**Connect with MongoDB from mongo shell and perform the following operations using the MongoDB functions.**

**1. Create two collections named studentInfoand studentAcademicInfo.**

**Ans-**

use("csea");

db.createCollection("StudentInfo");

db.createCollection("StudentAcademicInfo");

**Output:-**

{

"ok": 1

}

**2. Insert the respective record of “Rahul Sharma” in both collections.**

**Ans-**

use("csea");

db.StudentInfo.insertOne({

name: "Rahul Sharma",

rollno: 101,

mobile: "9876543210",

email: "rahul.sharma@example.com",

address: {

city: "Bhubaneswar",

state: "Odisha",

pin: "400001",

},

});

use("csea");

db.StudentAcademicInfo.insertOne({

rollno: 101,

program: "B.Tech",

branch: "Computer Science",

cgpa: 8.8,

});

**Output:-**

{

"acknowledged": true,

"insertedId": {

"$oid": "65f43dbb0bbdc41b15e82ead"

}

}

**3. Using the insertMany function insert the reset of the documents in the respective collections.**

**Ans-**

use("csea");

db.StudentInfo.insertMany([

{

name: "Priya Patel",

rollno: 102,

mobile: "8765432109",

email: "priya.patel@example.com",

address: {

city: "Ahmedabad",

state: "Gujarat",

pin: "380001",

},

},

{

name: "Sandeep Singh",

rollno: 103,

mobile: "7654321098",

email: "sandeep.singh@example.com",

address: {

city: "Delhi",

state: "Delhi",

pin: "110001",

},

},

{

name: "Neha Gupta",

rollno: 104,

mobile: "6543210987",

email: "neha.gupta@example.com",

address: {

city: "Bangalore",

state: "Karnataka",

pin: "560001",

},

},

{

name: "Rajesh Verma",

rollno: 105,

mobile: "5432109876",

email: "rajesh.verma@example.com",

address: {

city: "Chennai",

state: "Tamil Nadu",

pin: "600001",

},

},

{

name: "Anita Sharma",

rollno: 106,

mobile: "4321098765",

email: "anita.sharma@example.com",

address: {

city: "Kolkata",

state: "West Bengal",

pin: "700001",

},

},

{

name: "Amit Patel",

rollno: 107,

mobile: "3210987654",

email: "amit.patel@example.com",

address: {

city: "Hyderabad",

state: "Telangana",

pin: "500001",

},

},

{

name: "Deepa Singh",

rollno: 108,

mobile: "2109876543",

email: "deepa.singh@example.com",

address: {

city: "Pune",

state: "Maharashtra",

pin: "411001",

},

},

{

name: "Rajat Verma",

rollno: 109,

mobile: "1098765432",

email: "rajat.verma@example.com",

address: {

city: "Jaipur",

state: "Rajasthan",

pin: "302001",

},

},

{

name: "Pooja Gupta",

rollno: 110,

mobile: "9876543210",

email: "pooja.gupta@example.com",

address: {

city: "Lucknow",

state: "Uttar Pradesh",

pin: "226001",

},

},

]);

use("csea");

db.StudentAcademicInfo.insertMany([

{

rollno: 102,

program: "B.Tech",

branch: "Mechanical Engineering",

cgpa: 9.5,

},

{

rollno: 103,

program: "B.Tech",

branch: "Electrical Engineering",

cgpa: 8.9,

},

{

rollno: 104,

program: "B.Tech",

branch: "Civil Engineering",

cgpa: 7.7,

},

{

rollno: 105,

program: "B.Tech",

branch: "Electrical Engineering",

cgpa: 9.0,

},

{

rollno: 106,

program: "B.Tech",

branch: "Information Technology",

cgpa: 9.6,

},

{

rollno: 107,

program: "M.Tech",

branch: "Aerospace Engineering",

cgpa: 9.9,

},

{

rollno: 108,

program: "M.Tech",

branch: "Biotechnology",

cgpa: 8.8,

},

{

rollno: 109,

program: "B.Tech",

branch: "Computer Science",

cgpa: 9.7,

},

{

rollno: 110,

program: "B.Tech",

branch: "Computer Science",

cgpa: 9.0,

},

]);

**Output:-**

{

"acknowledged": true,

"insertedIds": {

"0": {

"$oid": "65f43e254f062cbbe35df178"

},

"1": {

"$oid": "65f43e254f062cbbe35df179"

},

"2": {

"$oid": "65f43e254f062cbbe35df17a"

},

"3": {

"$oid": "65f43e254f062cbbe35df17b"

