Student Assignment

This MongoDB assignment contains 15 questions based on a student dataset. Each question is followed by its corresponding MongoDB query using the collection name 'student'.

	A	B	C	D	E	F
1	_Id	name	class	age	gender	city
2	1	nishant kumar	msc	21	male	noida
3	2	vaibhav kumar	phd	25	male	delhi
4	3	vaishali	bca	26	female	dehradun
5	4	kannu	msc	21	female	noida
6	5	gaurav	btech	25	male	haridwar

1. Insert a new student named 'Anjali Sharma', class 'MBA', age 24, gender 'female', city 'Mumbai'.

2. 2. Find all students from Noida.

```
project> db.student.find({ city: "noida" })
[
  {
    _id: ObjectId('682a1b6080fa8500aa84ad45'),
    _Id: 1,
    name: 'nishant kumar',
    class: 'msc',
    age: 21,
    gender: 'male',
    city: 'noida'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad48'),
    _Id: 4,
    name: 'kannu',
    class: 'msc',
    age: 21,
    gender: 'female',
    city: 'noida'
  }
]
```

3. 3. Find all male students.

```
project> db.student.find({ gender: "male" })
[
  {
    _id: ObjectId('682a1b6080fa8500aa84ad45'),
    _Id: 1,
    name: 'nishant kumar',
    class: 'msc',
    age: 21,
    gender: 'male',
    city: 'noida'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad46'),
    _Id: 2,
    name: 'vaibhav kumar',
    class: 'phd',
    age: 25,
    gender: 'male',
    city: 'delhi'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad49'),
    _Id: 5,
    name: 'gaurav',
    class: 'btech',
    age: 25,
    gender: 'male',
    city: 'haridwar'
  }
]
```

4. 4. Find all students whose age is greater than 22.

```
project> db.student.find({ age: { $gt: 22 } })
[
  {
    _id: ObjectId('682a1b6080fa8500aa84ad46'),
    _Id: 2,
    name: 'vaibhav kumar',
    class: 'phd',
    age: 25,
    gender: 'male',
    city: 'delhi'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad47'),
    _Id: 3,
    name: 'vaishali',
    class: 'bca',
    age: 26,
    gender: 'female',
    city: 'dehradun'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad49'),
    _Id: 5,
    name: 'gaurav',
    class: 'btech',
    age: 25,
    gender: 'male',
    city: 'haridwar'
  },
  {
    _id: ObjectId('682a1b8d040f203117cb0ce2'),
    _Id: 6,
    name: 'Anjali Sharma',
    class: 'mba',
    age: 24,
```

5. 5. Update the city of the student with _Id: 2 to 'gurgaon'.

```
project> db.student.updateOne({ _Id: 2 }, { $set: { city: "gurgaon" } })
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
project>
```

6. 6. Delete all students whose age is less than 22.

```
project> db.student.deleteMany({ age: { $lt: 22 } })
{ acknowledged: true, deletedCount: 2 }
project>
```

7. 7. Find the student with the name 'vaibhav kumar'.

```
project> db.student.find({ name: "vaibhav kumar" });
[
  {
    _id: ObjectId('682a1b6080fa8500aa84ad46'),
    _Id: 2,
    name: 'vaibhav kumar',
    class: 'phd',
    age: 25,
    gender: 'male',
    city: 'gurgaon'
  }
]
project>
```

8. 8. Update the class of student 'vaishali' to 'MCA'.

```
project> db.student.updateOne({ name: "vaishali" }, { $set: { class: "mca" } });
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
project>
```

9. 9. List all students sorted by age in ascending order.

```
project> db.student.find().sort({ age: 1 });
[
  {
    _id: ObjectId('682a1b8d040f203117cb0ce2'),
    _Id: 6,
    name: 'Anjali Sharma',
    class: 'mba',
    age: 24,
    gender: 'female',
    city: 'mumbai'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad46'),
    _Id: 2,
    name: 'vaibhav kumar',
    class: 'phd',
    age: 25,
    gender: 'male',
    city: 'gurgaon'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad49'),
    _Id: 5,
    name: 'gaurav',
    class: 'btech',
    age: 25,
    gender: 'male',
    city: 'haridwar'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad47'),
    _Id: 3,
    name: 'vaishali',
    class: 'mca',
    age: 26,
```

10. 10. Find all students, showing only their name and city.

```
project> db.student.find({}, { name: 1, city: 1, _id: 0 });
[
  { name: 'vaibhav kumar', city: 'gurgaon' },
  { name: 'vaishali', city: 'dehradun' },
  { name: 'gaurav', city: 'haridwar' },
  { name: 'Anjali Sharma', city: 'mumbai' }
]
project>
```

11. 11. Count how many students are from each city.

```
project> db.student.aggregate([{ $group: { _id: "$city", total: { $sum: 1 } } }]);
[
  { _id: 'mumbai', total: 1 },
  { _id: 'gurgaon', total: 1 },
  { _id: 'haridwar', total: 1 },
  { _id: 'dehradun', total: 1 }
]
project>
```

12. 12. Group students by gender and count them.

```
project> db.student.aggregate([{ $group: { _id: "$gender", count: { $sum: 1 } } }]);
[ { _id: 'female', count: 2 }, { _id: 'male', count: 2 } ]
project>
```

13. 13. Find the maximum age of any student.

```
project> db.student.aggregate([{ $group: { _id: null, maxAge: { $max: "$age" } } }]);
[ { _id: null, maxAge: 26 } ]
project>
```

14. 14. Find students whose name starts with 'v'.

```
project> db.student.find({ name: /^v/i });
[
  {
    _id: ObjectId('682a1b6080fa8500aa84ad46'),
    _Id: 2,
    name: 'vaibhav kumar',
    class: 'phd',
    age: 25,
    gender: 'male',
    city: 'gurgaon'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad47'),
    _Id: 3,
    name: 'vaishali',
    class: 'mca',
    age: 26,
    gender: 'female',
    city: 'dehradun'
  }
]
project>
```

15. 15. Find all students who are not from Delhi.

```
project> db.student.find({ city: { $ne: "delhi" } });
[
  {
    _id: ObjectId('682a1b6080fa8500aa84ad46'),
    _Id: 2,
    name: 'vaibhav kumar',
    class: 'phd',
    age: 25,
    gender: 'male',
    city: 'gurgaon'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad47'),
    _Id: 3,
    name: 'vaishali',
    class: 'mca',
    age: 26,
    gender: 'female',
    city: 'dehradun'
  },
  {
    _id: ObjectId('682a1b6080fa8500aa84ad49'),
    _Id: 5,
    name: 'gaurav',
    class: 'btech',
    age: 25,
    gender: 'male',
    city: 'haridwar'
  },
  {
    _id: ObjectId('682a1b8d040f203117cb0ce2'),
    _Id: 6,
    name: 'Anjali Sharma',
    class: 'mba',
    age: 24,
```


{
_id: ObjectId('682a1b8d040f203117cb0ce2'),
_Id: 6,
name: 'Anjali Sharma',
class: 'mba',
age: 24,
gender: 'female',
city: 'mumbai'
}
]
project>