Code:

const fs = require("fs");

// Function to save console output to a file

function saveConsoleLogToFile(logs, filename) {

  fs.writeFileSync(filename, logs.join("\n"), { flag: "a" });

}

// Array to store console logs

let consoleLogs = [];

// Redefine console.log to also save the logs to an array

const originalConsoleLog = console.log;

console.log = function () {

  originalConsoleLog.apply(console, arguments);

  consoleLogs.push(Array.from(arguments).join(" "));

};

const questions = [

  {

    number: 1,

    question: "Create Database: Create a MongoDB database named AIML.",

  },

  {

    number: 2,

    question:

      "Create Collection: Create a collection named employee within the AIML database.",

  },

  {

    number: 3,

    question:

      "Import Employee Records: Import employee records from a JSON file into the employee collection. Save the provided data in a JSON file and use it for import in MongoDB.",

  },

  {

    number: 4,

    question:

      "insertOne: Inserts a single document into the collection. { 'Id': 21, 'Name': 'John Doe', 'Project\_id': 2, 'Hrs\_worked': 35 }",

  },

  {

    number: 5,

    question:

      "insertMany: Inserts multiple documents into the collection. { 'Id': 22, 'Name': 'Jane Smith', 'Project\_id': 1, 'Hrs\_worked': 28 }, { 'Id': 23, 'Name': 'Alice Johnson', 'Project\_id': 3, 'Hrs\_worked': 42 }",

  },

  {

    number: 6,

    question:

      "updateOne: Updates a single document that matches the filter. { 'Id': 21 }, { $set: { 'Hrs\_worked': 40 } }",

  },

  {

    number: 7,

    question:

      "updateMany: Updates multiple documents that match the filter. { 'Hrs\_worked': { $gt: 30 } }, { $set: { 'Overtime': true } }",

  },

  {

    number: 8,

    question: "find an employee by their ID.",

  },

  {

    number: 9,

    question:

      "How would you retrieve all employees who are assigned to a specific project ID?",

  },

  {

    number: 10,

    question:

      "Write a query to find employees who have worked more than 30 hours.",

  },

  {

    number: 11,

    question:

      "Can you demonstrate how to use the $gt operator to find employees who are older than 40?",

  },

  {

    number: 12,

    question: "Explain the purpose of sorting in MongoDB queries.",

  },

  {

    number: 13,

    question:

      "Sort the Employee table based on Age in Ascending order and display.",

  },

  {

    number: 14,

    question:

      "Sort the Employee table based on Hrs\_worked in Descending order and display.",

  },

  {

    number: 15,

    question:

      "Find Employee whose age is greater than 30 and Hrs\_worked greater than 20.",

  },

  {

    number: 16,

    question:

      "Find Employee whose Gender is Male or Hrs\_worked greater than 25.",

  },

  {

    number: 17,

    question: "Find Employee whose Project\_id is not 3.",

  },

  {

    number: 18,

    question:

      "Write a MongoDB query to find all employees who are between the ages of 25 and 35.",

  },

  {

    number: 19,

    question:

      "How would you retrieve employees who have worked between 20 and 30 hours?",

  },

  {

    number: 20,

    question:

      "Write a query to find employees who are either working on Project 1 or Project 2.",

  },

];

n2 = "\n\n";

n1 = "\n";

// 1. Create Database: Create a MongoDB database named AIML.

out1 = use("AIML");

code1 = `use('AIML');`;

//print question and output in proper format

console.log("Question 1:", questions[0].question, n1);

console.log("Code:", code1, n1);

console.log("Output:", out1, n2);

// // 2. Create Collection: Create a collection named employee within the AIML database.

out2 = db.createCollection("employee");

code2 = `db.createCollection('employee');`;

console.log("Question 2:", questions[1].question, n1);

console.log("Code:", code2, n1);

console.log("Output:", out2, n2);

// 3. Import Employee Records: Import employee records from a JSON file into the employee collection.

//Save the following data in a json file and use it for import in Mongodb.

const employeeData = JSON.parse(fs.readFileSync("employee.json"));

out3 = db.employee.insertMany(employeeData);

code3 =

  `const employeeData = JSON.parse(fs.readFileSync('employee.json'));` +

  "\n" +

  `out3 = db.employee.insertMany(employeeData);`;

console.log("Question 1:", questions[1].question, n1);

console.log("Code:", code3, n1);

console.log("Output:", out3, n2);

// 4. insertOne: Inserts a single document into the collection.