},

"4": {

"$oid": "65f43e254f062cbbe35df17c"

},

"5": {

"$oid": "65f43e254f062cbbe35df17d"

},

"6": {

"$oid": "65f43e254f062cbbe35df17e"

},

"7": {

"$oid": "65f43e254f062cbbe35df17f"

},

"8": {

"$oid": "65f43e254f062cbbe35df180"

}

}

}

**4. Display all the available documents from both the collections.**

**Ans-**

use("csea");

db.StudentInfo.find();

db.StudentAcademicInfo.find();

**Output:-**

[

{

"\_id": {

"$oid": "65f43dbb0bbdc41b15e82eac"

},

"name": "Rahul Sharma",

"rollno": 101,

"mobile": "9876543210",

"email": "rahul.sharma@example.com",

"address": {

"city": "Bhubaneswar",

"state": "Odisha",

"pin": "400001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df16f"

},

"name": "Priya Patel",

"rollno": 102,

"mobile": "8765432109",

"email": "priya.patel@example.com",

"address": {

"city": "Ahmedabad",

"state": "Gujarat",

"pin": "380001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df170"

},

"name": "Sandeep Singh",

"rollno": 103,

"mobile": "7654321098",

"email": "sandeep.singh@example.com",

"address": {

"city": "Delhi",

"state": "Delhi",

"pin": "110001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df171"

},

"name": "Neha Gupta",

"rollno": 104,

"mobile": "6543210987",

"email": "neha.gupta@example.com",

"address": {

"city": "Bangalore",

"state": "Karnataka",

"pin": "560001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df172"

},

"name": "Rajesh Verma",

"rollno": 105,

"mobile": "5432109876",

"email": "rajesh.verma@example.com",

"address": {

"city": "Chennai",

"state": "Tamil Nadu",

"pin": "600001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df173"

},

"name": "Anita Sharma",

"rollno": 106,

"mobile": "4321098765",

"email": "anita.sharma@example.com",

"address": {

"city": "Kolkata",

"state": "West Bengal",

"pin": "700001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df174"

},

"name": "Amit Patel",

"rollno": 107,

"mobile": "3210987654",

"email": "amit.patel@example.com",

"address": {

"city": "Hyderabad",

"state": "Telangana",

"pin": "500001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df175"

},

"name": "Deepa Singh",

"rollno": 108,

"mobile": "2109876543",

"email": "deepa.singh@example.com",

"address": {

"city": "Pune",

"state": "Maharashtra",

"pin": "411001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df176"

},

"name": "Rajat Verma",

"rollno": 109,

"mobile": "1098765432",

"email": "rajat.verma@example.com",

"address": {

"city": "Jaipur",

"state": "Rajasthan",

"pin": "302001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df177"

},

"name": "Pooja Gupta",

"rollno": 110,

"mobile": "9876543210",

"email": "pooja.gupta@example.com",

"address": {

"city": "Lucknow",

"state": "Uttar Pradesh",

"pin": "226001"

}

}

]

[

{

"\_id": {

"$oid": "65f43dbb0bbdc41b15e82ead"

},

"rollno": 101,

"program": "B.Tech",

"branch": "Computer Science",

"cgpa": 8.8

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df178"

},

"rollno": 102,

"program": "B.Tech",

"branch": "Mechanical Engineering",

"cgpa": 9.5

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df179"

},

"rollno": 103,

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 8.9

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17a"

},

"rollno": 104,

"program": "B.Tech",

"branch": "Civil Engineering",

"cgpa": 7.7

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17b"

},

"rollno": 105,

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 9

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17c"

},

"rollno": 106,

"program": "B.Tech",

"branch": "Information Technology",

"cgpa": 9.6

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17d"

},

"rollno": 107,

"program": "M.Tech",

"branch": "Aerospace Engineering",

"cgpa": 9.9

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17e"

},

"rollno": 108,

"program": "M.Tech",

"branch": "Biotechnology",

"cgpa": 8.8

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17f"

},

"rollno": 109,

"program": "B.Tech",

"branch": "Computer Science",

"cgpa": 9.7

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df180"

},

"rollno": 110,

"program": "B.Tech",

"branch": "Computer Science",

"cgpa": 9

}

]

**5. Display the academic details of roll number 102.**

**Ans-**

use("csea");

db.StudentAcademicInfo.find({ rollno: 102 });

**Output:-**

[

{

"\_id": {

"$oid": "65f43e254f062cbbe35df178"

},

"rollno": 102,

"program": "B.Tech",

"branch": "Mechanical Engineering",

"cgpa": 9.5

}

]

