

## Data modelling 3

```
// create collections
db.createCollection("movies")
db.createCollection("productionCompanies")
db.createCollection("actors")
db.createCollection("directors")

// insert values
db.movies.insertMany([
  {
    title: "Movie1",
    year: 2012,
    length: 120,
    genre: "horror",
    plot: "plot1",
    productionCompany: "ProductionCompany1",
    actors: ["Actor1"],
    directors: ["Director1", "Director2", "Director3"]
  },
  {
    title: "Movie2",
    year: 2010,
    length: 100,
    genre: "action",
    plot: "plot2",
    productionCompany: "ProductionCompany1",
    actors: ["Actor2"],
    directors: ["Director1"]
  }
])

db.productionCompanies.insertMany([
  {
    name: "ProductionCompany1",
    address: "address1",
    movies: ["Movie1", "Movie2"]
  }
])

db.actors.insertMany([
  {
    id: "Actor1",
    name: "Actor1",
    dateOfBirth: ISODate("1990-01-01T00:00:00.000Z"),
    movies: ["Movie1"],
    role: "role1"
  },
  {
    id: "Actor2",
    name: "Actor2",
    dateOfBirth: ISODate("1995-01-01T00:00:00.000Z"),
```

```

    movies: ["Movie2"],
    role: "role2"
  }
])

db.directors.insertMany([
  {
    id: "Director1",
    name: "Director1",
    dateOfBirth: ISODate("1980-01-01T00:00:00.000Z"),
    movies: ["Movie1", "Movie2"]
  },
  {
    id: "Director2",
    name: "Director2",
    dateOfBirth: ISODate("1985-01-01T00:00:00.000Z"),
    movies: ["Movie1"]
  },
  {
    id: "Director3",
    name: "Director3",
    dateOfBirth: ISODate("1990-01-01T00:00:00.000Z"),
    movies: ["Movie1"]
  }
])

```

1)List the details of horror movies released in 2012 and directed by more than 2 directors.

```

db.movies.find({
  ... year:2012,
  ... genre:"horror",
  ... $expr:{
  ... $gt:[{$size: "$directors"},2]
}).pretty();

```

2)List the details of actors who acted in movies having same titles but released before 2000 and after 2010.

```

db.actors.find({
  movies: {
    $elemMatch: {
      $in: db.movies.distinct("title", { $or: [{ year: { $lt: 2000 } }, { year: { $gt: 2010 } }] })
    }
  }
})

```

3)

```

db.productionCompanies.find({

```

```
    movies: { $size: db.productionCompanies.aggregate([ { $project: { size: { $size: "$movies" } } }, {
$group: { _id: null, max: { $max: "$size" } } } ]).toArray()[0].max }
})
```

```
4)db.movies.find({
  $and: [
    { directors: { $elemMatch: { $in: db.directors.distinct("_id", { dateOfBirth: { $in:
db.actors.distinct("dateOfBirth") } }) } } },
    { actors: { $elemMatch: { $in: db.actors.distinct("_id", { dateOfBirth: { $in:
db.directors.distinct("dateOfBirth") } }) } } } }
  ]
})
```

```
5)db.directors.find({
  movies: {
    $elemMatch: {
      $in: db.productionCompanies.distinct("movies")
    }
  }
})
```