// { "Id": 21, "Name": "John Doe", "Project\_id": 2, "Hrs\_worked": 35 }

out4 = db.employee.insertOne({

  Id: 21,

  Name: "John Doe",

  Project\_id: 2,

  Hrs\_worked: 35,

});

code4 = `db.employee.insertOne({ "Id": 21, "Name": "John Doe", "Project\_id": 2, "Hrs\_worked": 35 });`;

console.log("Question 4:", questions[3].question, n1);

console.log("Code: ", code4, n1);

console.log("Output:", out4, n2);

// 5. insertMany: Inserts multiple documents into the collection.

// { "Id": 22, "Name": "Jane Smith", "Project\_id": 1, "Hrs\_worked": 28 },

// { "Id": 23, "Name": "Alice Johnson", "Project\_id": 3, "Hrs\_worked": 42 }

out5 = db.employee.insertMany([

  { Id: 22, Name: "Jane Smith", Project\_id: 1, Hrs\_worked: 28 },

  { Id: 23, Name: "Alice Johnson", Project\_id: 3, Hrs\_worked: 42 },

]);

code5 = `db.employee.insertMany([ { "Id": 22, "Name": "Jane Smith", "Project\_id": 1, "Hrs\_worked": 28 }, { "Id": 23, "Name": "Alice Johnson", "Project\_id": 3, "Hrs\_worked": 42 } ]);`;

console.log("Question 5:", questions[4].question, n1);

console.log("Code: ", code5, n1);

console.log("Output:", out5, n2);

// 6. updateOne: Updates a single document that matches the filter.

// { "Id": 21 }, { $set: { "Hrs\_worked": 40 } }

out6 = db.employee.updateOne({ Id: 21 }, { $set: { Hrs\_worked: 40 } });

code6 = `db.employee.updateOne( { "Id": 21 }, { $set: { "Hrs\_worked": 40 } });`;

console.log("Question 6:", questions[5].question, n1);

console.log("Code:", code6, n1);

console.log("Output:", out6, n2);

// 7. updateMany: Updates multiple documents that match the filter.

// { "Hrs\_worked": { $gt: 30 } }, { $set: { "Overtime": true } }

out7 = db.employee.updateMany(

  { Hrs\_worked: { $gt: 30 } },

  { $set: { Overtime: true } }

);

code7 = `db.employee.updateMany( { "Hrs\_worked": { $gt: 30 } }, { $set: { "Overtime": true } });`;

console.log("Question 7:", questions[6].question, n1);

console.log("Code:", code7, n1);

console.log("Output:", out7, n2);

// 8. find an employee by their ID.

out8 = db.employee.findOne({ Id: 21 });

code8 = `db.employee.findOne({ Id: 21 });`;

console.log("Question 8:", questions[7].question, n1);

console.log("Code:", code8, n1);

console.log("Output:", out8, n2);

// 9. How would you retrieve all employees who are assigned to a specific project ID?

out9 = db.employee.find({ Project\_id: 2 });

code9 = `db.employee.find({ Project\_id: 2 });`;

console.log("Question 9:", questions[8].question), n1;

console.log("Code:", code9, n1);

console.log("Output:", out9, n2);

// 10. Write a query to find employees who have worked more than 30 hours.

out10 = db.employee.find({ Hrs\_worked: { $gt: 30 } });

code10 = `db.employee.find({ Hrs\_worked: { $gt: 30 } });`;

console.log("Question 10:", questions[9].question, n1);

console.log("Code:", code10, n1);

console.log("Output:", out10, n2);

// 11. Can you demonstrate how to use the $gt operator to find employees who are older than 40?

out11 = db.employee.find({ Age: { $gt: 40 } });

code11 = `db.employee.find({ Age: { $gt: 40 } });`;

console.log("Question 11:", questions[10].question, n1);

console.log("Code:", code11, n1);

console.log("Output:", out11, n2);

// 12. Explain the purpose of sorting in MongoDB queries.

