

Class:5

PROJECTION OPERATORS

Projection:

MongoDB, projection is a way to specify or restrict which fields (columns) you want to retrieve from a collection (table) in a query.

- Create new collection called candidates.
- Upload the dataset [link](#)

```
_id: ObjectId('665752830959f4120ac93d06')
name : "Emily Jones"
age : 21
▸ courses : Array (3)
  gpa : 3.6
  home_city : "Houston"
  blood_group : "AB-"
  is_hotel_resident : false
```

Basic projection:

In this method, you can use projection to include or exclude fields:

*Include fields: specify the fields to include with a value 1.

```
db.collection.find({}, { name: 1, age: 1 })
```

*Exclude fields: specify the fields to exclude with a value of 0.

```
db.collection.find({}, { password: 0 })
```

PROJECTION OPERATION:

\$slice

\$elemMatch

\$filter.

Example 1: Retrieve Name, Age, and GPA

JavaScript

```
db.candidates.find({}, { name: 1, age: 1, gpa: 1 });
```

Example 2: Find Candidates Enrolled in "Computer Science" with Specific Projection

JavaScript

```
db.candidates.find({ courses: { $elemMatch: { $eq: "Computer Science" }  
  { name: 1, "courses.$": 1 }}); // Include only matched course
```

Here, we use operations like \$elemMatch.

OUTPUT:

```
test> db.candidate.find({courses:{$elemMatch:{$eq:"Computer Science"}}},{name:1,"courses.$":1});  
[  
  {  
    _id: ObjectId('6682d28ec38b2a00d2064ae3'),  
    name: 'Bob Johnson',  
    courses: [ 'Computer Science' ]  
  },  
  {  
    _id: ObjectId('6682d28ec38b2a00d2064ae8'),  
    name: 'Gabriel Miller',  
    courses: [ 'Computer Science' ]  
  },  
  {  
    _id: ObjectId('6682d28ec38b2a00d2064aec'),  
    name: 'Kevin Lewis',  
    courses: [ 'Computer Science' ]  
  }  
]
```

\$elemMatch:

```
test> db.players.insertOne( {  
...   name: "player1",  
...   games: [ { game: "abc", score: 8 }, { game: "xyz", score: 5 } ],  
...   joined: new Date("2020-01-01"),  
...   lastLogin: new Date("2020-05-01")  
... } )  
{  
  acknowledged: true,  
  insertedId: ObjectId('6682dbaeec4204f7fecdcdf6')  
}
```

```
test> db.players.find({}, {games: {$elemMatch: {score: {$gt: 5}}}, joined: 1, lastlogin: 1})  
;  
[  
  {  
    _id: ObjectId('6682dbaeec4204f7fecdcdf6'),  
    joined: ISODate('2020-01-01T00:00:00.000Z'),  
    games: [ { game: 'abc', score: 8 } ]  
  }  
]
```