**6. Update the mobile number of roll number 103 to 9876543211.**

**Ans-**

use("csea");

db.StudentInfo.updateOne({ rollno: 103 }, { $set: { mobile: "9876543211" } });

**Output:-**

{

"acknowledged": true,

"insertedId": null,

"matchedCount": 1,

"modifiedCount": 1,

"upsertedCount": 0

}

**7. Update the address of roll number 106 and set city to Cuttack and state to Odisha**

**Ans-**

use("csea");

db.StudentInfo.updateOne(

{ rollno: 106 },

{ $set: { address: { city: "Cuttack", state: "Odisha" } } }

);

**Output:-**

{

"acknowledged": true,

"insertedId": null,

"matchedCount": 1,

"modifiedCount": 1,

"upsertedCount": 0

}

**8. Update the branch name from “Computer Science” to “Computer Science and Engineering”.**

**Ans-**

use("csea");

db.StudentAcademicInfo.updateMany(

{ branch: "Computer Science" },

{ $set: { branch: "Computer Science and Engineering" } }

);

**Output:-**

{

"acknowledged": true,

"insertedId": null,

"matchedCount": 3,

"modifiedCount": 3,

"upsertedCount": 0

}

**9. Display the academic details of the students who have a 9 or more CGPA.**

**Ans-**

use("csea");

db.StudentAcademicInfo.find({ cgpa: { $gt: 9.0 } });

**Output:-**

[

{

"\_id": {

"$oid": "65f43e254f062cbbe35df178"

},

"rollno": 102,

"program": "B.Tech",

"branch": "Mechanical Engineering",

"cgpa": 9.5

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17c"

},

"rollno": 106,

"program": "B.Tech",

"branch": "Information Technology",

"cgpa": 9.6

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17d"

},

"rollno": 107,

"program": "M.Tech",

"branch": "Aerospace Engineering",

"cgpa": 9.9

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17f"

},

"rollno": 109,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9.7

}

]

**10. Display the academic details of the Computer Science and engineering students who have scored more than 9.**

**Ans-**

use("csea");

db.StudentAcademicInfo.find({

branch: "Computer Science and Engineering",

cgpa: { $gt: 9.0 },

});

**Output:-**

[

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17f"

},

"rollno": 109,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9.7

}

]

**11. Display the students' details from the states – Odisha, Maharashtra, and Karnataka.**

**Ans-**

use("csea");

db.StudentInfo.find({

"address.state": { $in: ["Odisha", "Maharashtra", "Karnataka"] },

});

**Output:-**

[

{

"\_id": {

"$oid": "65f43dbb0bbdc41b15e82eac"

},

"name": "Rahul Sharma",

"rollno": 101,

"mobile": "9876543210",

"email": "rahul.sharma@example.com",

"address": {

"city": "Bhubaneswar",

"state": "Odisha",

"pin": "400001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df171"

},

"name": "Neha Gupta",

"rollno": 104,

"mobile": "6543210987",

"email": "neha.gupta@example.com",

"address": {

"city": "Bangalore",

"state": "Karnataka",

"pin": "560001"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df173"

},

"name": "Anita Sharma",

"rollno": 106,

"mobile": "4321098765",

"email": "anita.sharma@example.com",

"address": {

"city": "Cuttack",

"state": "Odisha"

}

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df175"

},

"name": "Deepa Singh",

"rollno": 108,

"mobile": "2109876543",

"email": "deepa.singh@example.com",

"address": {

"city": "Pune",

"state": "Maharashtra",

"pin": "411001"

}

}

]

**12. Display the academic details in descending order of CGPA.**

**Ans-**

use("csea");

db.StudentAcademicInfo.find().sort({ cgpa: -1 });

**Output:-**

[

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17d"

},

"rollno": 107,

"program": "M.Tech",

"branch": "Aerospace Engineering",

"cgpa": 9.9

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17f"

},

"rollno": 109,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9.7

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17c"

},

"rollno": 106,

"program": "B.Tech",

"branch": "Information Technology",

"cgpa": 9.6

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df178"

},

"rollno": 102,

"program": "B.Tech",

"branch": "Mechanical Engineering",

"cgpa": 9.5

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17b"

},

"rollno": 105,

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 9

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df180"

},

"rollno": 110,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df179"

},

"rollno": 103,

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 8.9

},

{

"\_id": {

"$oid": "65f43dbb0bbdc41b15e82ead"

},

"rollno": 101,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 8.8

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17e"

