MongoDB - Aggregation and Indexing: Design and Develop MongoDB Queries using aggregation and

indexing with suitable example using MongoDB.

Create collection student{ Rollno ,Name, Class, Div, Subject,Marks, Address}and enter 6 entries or

more. And perform the following:

1. Find average of total marks in TOC.

2. Find the number of students division wise.

3. Find students of div B who scored min marks in DBMS.

4. Find total sum of marks in SPOS of students staying pune

5. Find the division wise count of students whose DBMS marks.

6. Find the count of each city.

7. Create the simple and compound Indexing on column.ANS :=

1 db.student.insertMany([{ Rollno: 1, Name: "Riya", Class: "TE", Div: "A", Subject: "TOC", Marks: 85, Address: "Pune" }, { Rollno: 2, Name: "Soham", Class: "TE", Div: "B", Subject: "DBMS", Marks: 40, Address: "Mumbai" }, { Rollno: 3, Name: "Meera", Class: "TE", Div: "B", Subject: "DBMS", Marks: 60, Address: "Pune" }, { Rollno: 4, Name: "Anish", Class: "TE", Div: "C", Subject: "SPOS", Marks: 70, Address: "Pune" }, { Rollno: 5, Name: "Sara", Class: "TE", Div: "A", Subject: "TOC", Marks: 90, Address: "Nagpur" }, { Rollno: 6, Name: "Arjun", Class: "TE", Div: "B", Subject: "SPOS", Marks: 50, Address: "Pune" }])

2

db.student.aggregate([{ $match: { Subject: "TOC" } }, { $group: { \_id: "$Subject", avgMarks: { $avg: "$Marks" } } }])

3

db.student.aggregate([{ $group: { \_id: "$Div", count: { $sum: 1 } } }])

4

db.student.aggregate([{ $match: { Div: "B", Subject: "DBMS" } }, { $group: { \_id: "$Div", minMarks: { $min: "$Marks" }, students: { $push: "$Name" } } }])

5

db.student.aggregate([{ $match: { Subject: "SPOS", Address: "Pune" } }, { $group: { \_id: "$Subject", totalMarks: { $sum: "$Marks" } } }])

6

db.student.aggregate([{ $match: { Subject: "DBMS" } }, { $group: { \_id: "$Div", count: { $sum: 1 } } }])

7

db.student.aggregate([{ $group: { \_id: "$Address", count: { $sum: 1 } } }])

8

db.student.createIndex({ Class: 1, Div: 1 })