

IT-2234(Practical Exam)

ICAE02

01.Create Database and Collection

Create the students and grades collections and insert the sample documents into both collections.

Create Database

Database Name

schooldb

Collection Name

students

☐ **Time-Series**
Time-series collections efficiently store sequences of measurements over a period of time. [Learn More](#)

> Additional preferences (e.g. Custom collation, Clustered collections)

Cancel

Create Database

Documents 0 Aggregations Schema Indexes 1 Validation

Type a query: { field: 'value' } or [Generate query](#) ✚

Explain Reset Find </> Options ▶

ADD DATA EXPORT DATA UPDATE DELETE 25 1 - 20 of 20

grades

	_id ObjectId	subject String	score Int32	term String	studentId
1	ObjectId('6826e8e37ce9a5...	"Mathematics"	85	"Fall 2022"	ObjectId(✎🔍🗑️)
2	ObjectId('6826e8e37ce9a5...	"English"	90	"Fall 2022"	ObjectId(✎🔍🗑️)
3	ObjectId('6826e8e37ce9a5...	"Mathematics"	75	"Spring 2022"	ObjectId(✎🔍🗑️)
4	ObjectId('6826e8e37ce9a5...	"Statistics"	80	"Fall 2022"	ObjectId(✎🔍🗑️)
5	ObjectId('6826e8e37ce9a5...	"Physics"	92	"Fall 2022"	ObjectId(✎🔍🗑️)
6	ObjectId('6826e8e37ce9a5...	"Mathematics"	86	"Spring 2023"	ObjectId(✎🔍🗑️)
7	ObjectId('6826e8e37ce9a5...	"Engineering"	89	"Fall 2021"	ObjectId(✎🔍🗑️)
8	ObjectId('6826e8e37ce9a5...	"Mathematics"	84	"Spring 2022"	ObjectId(✎🔍🗑️)
9	ObjectId('6826e8e37ce9a5...	"Biology"	78	"Spring 2021"	ObjectId(✎🔍🗑️)
10	ObjectId('6826e8e37ce9a5...	"Chemistry"	82	"Fall 2021"	ObjectId(✎🔍🗑️)
11	ObjectId('6826e8e37ce9a5...	"Chemistry"	88	"Fall 2021"	ObjectId(✎🔍🗑️)
12	ObjectId('6826e8e37ce9a5...	"Physics"	79	"Spring 2022"	ObjectId(✎🔍🗑️)

03.Find the female students and only display their name, age and gender.

db.students.find({gender:"Female"},{name:1,age:1,gender:1,_id:0})

```
>_MONGOSH
> db.students.find({gender:"Female"},{name:1,age:1,gender:1,_id:0})
< {
  name: 'Alice Johnson',
  gender: 'Female',
  age: 20
}
{
  name: 'Clara Lee',
  gender: 'Female',
  age: 19
}
{
  name: 'Eva Chen',
  gender: 'Female',
  age: 23
}
{
  name: 'Grace Liu',
  gender: 'Female',
  age: 20
}
{
  name: 'Ivy Zhang',
  gender: 'Female',
  age: 21
}
```

04. Find the students who are younger than 22 and enrolled after 2020

```
db.students.find({age:{$lt:22},enrollmentYear:{$gt:2020}})
```

```
>_MONGOSH
<
> db.students.find({age:{$lt:22},enrollmentYear:{$gt:2020}})
< {
  _id: ObjectId('64b1fcd1f4a13a001e3d41a1'),
  name: 'Alice Johnson',
  enrollmentYear: 2021,
  major: 'Computer Science',
  email: 'alice.johnson@example.com',
  gender: 'Female',
  age: 20
}
{
  _id: ObjectId('64b1fcd1f4a13a001e3d41a3'),
  name: 'Clara Lee',
  enrollmentYear: 2022,
  major: 'Physics',
  email: 'clara.lee@example.com',
  gender: 'Female',
  age: 19
}
{
  _id: ObjectId('64b1fcd1f4a13a001e3d41a4'),
  name: 'Daniel Kim',
  enrollmentYear: 2021,
  major: 'Engineering',
```

05. Find all grades for "Alice Johnson".

```
var alicId = ObjectId("64b1fcd1f4a13a001e3d41a1");
```

```
db.grades.find({ studentId: alicId });
```

```

>
var aliceId = ObjectId("64b1fcd1f4a13a001e3d41a1");

db.grades.find({ studentId: aliceId });
< {
  _id: ObjectId('6826e8e37ce9a56ea8ba4540'),
  subject: 'Mathematics',
  score: 85,
  term: 'Fall 2022',
  studentId: ObjectId('64b1fcd1f4a13a001e3d41a1')
}
{
  _id: ObjectId('6826e8e37ce9a56ea8ba4541'),
  subject: 'English',
  score: 90,
  term: 'Fall 2022',
  studentId: ObjectId('64b1fcd1f4a13a001e3d41a1')
}
schooldb> |

```

06. Find how many students followed the subject "Mathematics"

```
db.grades.distinct("studentId", { subject: "Mathematics" }).length
```

```

> db.grades.distinct("studentId", { subject: "Mathematics" }).length
< 4
schooldb> |

```

07. Find all students with grades in the term "Fall 2022".

```

const fallStudents = db.grades.distinct("studentId", { term: "Fall 2022" });
db.students.find({ _id: { $in: fallStudents } });

```

>_MONGOSH

1

```
const fallStudents = db.grades.distinct("studentId", { term: "Fall 2022" });  
db.students.find({ _id: { $in: fallStudents } })
```

< {

```
  _id: ObjectId('64b1fcd1f4a13a001e3d41a1'),  
  name: 'Alice Johnson',  
  enrollmentYear: 2021,  
  major: 'Computer Science',  
  email: 'alice.johnson@example.com',  
  gender: 'Female',  
  age: 20  
}
```

{

```
  _id: ObjectId('64b1fcd1f4a13a001e3d41a2'),  
  name: 'Bob Smith',  
  enrollmentYear: 2020,  
  major: 'Mathematics',  
  email: 'bob.smith@example.com',  
  gender: 'Male',  
  age: 22  
}
```

{

```
  _id: ObjectId('64b1fcd1f4a13a001e3d41a3'),  
  name: 'Clara Lee',  
  enrollmentYear: 2022,  
  major: 'Physics',
```