},

"rollno": 108,

"program": "M.Tech",

"branch": "Biotechnology",

"cgpa": 8.8

},

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17a"

},

"rollno": 104,

"program": "B.Tech",

"branch": "Civil Engineering",

"cgpa": 7.7

}

]

**13. Display the number of students available in each department.**

**Ans-**

use("csea");

db.StudentAcademicInfo.aggregate({

$group: {

\_id: "$branch",

NoOfStudents: { $sum: 1 },

},

});

**Output:-**

[

{

"\_id": "Mechanical Engineering",

"NoOfStudents": 1

},

{

"\_id": "Electrical Engineering",

"NoOfStudents": 2

},

{

"\_id": "Civil Engineering",

"NoOfStudents": 1

},

{

"\_id": "Aerospace Engineering",

"NoOfStudents": 1

},

{

"\_id": "Biotechnology",

"NoOfStudents": 1

},

{

"\_id": "Computer Science and Engineering",

"NoOfStudents": 3

},

{

"\_id": "Information Technology",

"NoOfStudents": 1

}

]

**14. Display the number of students enrolled in the M.Tech program.**

**Ans-**

use("csea");

db.StudentAcademicInfo.aggregate(

{

$group: {

\_id: "$program",

NoOfStudents: { $sum: 1 },

},

},

{

$match: { \_id: "M.Tech" },

}

);

**Output:-**

[

{

"\_id": "M.Tech",

"NoOfStudents": 2

}

]

**15. Display the average CGPA of all the students.**

**Ans-**

use("csea");

db.StudentAcademicInfo.aggregate({

$group: {

\_id: null,

avgCGPA: { $avg: "$cgpa" },

},

});

**Output:-**

[

{

"\_id": null,

"avgCGPA": 9.09

}

]

**16. Display all the details of each student available in the database.**

**Ans-**

use("csea");

db.StudentInfo.aggregate([

{

$lookup: {

from: "StudentAcademicInfo",

localField: "rollno",

foreignField: "rollno",

as: "Academic Details", //alias name

},

},

]);

**Output:-**

[

{

"\_id": {

"$oid": "65f43dbb0bbdc41b15e82eac"

},

"name": "Rahul Sharma",

"rollno": 101,

"mobile": "9876543210",

"email": "rahul.sharma@example.com",

"address": {

"city": "Bhubaneswar",

"state": "Odisha",

"pin": "400001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43dbb0bbdc41b15e82ead"

},

"rollno": 101,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 8.8

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df16f"

},

"name": "Priya Patel",

"rollno": 102,

"mobile": "8765432109",

"email": "priya.patel@example.com",

"address": {

"city": "Ahmedabad",

"state": "Gujarat",

"pin": "380001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df178"

},

"rollno": 102,

"program": "B.Tech",

"branch": "Mechanical Engineering",

"cgpa": 9.5

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df170"

},

"name": "Sandeep Singh",

"rollno": 103,

"mobile": "9876543211",

"email": "sandeep.singh@example.com",

"address": {

"city": "Delhi",

"state": "Delhi",

"pin": "110001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df179"

},

"rollno": 103,

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 8.9

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df171"

},

"name": "Neha Gupta",

"rollno": 104,

"mobile": "6543210987",

"email": "neha.gupta@example.com",

"address": {

"city": "Bangalore",

"state": "Karnataka",

"pin": "560001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17a"

},

"rollno": 104,

"program": "B.Tech",

"branch": "Civil Engineering",

"cgpa": 7.7

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df172"

},

"name": "Rajesh Verma",

"rollno": 105,

"mobile": "5432109876",

"email": "rajesh.verma@example.com",

"address": {

"city": "Chennai",

"state": "Tamil Nadu",

"pin": "600001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17b"

},

"rollno": 105,

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 9

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df173"

},

"name": "Anita Sharma",

"rollno": 106,

"mobile": "4321098765",

"email": "anita.sharma@example.com",

"address": {

"city": "Cuttack",

"state": "Odisha"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17c"

},

"rollno": 106,

"program": "B.Tech",

"branch": "Information Technology",

"cgpa": 9.6

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df174"

},

"name": "Amit Patel",

"rollno": 107,

"mobile": "3210987654",

"email": "amit.patel@example.com",

"address": {

"city": "Hyderabad",

"state": "Telangana",

"pin": "500001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17d"

},

"rollno": 107,

"program": "M.Tech",

"branch": "Aerospace Engineering",

"cgpa": 9.9

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df175"

},

"name": "Deepa Singh",

"rollno": 108,

"mobile": "2109876543",

"email": "deepa.singh@example.com",

"address": {

"city": "Pune",

"state": "Maharashtra",

"pin": "411001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17e"

