Day 3

Name : DHANAPAL

Date : 30/7/2024

Tasks

- ★ **Create:**
    - ○ Insert multiple documents into a collection called students with fields such as name, age, grade, and subjects.
- ★ **Read:**
    - ○ Write queries to:
        - ■ Find all students.
        - ■ Find students who are older than 15 years.
        - ■ Find students who have "Math" as one of their subjects.
        - ■ Find students who have both "Math" and "Humanities" subjects.
        - ■ Find students who do not have both "Finance" and "Arts" subjects.
- ★ **Update:**
    - ○ Update the grade of a student named "Supriya" to "A".

Create:

To insert multiple documents into a collection called students:

```
use Practice
switched to db Practice
db.students.insertMany([
  { name: "Dhanapal", age: 16, grade: "B", subjects: ["Math", "Science"] },
  { name: "Prathik", age: 14, grade: "A", subjects: ["Math", "Humanities"] },
  { name: "Siddarth", age: 17, grade: "C", subjects: ["Arts", "History"] },
  { name: "Supriya", age: 15, grade: "B", subjects: ["Math", "Science"] },
  { name: "Hema", age: 18, grade: "B", subjects: ["Finance", "Arts"] }
]);
```

```
< {
    acknowledged: true,
    insertedIds: {
      '0': ObjectId('66a8e8a68c1f8089161c2c68'),
      '1': ObjectId('66a8e8a68c1f8089161c2c69'),
      '2': ObjectId('66a8e8a68c1f8089161c2c6a'),
      '3': ObjectId('66a8e8a68c1f8089161c2c6b'),
      '4': ObjectId('66a8e8a68c1f8089161c2c6c')
    }
}
```

Read:

Find all students:

```
db.students.find({});
```

Result

```
< {
    _id: ObjectId('66a8e8a68c1f8089161c2c68'),
    name: 'Dhanapal',
    age: 16,
    grade: 'B',
    subjects: [
      'Math',
      'Science'
    ]
}
{
    _id: ObjectId('66a8e8a68c1f8089161c2c69'),
    name: 'Prathik',
    age: 14,
    grade: 'A',
    subjects: [
      'Math',
      'Humanities'
    ]
}
```

```
{
  _id: ObjectId('66a8e8a68c1f8089161c2c6a'),
  name: 'Siddarth',
  age: 17,
  grade: 'C',
  subjects: [
    'Arts',
    'History'
  ]
}
{
  _id: ObjectId('66a8e8a68c1f8089161c2c6b'),
  name: 'Supriya',
  age: 15,
  grade: 'B',
  subjects: [
    'Math',
    'Science'
  ]
}
```

```
{
  _id: ObjectId('66a8e8a68c1f8089161c2c6c'),
  name: 'Hema',
  age: 18,
  grade: 'B',
  subjects: [
    'Finance',
    'Arts'
  ]
}
```

2.Find students who are older than 15 years:

```
db.students.find({ age: { $gt: 15 } });
```

Result:

```
{
  _id: ObjectId('66a8e8a68c1f8089161c2c68'),
  name: 'Dhanapal',
  age: 16,
  grade: 'B',
  subjects: [
    'Math',
    'Science'
  ]
}
{
  _id: ObjectId('66a8e8a68c1f8089161c2c6a'),
  name: 'Siddarth',
  age: 17,
  grade: 'C',
  subjects: [
    'Arts',
    'History'
  ]
}
```

3.Find students who have "Math" as one of their subjects:

```
db.students.find({ subjects: "Math" });
```

Result

```
{
  _id: ObjectId('66a8e8a68c1f8089161c2c68'),
  name: 'Dhanapal',
  age: 16,
  grade: 'B',
  subjects: [
    'Math',
    'Science'
  ]
}
```

```
{
  _id: ObjectId('66a8e8a68c1f8089161c2c69'),
  name: 'Prathik',
  age: 14,
  grade: 'A',
  subjects: [
    'Math',
    'Humanities'
  ]
}
{
  _id: ObjectId('66a8e8a68c1f8089161c2c6b'),
  name: 'Supriya',
  age: 15,
  grade: 'B',
  subjects: [
    'Math',
    'Science'
  ]
}
```

4.Find students who have both "Math" and "Humanities" subjects:

```
db.students.find({ subjects: { $all: ["Math", "Humanities"] } });
```

Result

```
< {
    _id: ObjectId('66a8e8a68c1f8089161c2c69'),
    name: 'Prathik',
    age: 14,
    grade: 'A',
    subjects: [
      'Math',
      'Humanities'
    ]
}
```

5.Find students who do not have both "Finance" and "Arts" subjects:

```
Practice> db.students.find({
            $nor: [
                { subjects: "Finance" },
                { subjects: "Arts" }
            ]
        });
```

Result

```
< {
    _id: ObjectId('66a8e8a68c1f8089161c2c68'),
    name: 'Dhanapal',
    age: 16,
    grade: 'B',
    subjects: [
      'Math',
      'Science'
    ]
  }
  {
    _id: ObjectId('66a8e8a68c1f8089161c2c69'),
    name: 'Prathik',
    age: 14,
    grade: 'A',
    subjects: [
      'Math',
      'Humanities'
    ]
  }
```

```
{
  _id: ObjectId('66a8e8a68c1f8089161c2c6b'),
  name: 'Supriya',
  age: 15,
  grade: 'B',
  subjects: [
    'Math',
    'Science'
  ]
}
```

Update

To update the grade of a student named "Supriya" to "A":

```
> db.students.updateOne(
    { name: "Supriya" },
    { $set: { grade: "A" } }
);
< {
    acknowledged: true,
    insertedId: null,
    matchedCount: 1,
    modifiedCount: 1,
    upsertedCount: 0
}
```

Result

```
{
  _id: ObjectId('66a8e8a68c1f8089161c2c6b'),
  name: 'Supriya',
  age: 15,
  grade: 'A',
  subjects: [
    'Math',
    'Science'
  ]
}
```