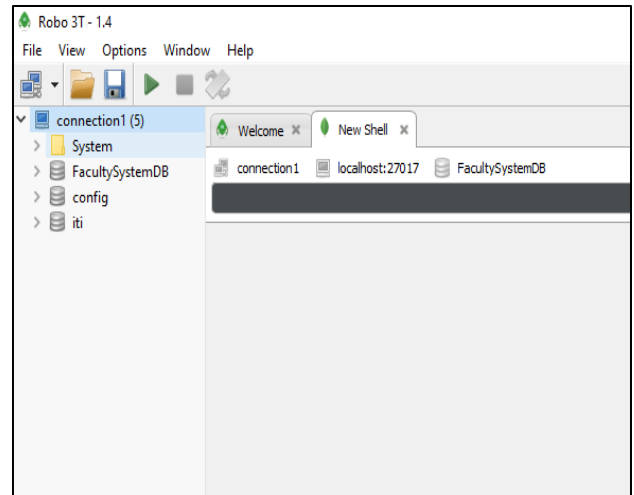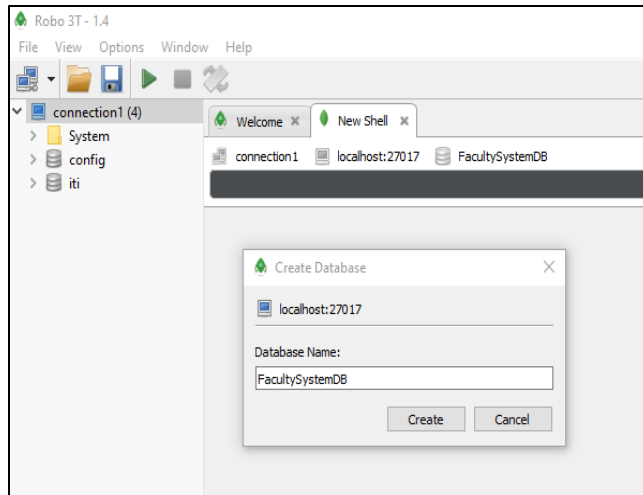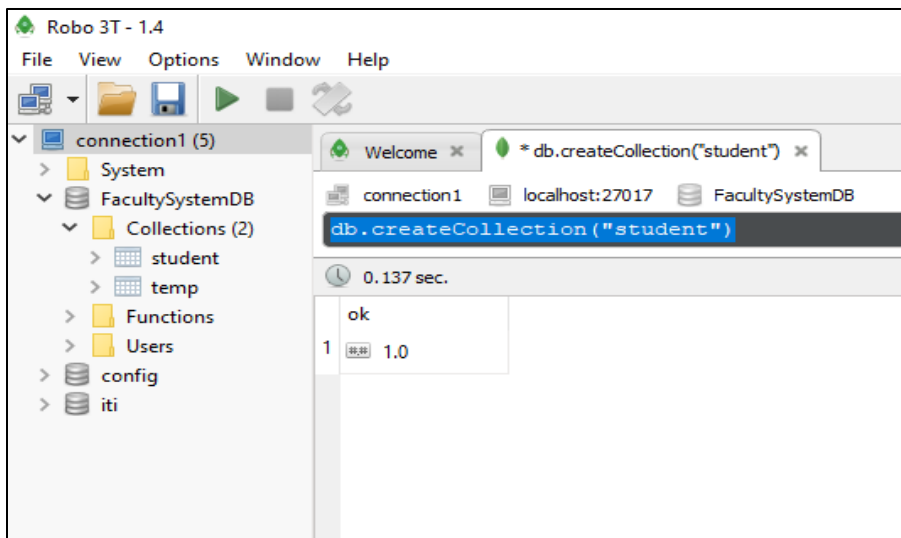1. Create database named: FacultySystemDB.

2. Create collection (student) that has:

● FirstName: string, LastName: string, Age: Number, Faculty: An object that has Name and Address

● Grades: An array of objects, each object has: CourseName, Grade, Pass (Boolean).

● IsFired: Boolean

3. Insert 3 (at least) documents in Student collection with different values.

- Try inserting one record each time

- Try inserting many students using one insert statement.

```
db.student.insertOne({
  "FirstName": "Mina",
  "LastName": "Nagy",
  "Age": 30,
  "Faculty": {
    "Name": "Engineering",
    "Address": "Cairo"
  },
  "Grades": [
    {
      "CourseName": "C",
      "Grade": 100,
      "Pass": true
    },
    {
      "CourseName": "C++",
      "Grade": 95,
      "Pass": true
    },
    {
      "CourseName": "Linux",
      "Grade": 90,
      "Pass": true
    }
  ],
  "IsFired": false
});
```

robo3t

🕐 0.002 sec.

	acknowledged	insertedId	
1	T/F true	ObjectId("6...	

connection1   localhost:27017   FacultySystemDB

```
db.student.find({})
```

student   🕐 0.002 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false

```
db.student.insertMany([
  {
    "FirstName": "Nouran",
    "LastName": "Tarek",
    "Age": 22,
    "Faculty": {
      "Name": "ComputerScience",
      "Address": "Cairo"
    },
    "Grades": [
      {
        "CourseName": "C",
        "Grade": 90,
        "Pass": true
      },
      {
        "CourseName": "C++",
```

🔲 student 🕐 0.002 sec.

_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1 ☐ ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false
2 ☐ ObjectId("6...	Nouran	Tarek	22.0	{ 2 fields }	[3 elements]	false
3 ☐ ObjectId("6...	Ali	Sami	40.0	{ 2 fields }	[3 elements]	true
4 ☐ ObjectId("6...	Sandy	Ahmed	22.0	{ 2 fields }	[3 elements]	true
5 ☐ ObjectId("6...	Ahmed	Sami	40.0	{ 2 fields }	[3 elements]	true

4. Retrieve the following data:

    ● All Students

```
db.student.find({})
```

🔲 student 🕐 0.002 sec.