out12 =

  "Sorting in MongoDB organizes query results based on specified fields, facilitating data analysis and presentation, improving performance with indexed fields, and enhancing user experience through ordered document retrieval.";

console.log("Question 12:", questions[11].question, n1);

console.log("Answer:", out12, n2);

// 13. Sort the Employee table based on Age in Ascending order and display.

out13 = db.employee.find().sort({ Age: 1 });

code13 = `db.employee.find().sort({ Age: 1 });`;

console.log("Question 13:", questions[12].question, n1);

console.log("Code:", code13, n1);

console.log("Output:", out13, n2);

// 14. Sort the Employee table based on Hrs\_worked in Descending order and display.

out14 = db.employee.find().sort({ Hrs\_worked: -1 });

code14 = `db.employee.find().sort({ Hrs\_worked: -1 });`;

console.log("Question 14:", questions[13].question, n1);

console.log("Code:", code14, n1);

console.log("Output:", out14, n2);

// 15. Find Employee whose age is greater then 30 and Has\_Worked greater then 20.

out15 = db.employee.find({ Age: { $gt: 30 }, Hrs\_worked: { $gt: 20 } });

code15 = `db.employee.find({ Age: { $gt: 30 }, Hrs\_worked: { $gt: 20 } });`;

console.log("Question 15:", questions[14].question, n1);

console.log("Code:", code15, n1);

console.log("Output:", out15, n2);

// 16. Find Employee whose Gender is Male or Has\_Worked greater then 25.

out16 = db.employee.find({

  $or: [{ Gender: "Male" }, { Hrs\_worked: { $gt: 25 } }],

});

code16 = `db.employee.find({ $or: [{ Gender: "Male" }, { Hrs\_worked: { $gt: 25 } }] });`;

console.log("Question 16:", questions[15].question, n1);

console.log("Code:", code16, n1);

console.log("Output:", out16, n2);

// 17. Find Employee whose Project\_id is not 3.

out17 = db.employee.find({ Project\_id: { $ne: 3 } });

code17 = `db.employee.find({ Project\_id: { $ne: 3 } });`;

console.log("Question 17:", questions[16].question, n1);

console.log("Code:", code17, n1);

console.log("Output:", out17, n2);

// 18. Write a MongoDB query to find all employees who are between the ages of 25 and 35.

out18 = db.employee.find({ Age: { $gte: 25, $lte: 35 } });

code18 = `db.employee.find({ Age: { $gte: 25, $lte: 35 } });`;

console.log("Question 18:", questions[17].question, n1);

console.log("Code:", code18, n1);

console.log("Output:", out18, n2);

// 19. How would you retrieve employees who have worked between 20 and 30 hours?

out19 = db.employee.find({ Hrs\_worked: { $gte: 20, $lte: 30 } });

code19 = `db.employee.find({ Hrs\_worked: { $gte: 20, $lte: 30 } });`;

console.log("Question 19:", questions[18].question, n1);

console.log("Code:", code19, n1);

console.log("Output:", out19, n2);

// 20. Write a query to find employees who are either working on Project 1 or Project 2.

out20 = db.employee.find({ Project\_id: { $in: [1, 2] } });

code20 = `db.employee.find({ Project\_id: { $in: [1, 2] } });`;

console.log("Question 20:", questions[19].question, n1);

console.log("Code:", code20, n1);

console.log("Output:", out20, n2);

saveConsoleLogToFile(consoleLogs, "console\_logs.txt");

Code Output:

Question 1 : Create Database: Create a MongoDB database named AIML.

Code: use('AIML');

Output: switched to db AIML

Question 2 : Create Collection: Create a collection named employee within the AIML database.

Code: db.createCollection('employee');

Output: {

    ok: 1

}

Question 1 : Create Collection: Create a collection named employee within the AIML database.

