MongoDB Assignment

Data Collections (data sets) Assumed:

- **`students`**
- **`faculty`**
- **`courses`**
- **`enrollments`**
- **`Activities`**

`ALL This Data Is Uploaded In This Project Folder:` **`Assessment Task`**

Write a Query for Each Question

1. Complex Filters & Projections

Q1. List the names and departments of students who have more than 85% attendance and are skilled in both "**`MongoDB`**" and "**`Python`**".

Q2. Show all faculty who are teaching more than 2 courses. Display their names and the total number of courses they teach.

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2. Joins (`$lookup`) and Aggregations

Q3. Write a query to show each student's name along with the course titles they are enrolled in (use `$lookup` between `enrollments`, `students`, and `courses`).

Q4. For each course, display the course title, number of students enrolled, and average marks (use `$group`).

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3. Grouping, Sorting, and Limiting

Q5. Find the top 3 students with the highest average marks across all enrolled courses.

Q6. Count how many students are in each department. Display the department with the highest number of students.

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4. Update, Upsert, and Delete

Q7. Update attendance to 100% for all students who won any "`Hackathon`".

Q8. Delete all student activity records where the activity year is before 2022.

Q9. Upsert a course record for "`Data Structures`" with ID "`C150`" and credits 4—if it doesn't exist, insert it; otherwise update its title to "`Advanced Data Structures`".

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5. Array & Operator Usage

Q10. Find all students who have "`Python`" as a skill but not "`C++`".

Q11. Return names of students who participated in "`Seminar`" and "`Hackathon`" both.

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6. Subdocuments and Nested Conditions

Q12. Find students who scored more than 80 in "`Web Development`" **only if** they belong to the "`Computer Science`" department.

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7. Advanced Aggregation (Challenge Level)

Q13. For each faculty member, list the names of all students enrolled in their courses along with average marks per student per faculty.

Q14. Show the most popular activity type (e.g., Hackathon, Seminar, etc.) by number of student participants.

Instructions to Submit the Project:

Step 1: Download all The data Form This Folder :👉 `Assessment Task`
Step 2: Load all the Datasets in your MongoDB Database
Step 3: Write a Query for all the Questions
Step 4: Take ScreenShots of all the Query Output. But Make sure **Your Name and Registration in Already written** in a Comment like this (“ // ”). (Screenshots attached)

```
]
college> db.Studeent_details.find() // Name: Ankit Verma, Registration No: 1145423XXXX
[
  {
    _id: ObjectId('67e6d947eb5273ee84713401'),
    name: 'Sita',
    Hobbies: [ 'Walk', 'Cricket' ],
    identity: { hasPanCard: false, hasAdhaarCard: true },
    bio: 'I am a youtuber',
    experience: [
      { company: 'Spotify', duration: 3 },
      { company: 'Paytm', duration: 1 }
    ],
    studentAge_: 24,
    age: -4,
    AgeGroup: 30
  },
```

Step 5: Create A Docs File then over there

- Write the Question
- and Then Answer it (Write Actual Query)
- Add the `ScreenShots(Paste the output)`

Step 6: Convert the Word/Doc File to PDF File

Step 7: Upload both Word/Doc and PDF File In the **Google Form** Which is Circulated in your Whatsapp Group Soon(Check On Regular Basis).