**MONGODB TEST**

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1. **Find the total revenue (price × quantity) for each item, sorted from highest to lowest.**

db.sales.aggregate([

{ $group: { \_id: "$item", totalrevenue: { $sum: { $multiply: ["$price", "$quantity"] } } } },

{ $sort: { totalrevenue: -1 } }

]);

1. **Calculate the total quantity sold per month in 2022.**

db.sales.aggregate([

{ $match: { $expr: { $eq: [{ $year: "$date" }, 2022] } } },

{ $group: { \_id: { month: { $month: "$date" } }, totalquantity: { $sum: "$quantity" } } },

{ $sort: { "\_id.month": 1 } }

]);

1. **Find all items where price is greater than 10 and size is not 'Short'.**

db.sales.find({ price: { $gt: 10 }, size: { $ne: "Short" } });

1. **Get all Cappuccino sales with quantity between 10 and 20.**

db.sales.find({ item: "Cappuccino", quantity: { $gte: 10, $lte: 20 } });

1. **Query to find items where the item name starts with "A".**

db.sales.find({ item: { $regex: /^A/ } });

1. **Find all records that do not have the field size.**

db.sales.find({ size: { $exists: false } });

1. **List all items sold in February 2022.**

db.sales.find({ date: { $gte: ISODate("2022-02-01T00:00:00Z"), $lt: ISODate("2022-03- 01T00:00:00Z") } }, { item: 1, \_id: 1 });

1. **Find all sales that are either "Grande" or "Tall" but not "Americanos".**

db.sales.find({

size: { $in: ["Grande", "Tall"] },

item: { $ne: "Americanos" }

});

**9) Find sales where the quantity is more than twice the price.**

db.sales.find({ $expr: { $gt: ["$quantity", { $multiply: [2, "$price"] }] } });

1. **Find all sales where the price is greater than the average price of their respective size.**

db.sales.aggregate([{ $setWindowFields: { partitionBy: "$size", output: { avgPrice: { $avg: "$price" } } } }, { $match: { $expr: { $gt: ["$price", "$avgPrice"] } } }]);

1. **Find Sales Where the Day of Week Matches Quantity's Last Digit [Filter sales where the day of the week (0=Sunday, 1=Monday, etc.) matches the last digit of quantity]**

db.sales.aggregate([{ $match: { $expr: { $eq: [{ $dayOfWeek: "$date" }, { $add: [{ $mod: ["$quantity", 10] }, 1] }] } } }]);

1. **Find Sales Where the Month is Prime and Quantity is Odd [Filter sales where the month (1-12) is a prime number (2,3,5,7,11) AND quantity is odd]**

db.sales.aggregate([{ $match: { $expr: { $and: [ { $in: [{ $month: "$date" }, [2, 3, 5, 7, 11]] }, { $eq: [{ $mod: ["$quantity", 2] }, 1] } ] } } }]);

**13. Find Sales with "Suspicious Quantities" (Divisible by 5 or 7)**

**[Filter sales where quantity is divisible by 5 or 7]**

db.sales.find({ $or: [ { quantity: { $mod: [5, 0] } }, { quantity: { $mod: [7, 0] } } ] });