Code:

const employeeData = JSON.parse(fs.readFileSync('employee.json'));

out3 = db.employee.insertMany(employeeData);

Output: {

    acknowledged: true,

    insertedIds: {

        '0': ObjectId('661af00b38ed18538f6bc56f'),

        '1': ObjectId('661af00b38ed18538f6bc570'),

        '2': ObjectId('661af00b38ed18538f6bc571'),

        '3': ObjectId('661af00b38ed18538f6bc572'),

        '4': ObjectId('661af00b38ed18538f6bc573'),

        '5': ObjectId('661af00b38ed18538f6bc574'),

        '6': ObjectId('661af00b38ed18538f6bc575'),

        '7': ObjectId('661af00b38ed18538f6bc576'),

        '8': ObjectId('661af00b38ed18538f6bc577'),

        '9': ObjectId('661af00b38ed18538f6bc578'),

        '10': ObjectId('661af00b38ed18538f6bc579'),

        '11': ObjectId('661af00b38ed18538f6bc57a'),

        '12': ObjectId('661af00b38ed18538f6bc57b'),

        '13': ObjectId('661af00b38ed18538f6bc57c'),

        '14': ObjectId('661af00b38ed18538f6bc57d'),

        '15': ObjectId('661af00b38ed18538f6bc57e'),

        '16': ObjectId('661af00b38ed18538f6bc57f'),

        '17': ObjectId('661af00b38ed18538f6bc580'),

        '18': ObjectId('661af00b38ed18538f6bc581'),

        '19': ObjectId('661af00b38ed18538f6bc582')

    }

}

Question 4 : insertOne: Inserts a single document into the collection.

{

    'Id': 21,

    'Name': 'John Doe',

    'Project\_id': 2,

    'Hrs\_worked': 35

}

Code: db.employee.insertOne({

    "Id": 21,

    "Name": "John Doe",

    "Project\_id": 2,

    "Hrs\_worked": 35

});

Output: {

    acknowledged: true,

    insertedId: ObjectId('661af00b38ed18538f6bc583')

}

Question 5 : insertMany: Inserts multiple documents into the collection.

{

    'Id': 22,

    'Name': 'Jane Smith',

    'Project\_id': 1,

    'Hrs\_worked': 28

},

{

    'Id': 23,

    'Name': 'Alice Johnson',

    'Project\_id': 3,

    'Hrs\_worked': 42

}

Code: db.employee.insertMany([{

    "Id": 22,

    "Name": "Jane Smith",

    "Project\_id": 1,

    "Hrs\_worked": 28

},

{

    "Id": 23,

    "Name": "Alice Johnson",

    "Project\_id": 3,

    "Hrs\_worked": 42

}]);

Output: {

    acknowledged: true,

    insertedIds: {

        '0': ObjectId('661af00b38ed18538f6bc584'),

        '1': ObjectId('661af00b38ed18538f6bc585')

    }

}

Question 6 : updateOne: Updates a single document that matches the filter.

{

    'Id': 21

},

{

    $set: {

        'Hrs\_worked': 40

    }

}

Code: db.employee.updateOne({

    "Id": 21

},

{

    $set: {

        "Hrs\_worked": 40

    }

});

Output: {

    acknowledged: true,

    insertedId: null,

    matchedCount: 1,

    modifiedCount: 1,

    upsertedCount: 0

}

Question 7 : updateMany: Updates multiple documents that match the filter.

{

    'Hrs\_worked': {

        $gt: 30

    }

},

{

    $set: {

        'Overtime': true

    }

}

Code: db.employee.updateMany({

    "Hrs\_worked": {

        $gt: 30

    }

},

{

    $set: {

        "Overtime": true

    }

});

Output: {

    acknowledged: true,

    insertedId: null,

    matchedCount: 13,

    modifiedCount: 13,

    upsertedCount: 0

}

Question 8 : find an employee by their ID.

Code: db.employee.findOne({

    Id: 21

});

Output: {

    \_id: ObjectId('661af00b38ed18538f6bc583'),

    Id: 21,

    Name: 'John Doe',

    Project\_id: 2,

    Hrs\_worked: 40,

    Overtime: true

}

Question 9 : How would you retrieve all employees who are assigned to a specific project ID ?

Code: db.employee.find({

    Project\_id: 2

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc579'),

        Id: 11,

        Name: 'Grace Wilson',

        Age: 42,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 15

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc583'),

        Id: 21,

        Name: 'John Doe',

        Project\_id: 2,

        Hrs\_worked: 40,

        Overtime: true

    }]

}

Question 10 : Write a query to find employees who have worked more than 30 hours.