_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1 ☐ ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false
2 ☐ ObjectId("6...	Nouran	Tarek	22.0	{ 2 fields }	[3 elements]	false
3 ☐ ObjectId("6...	Ali	Sami	40.0	{ 2 fields }	[3 elements]	true
4 ☐ ObjectId("6...	Sandy	Ahmed	22.0	{ 2 fields }	[3 elements]	true
5 ☐ ObjectId("6...	Ahmed	Sami	40.0	{ 2 fields }	[3 elements]	true

● Student with specific First Name.

```
db.student.find({"FirstName":"Mina"})
```

robo3t

student 0.005 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false

● Students who his First Name=Ahmed, or Last Name= Ahmed.

```
db.student.find({$or:[{"FirstName":"Ahmed"},{"LastName":"Ahmed"}]})
```

robo3t

student 0.006 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Sandy	Ahmed	22.0	{ 2 fields }	[3 elements]	true
2	ObjectId("6...	Ahmed	Sami	40.0	{ 2 fields }	[3 elements]	true

● Students that their First name isn't "Ahmed".

```
db.student.find({"FirstName":{$ne:"Ahmed"}})
```

robo3t

student 0.005 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false
2	ObjectId("6...	Nouran	Tarek	22.0	{ 2 fields }	[3 elements]	false
3	ObjectId("6...	Ali	Sami	40.0	{ 2 fields }	[3 elements]	true
4	ObjectId("6...	Sandy	Ahmed	22.0	{ 2 fields }	[3 elements]	true

● Students with Age more than or equal to 21, and their faculty isn't NULL.

```
db.student.find({$and: [{ "Age": { $gte: 21 } },{ "Faculty": { $ne: null } }]});
```

robo3t

student 0.002 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false
2	ObjectId("6...	Nouran	Tarek	22.0	{ 2 fields }	[3 elements]	false
3	ObjectId("6...	Ali	Sami	40.0	{ 2 fields }	[3 elements]	true
4	ObjectId("6...	Sandy	Ahmed	22.0	{ 2 fields }	[3 elements]	true
5	ObjectId("6...	Ahmed	Sami	40.0	{ 2 fields }	[3 elements]	true
6	ObjectId("6...	Ameer	Tarek	21.0	{ 2 fields }	[3 elements]	false

● Display student with specific First Name, and display his First Name,

   Last name, IsFired fields only.

```
db.student.find({"FirstName":"Nouran"},{"FirstName":1,"LastName":1,"IsFired":1,"_id":0});
```

robo3t

student 0.002 sec.

	FirstName	LastName	IsFired
1	Nouran	Tarek	false

5. Update the student with specific FirstName, and change his LastName.

```
db.student.find({"FirstName":"Ameer"});
```

robo3t

student 0.001 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Ameer	Tarek	21.0	{ 2 fields }	[3 elements]	false

```
db.student.find({"FirstName":"Ameer"});
db.student.updateOne({"FirstName":"Ameer"},{$set:{"LastName":"Fahmy"}});
```

robo3t

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Ameer	Fahmy	21.0	{ 2 fields }	[3 elements]	false

student 🕑 0.014 sec.

6. Delete Fired students.

robo3t

student 🕑 0.002 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false
2	ObjectId("6...	Nouran	Tarek	22.0	{ 2 fields }	[3 elements]	false
3	ObjectId("6...	Ali	Sami	40.0	{ 2 fields }	[3 elements]	true
4	ObjectId("6...	Sandy	Ahmed	22.0	{ 2 fields }	[3 elements]	true
5	ObjectId("6...	Ahmed	Sami	40.0	{ 2 fields }	[3 elements]	true
6	ObjectId("6...	Ameer	Fahmy	21.0	{ 2 fields }	[3 elements]	false

```
db.student.deleteMany({"IsFired":true})
```

robo3t

student 🕑 0.001 sec.

	_id	FirstName	LastName	Age	Faculty	Grades	IsFired
1	ObjectId("6...	Mina	Nagy	30.0	{ 2 fields }	[3 elements]	false
2	ObjectId("6...	Nouran	Tarek	22.0	{ 2 fields }	[3 elements]	false
3	ObjectId("6...	Ameer	Fahmy	21.0	{ 2 fields }	[3 elements]	false

7. Delete all students collection.

```
db.student.drop();
```

robo3t

🕐 0.013 sec.

true

Faculty SystemDB
  ✓ FacultySystemDB
    ✓ Collections (2)
      > student
      > temp

✓ FacultySystemDB
  ✓ Collections (1)
    > temp
  > Functions
  > Users
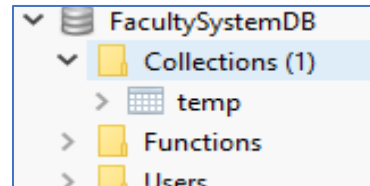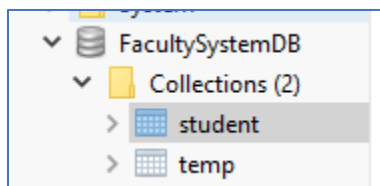
8. Delete the whole DB.

```
db.dropDatabase()
```

robo3t

🕐 0.008 sec.

	ok
1	##.## 1.0

✓ FacultySystemDB
  ✓ Collections (1)
    > temp
  > Functions
  > Users

✓ connection1 (4)
  > System
  > config
  > iti