratings: 4.7,  
actors: [ 'Ram Charan', 'NTR' ]  
},
```

```
{  
_id: new ObjectId("6944f2ae634827f11d8aa360"),  
movie_id: 6,  
title: 'Inception',  
genre: 'Sci-Fi',  
language: 'English',  
release_year: 2010,  
duration: 148,  
ratings: 4.8,  
actors: [ 'Leonardo DiCaprio' ]  
},
```

```
{  
_id: new ObjectId("6944f2ae634827f11d8aa361"),  
movie_id: 7,  
title: 'Interstellar',
```

```
genre: 'Sci-Fi',  
language: 'English',  
release_year: 2014,  
duration: 169,  
ratings: 4.7,  
actors: [ 'Matthew McConaughey' ]  
},  
{  
  _id: new ObjectId("6944f2ae634827f11d8aa362"),  
  movie_id: 8,  
  title: 'Pushpa',  
  genre: 'Action',  
  language: 'Telugu',  
  release_year: 2021,  
  duration: 179,  
  ratings: 4.6,  
  actors: [ 'Allu Arjun' ]  
},  
{  
  _id: new ObjectId("6944f2ae634827f11d8aa363"),  
  movie_id: 9,  
  title: 'KGF Chapter 2',  
  genre: 'Action',  
  language: 'Kannada',
```

```
    release_year: 2022,

    duration: 168,

    ratings: 4.7,

    actors: [ 'Yash' ]

},

{

    _id: new ObjectId("6944f2ae634827f11d8aa364"),

    movie_id: 10,

    title: 'Vikram',

    genre: 'Action',

    language: 'Tamil',

    release_year: 2022,

    duration: 174,

    ratings: 4.6,

    actors: [ 'Kamal Haasan' ]

},

{

    _id: new ObjectId("6944f2ae634827f11d8aa365"),

    movie_id: 11,

    title: '3 Idiots',

    genre: 'Comedy',

    language: 'Hindi',

    release_year: 2009,

    duration: 170,
```

```
    ratings: 4.8,
    actors: [ 'Aamir Khan' ]
  },
  {
    _id: new ObjectId("6944f2ae634827f11d8aa366"),
    movie_id: 12,
    title: 'Dangal',
    genre: 'Drama',
    language: 'Hindi',
    release_year: 2016,
    duration: 161,
    ratings: 4.7,
    actors: [ 'Aamir Khan' ]
  }
]
```

Q14: Theaters in Karnataka

```
[]
```

Q15: Delete bookings for movie

```
{ acknowledged: true, deletedCount: 1 }
```

Q17: Latest 3 movies

```
[
```



```
{
  _id: new ObjectId("6944f2ae634827f11d8aa364"),
  movie_id: 10,
  title: 'Vikram',
  genre: 'Action',
  language: 'Tamil',
  release_year: 2022,
  duration: 174,
  ratings: 4.6,
  actors: [ 'Kamal Haasan' ]
},
```

```
{
  _id: new ObjectId("6944f2ae634827f11d8aa363"),
  movie_id: 9,
  title: 'KGF Chapter 2',
  genre: 'Action',
  language: 'Kannada',
  release_year: 2022,
  duration: 168,
  ratings: 4.7,
  actors: [ 'Yash' ]
},
```

```
{
  _id: new ObjectId("6944f063634827f11d8aa35f"),
```

```
movie_id: 3,  
title: 'RRR',  
genre: 'Action',  
release_year: 2022,  
duration: 182,  
ratings: 4.7,  
actors: [ 'Ram Charan', 'NTR' ]  
}  
]
```

Q18: Count Action movies

5

Q19: Users with loyalty = 50

```
[  
{  
  _id: new ObjectId("6944f422fdaa44f676d1529b"),  
  user_id: 1,  
  name: 'Ravi',  
  email: 'r@gmail.com',  
  date_of_birth: 1998-05-12T00:00:00.000Z,  
  loyalty_points: 50,  
  __v: 0  
},
```

```
{
  _id: new ObjectId("6944f6ab050afdefe5b2205c"),
  user_id: 1,
  name: 'Ravi',
  email: 'ravi@gmail.com',
  date_of_birth: 1998-05-12T00:00:00.000Z,
  loyalty_points: 50
}
]
```

Q20: Update user name

```
{
  acknowledged: true,
  modifiedCount: 1,
  upsertedId: null,
  upsertedCount: 0,
  matchedCount: 1
}
```