Code: db.employee.find({

    Hrs\_worked: {

        $gt: 30

    }

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc577'),

        Id: 9,

        Name: 'Charlie Johnson',

        Age: 49,

        Gender: 'Male',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc578'),

        Id: 10,

        Name: 'Charlie Johnson',

        Age: 60,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57c'),

        Id: 14,

        Name: 'Isaac Wilson',

        Age: 21,

        Gender: 'Female',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57d'),

        Id: 15,

        Name: 'Hannah Davis',

        Age: 43,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57e'),

        Id: 16,

        Name: 'Alice Moore',

        Age: 29,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 39,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57f'),

        Id: 17,

        Name: 'David Miller',

        Age: 25,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc581'),

        Id: 19,

        Name: 'Charlie Williams',

        Age: 59,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc583'),

        Id: 21,

        Name: 'John Doe',

        Project\_id: 2,

        Hrs\_worked: 40,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc585'),

        Id: 23,

        Name: 'Alice Johnson',

        Project\_id: 3,

        Hrs\_worked: 42,

        Overtime: true

    }]

}

Question 11 : Can you demonstrate how to use the $gt operator to find employees who are older than 40 ?

Code: db.employee.find({

    Age: {

        $gt: 40

    }

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc56f'),

        Id: 1,

        Name: 'Charlie Moore',

        Age: 44,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 12

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc573'),

        Id: 5,

        Name: 'Bob Davis',

        Age: 41,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 16

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc575'),

        Id: 7,

        Name: 'Frank Brown',

        Age: 49,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 30

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc577'),

        Id: 9,

        Name: 'Charlie Johnson',

        Age: 49,

        Gender: 'Male',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc578'),

        Id: 10,

        Name: 'Charlie Johnson',

        Age: 60,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc579'),

        Id: 11,

        Name: 'Grace Wilson',

        Age: 42,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 15

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57d'),

        Id: 15,

        Name: 'Hannah Davis',

        Age: 43,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc581'),

        Id: 19,

        Name: 'Charlie Williams',

        Age: 59,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc582'),

        Id: 20,

        Name: 'Frank Miller',

        Age: 55,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 24

    }]

}

Question 12 : Explain the purpose of sorting in MongoDB queries.

Answer: Sorting in MongoDB organizes query results based on specified fields,

facilitating data analysis and presentation,

improving performance with indexed fields,

and enhancing user experience through ordered document retrieval.

Question 13 : Sort the Employee table based on Age in Ascending order and display.

Code: db.employee.find().sort({

    Age: 1

});

Output: {

    cursorHasMore: true,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc583'),

        Id: 21,

        Name: 'John Doe',

        Project\_id: 2,

        Hrs\_worked: 40,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc584'),

        Id: 22,

        Name: 'Jane Smith',

        Project\_id: 1,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc585'),

        Id: 23,

        Name: 'Alice Johnson',

        Project\_id: 3,

        Hrs\_worked: 42,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57c'),

        Id: 14,

        Name: 'Isaac Wilson',

        Age: 21,

        Gender: 'Female',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57f'),

        Id: 17,

        Name: 'David Miller',

        Age: 25,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57e'),

        Id: 16,

        Name: 'Alice Moore',

        Age: 29,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 39,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc570'),

        Id: 2,

        Name: 'Frank Smith',

        Age: 36,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 12

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc573'),

        Id: 5,

        Name: 'Bob Davis',

        Age: 41,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 16

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc579'),

        Id: 11,

        Name: 'Grace Wilson',

        Age: 42,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 15

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57d'),

        Id: 15,

        Name: 'Hannah Davis',

        Age: 43,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc56f'),

        Id: 1,

        Name: 'Charlie Moore',

        Age: 44,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 12

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc575'),

        Id: 7,

        Name: 'Frank Brown',

        Age: 49,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 30

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc577'),

        Id: 9,

        Name: 'Charlie Johnson',

        Age: 49,

        Gender: 'Male',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc582'),

        Id: 20,

        Name: 'Frank Miller',

        Age: 55,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 24

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    }]

}

Question 14 : Sort the Employee table based on Hrs\_worked in Descending order and display.