},

"rollno": 108,

"program": "M.Tech",

"branch": "Biotechnology",

"cgpa": 8.8

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df176"

},

"name": "Rajat Verma",

"rollno": 109,

"mobile": "1098765432",

"email": "rajat.verma@example.com",

"address": {

"city": "Jaipur",

"state": "Rajasthan",

"pin": "302001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df17f"

},

"rollno": 109,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9.7

}

]

},

{

"\_id": {

"$oid": "65f43e244f062cbbe35df177"

},

"name": "Pooja Gupta",

"rollno": 110,

"mobile": "9876543210",

"email": "pooja.gupta@example.com",

"address": {

"city": "Lucknow",

"state": "Uttar Pradesh",

"pin": "226001"

},

"Academic Details": [

{

"\_id": {

"$oid": "65f43e254f062cbbe35df180"

},

"rollno": 110,

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9

}

]

}

]

**17. Display the roll, name, program, branch, and cgpa of each student.**

**Ans-**

use("csea");

db.StudentInfo.aggregate([

{

$lookup: {

from: "StudentAcademicInfo",

localField: "rollno",

foreignField: "rollno",

as: "Academic Details", //alias name

},

},

{

$project: {

\_id: 0,

rollno: 1,

name: 1,

"Academic Details.program": 1,

"Academic Details.branch": 1,

"Academic Details.cgpa": 1,

},

},

]);

**Output:-**

[

{

"name": "Rahul Sharma",

"rollno": 101,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 8.8

}

]

},

{

"name": "Priya Patel",

"rollno": 102,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Mechanical Engineering",

"cgpa": 9.5

}

]

},

{

"name": "Sandeep Singh",

"rollno": 103,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 8.9

}

]

},

{

"name": "Neha Gupta",

"rollno": 104,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Civil Engineering",

"cgpa": 7.7

}

]

},

{

"name": "Rajesh Verma",

"rollno": 105,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Electrical Engineering",

"cgpa": 9

}

]

},

{

"name": "Anita Sharma",

"rollno": 106,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Information Technology",

"cgpa": 9.6

}

]

},

{

"name": "Amit Patel",

"rollno": 107,

"Academic Details": [

{

"program": "M.Tech",

"branch": "Aerospace Engineering",

"cgpa": 9.9

}

]

},

{

"name": "Deepa Singh",

"rollno": 108,

"Academic Details": [

{

"program": "M.Tech",

"branch": "Biotechnology",

"cgpa": 8.8

}

]

},

{

"name": "Rajat Verma",

"rollno": 109,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9.7

}

]

},

{

"name": "Pooja Gupta",

"rollno": 110,

"Academic Details": [

{

"program": "B.Tech",

"branch": "Computer Science and Engineering",

"cgpa": 9

}

]

}

]

**18. Display the roll, name, city, state, and cgpa of the students who are from Odisha.**

**Ans-**

use("csea");

db.StudentInfo.aggregate([

{

$lookup: {

from: "StudentAcademicInfo",

localField: "rollno",

foreignField: "rollno",

as: "Academic Details", //alias name

},

},

{

$match: { "address.state": "Odisha" },

},

{

$project: {

\_id: 0,

rollno: 1,

name: 1,

"address.city": 1,

"address.state": 1,

"Academic Details.cgpa": 1,

},

},

]);

**Output:-**

[

{

"name": "Rahul Sharma",

"rollno": 101,

"address": {

"city": "Bhubaneswar",

"state": "Odisha"

},

"Academic Details": [

{

"cgpa": 8.8

}

]

},

{

"name": "Anita Sharma",

"rollno": 106,

"address": {

"city": "Cuttack",

"state": "Odisha"

},

"Academic Details": [

{

"cgpa": 9.6

}

]

}

]

**19. Delete the Info and Academic Info of roll number 109**

**Ans-**

use("csea");

db.StudentInfo.deleteOne({ rollno: 109 });

db.StudentAcademicInfo.deleteOne({ rollno: 109 });

**Output:-**

{

"acknowledged": true,

"deletedCount": 1

}

**20. Delete all the students from the M.Tech program**

**Ans-**

use("csea");

db.StudentInfo.deleteMany({

rollno: {

$in: db.StudentAcademicInfo.distinct("rollno", { program: "M.Tech" }),

},

});

db.StudentAcademicInfo.deleteMany({ program: "M.Tech" });

**Output:-**

{

"acknowledged": true,

"deletedCount": 2

}