Code: db.employee.find().sort({

    Hrs\_worked: -1

});

Output: {

    cursorHasMore: true,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc585'),

        Id: 23,

        Name: 'Alice Johnson',

        Project\_id: 3,

        Hrs\_worked: 42,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc583'),

        Id: 21,

        Name: 'John Doe',

        Project\_id: 2,

        Hrs\_worked: 40,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57e'),

        Id: 16,

        Name: 'Alice Moore',

        Age: 29,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 39,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc578'),

        Id: 10,

        Name: 'Charlie Johnson',

        Age: 60,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc577'),

        Id: 9,

        Name: 'Charlie Johnson',

        Age: 49,

        Gender: 'Male',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57c'),

        Id: 14,

        Name: 'Isaac Wilson',

        Age: 21,

        Gender: 'Female',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57d'),

        Id: 15,

        Name: 'Hannah Davis',

        Age: 43,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57f'),

        Id: 17,

        Name: 'David Miller',

        Age: 25,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc581'),

        Id: 19,

        Name: 'Charlie Williams',

        Age: 59,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc575'),

        Id: 7,

        Name: 'Frank Brown',

        Age: 49,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 30

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc584'),

        Id: 22,

        Name: 'Jane Smith',

        Project\_id: 1,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc582'),

        Id: 20,

        Name: 'Frank Miller',

        Age: 55,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 24

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc573'),

        Id: 5,

        Name: 'Bob Davis',

        Age: 41,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 16

    }]

}

Question 15 : Find Employee whose age is greater than 30 and Hrs\_worked greater than 20.

Code: db.employee.find({

    Age: {

        $gt: 30

    },

    Hrs\_worked: {

        $gt: 20

    }

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc575'),

        Id: 7,

        Name: 'Frank Brown',

        Age: 49,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 30

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc577'),

        Id: 9,

        Name: 'Charlie Johnson',

        Age: 49,

        Gender: 'Male',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc578'),

        Id: 10,

        Name: 'Charlie Johnson',

        Age: 60,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57d'),

        Id: 15,

        Name: 'Hannah Davis',

        Age: 43,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc581'),

        Id: 19,

        Name: 'Charlie Williams',

        Age: 59,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc582'),

        Id: 20,

        Name: 'Frank Miller',

        Age: 55,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 24

    }]

}

Question 16 : Find Employee whose Gender is Male or Hrs\_worked greater than 25.

Code: db.employee.find({

    $or: [{

        Gender: "Male"

    },

    {

        Hrs\_worked: {

            $gt: 25

        }

    }]

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc56f'),

        Id: 1,

        Name: 'Charlie Moore',

        Age: 44,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 12

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc575'),

        Id: 7,

        Name: 'Frank Brown',

        Age: 49,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 30

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc577'),

        Id: 9,

        Name: 'Charlie Johnson',

        Age: 49,

        Gender: 'Male',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc578'),

        Id: 10,

        Name: 'Charlie Johnson',

        Age: 60,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57c'),

        Id: 14,

        Name: 'Isaac Wilson',

        Age: 21,

        Gender: 'Female',

        Project\_id: 3,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57d'),

        Id: 15,

        Name: 'Hannah Davis',

        Age: 43,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57e'),

        Id: 16,

        Name: 'Alice Moore',

        Age: 29,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 39,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57f'),

        Id: 17,

        Name: 'David Miller',

        Age: 25,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc581'),

        Id: 19,

        Name: 'Charlie Williams',

        Age: 59,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc583'),

        Id: 21,

        Name: 'John Doe',

        Project\_id: 2,

        Hrs\_worked: 40,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc584'),

        Id: 22,

        Name: 'Jane Smith',

        Project\_id: 1,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc585'),

        Id: 23,

        Name: 'Alice Johnson',

        Project\_id: 3,

        Hrs\_worked: 42,

        Overtime: true

    }]

}

Question 17 : Find Employee whose Project\_id is not 3.

Code: db.employee.find({

    Project\_id: {

        $ne: 3

    }

});

Output: {

    cursorHasMore: true,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc56f'),

        Id: 1,

        Name: 'Charlie Moore',

        Age: 44,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 12

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc570'),

        Id: 2,

        Name: 'Frank Smith',

        Age: 36,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 12

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc573'),

        Id: 5,

        Name: 'Bob Davis',

        Age: 41,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 16

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc575'),

        Id: 7,

        Name: 'Frank Brown',

        Age: 49,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 30

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc578'),

        Id: 10,

        Name: 'Charlie Johnson',

        Age: 60,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc579'),

        Id: 11,

        Name: 'Grace Wilson',

        Age: 42,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 15

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57d'),

        Id: 15,

        Name: 'Hannah Davis',

        Age: 43,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57e'),

        Id: 16,

        Name: 'Alice Moore',

        Age: 29,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 39,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57f'),

        Id: 17,

        Name: 'David Miller',

        Age: 25,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc581'),

        Id: 19,

        Name: 'Charlie Williams',

        Age: 59,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc582'),

        Id: 20,

        Name: 'Frank Miller',

        Age: 55,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 24

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc583'),

        Id: 21,

        Name: 'John Doe',

        Project\_id: 2,

        Hrs\_worked: 40,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc584'),

        Id: 22,

        Name: 'Jane Smith',

        Project\_id: 1,

        Hrs\_worked: 28

    }]

}

Question 18 : Write a MongoDB query to find all employees who are between the ages of 25 and 35.

Code: db.employee.find({

    Age: {

        $gte: 25,

        $lte: 35

    }

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57e'),

        Id: 16,

        Name: 'Alice Moore',

        Age: 29,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 39,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57f'),

        Id: 17,

        Name: 'David Miller',

        Age: 25,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 32,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    }]

}

Question 19 : How would you retrieve employees who have worked between 20 and 30 hours ?

Code: db.employee.find({

    Hrs\_worked: {

        $gte: 20,

        $lte: 30

    }

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc575'),

        Id: 7,

        Name: 'Frank Brown',

        Age: 49,

        Gender: 'Male',

        Project\_id: 4,

        Hrs\_worked: 30

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc582'),

        Id: 20,

        Name: 'Frank Miller',

        Age: 55,

        Gender: 'Female',

        Project\_id: 4,

        Hrs\_worked: 24

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc584'),

        Id: 22,

        Name: 'Jane Smith',

        Project\_id: 1,

        Hrs\_worked: 28

    }]

}

Question 20 : Write a query to find employees who are either working on Project 1 or Project 2.

Code: db.employee.find({

    Project\_id: {

        $in: [1, 2]

    }

});

Output: {

    cursorHasMore: false,

    documents: [{

        \_id: ObjectId('661af00b38ed18538f6bc570'),

        Id: 2,

        Name: 'Frank Smith',

        Age: 36,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 12

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc571'),

        Id: 3,

        Name: 'Hannah Brown',

        Age: 33,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 36,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc572'),

        Id: 4,

        Name: 'Hannah Davis',

        Age: 31,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 22

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc574'),

        Id: 6,

        Name: 'Hannah Davis',

        Age: 57,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 28

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc576'),

        Id: 8,

        Name: 'David Williams',

        Age: 60,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 34,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc579'),

        Id: 11,

        Name: 'Grace Wilson',

        Age: 42,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 15

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57a'),

        Id: 12,

        Name: 'Isaac Smith',

        Age: 32,

        Gender: 'Male',

        Project\_id: 2,

        Hrs\_worked: 23

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57b'),

        Id: 13,

        Name: 'Emma Jones',

        Age: 52,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 33,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc57e'),

        Id: 16,

        Name: 'Alice Moore',

        Age: 29,

        Gender: 'Male',

        Project\_id: 1,

        Hrs\_worked: 39,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc580'),

        Id: 18,

        Name: 'Isaac Wilson',

        Age: 32,

        Gender: 'Female',

        Project\_id: 2,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc581'),

        Id: 19,

        Name: 'Charlie Williams',

        Age: 59,

        Gender: 'Female',

        Project\_id: 1,

        Hrs\_worked: 31,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc583'),

        Id: 21,

        Name: 'John Doe',

        Project\_id: 2,

        Hrs\_worked: 40,

        Overtime: true

    },

    {

        \_id: ObjectId('661af00b38ed18538f6bc584'),

        Id: 22,

        Name: 'Jane Smith',

        Project\_id: 1,

        Hrs\_worked: 28

    }]

}