MongoDB Test

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Q1. 1. Find the total revenue (price × quantity) for each item, sorted from highest to lowest.

db.sales.aggregate([

{

$project: {

item: 1,

revenue: { $multiply: ["$price", "$quantity"] }

}

},

{

$group: {

\_id: "$item",

totalRevenue: { $sum: "$revenue" }

}

},

{

$sort: { totalRevenue: -1 }

}

]);

Q2. 2. Calculate the total quantity sold per month in 2022.

db.sales.aggregate([

{

$match: {

date: {

$gte: ISODate("2022-01-01T00:00:00Z"),

$lt: ISODate("2023-01-01T00:00:00Z")

}

}

},

{

$project: {

month: { $dateToString: { format: "%Y-%m", date: "$date" } },

quantity: 1

}

},

{

$group: {

\_id: "$month",

totalQuantity: { $sum: "$quantity" }

}

},

{

$sort: { \_id: 1 }

}

]);

Q.3 Find all items where price is greater than 10 and size is not 'Short'.

db.sales.find({

$nor: [

{ price: { $lte: 10 } },

{ size: "Short" }

]

});

Q. 4 Get all Cappuccino sales with quantity between 10 and 20.

db.sales.find({

item: "Cappuccino",

quantity: { $gte: 10, $lte: 20 }

});

Q.5 Get all Cappuccino sales with quantity between 10 and 20.

db.sales.find({

$and: [

{ item: "Cappuccino" },

{ quantity: { $gte: 10 } },

{ quantity: { $lte: 20 } }

]

});

Q.6 Find all records that do not have the field size.

db.sales.find({

size: { $exists: false }

});

Q.7 Query to find items where the item name starts with "A".

db.sales.find({

item: { $regex: "^A" }

});

Q.8 Find all sales that are either "Grande" or "Tall" but not "Americanos".

db.sales.find({

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

item: { $ne: "Americanos" }

});

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

db.sales.find({

$expr: {

$gt: ["$quantity", { $multiply: ["$price", 2] }]

}

});

Q.10 Find all sales where the price is greater than the average price of their respective size.

db.sales.aggregate([

{

$group: {

\_id: "$size",

avgPrice: { $avg: "$price" }

}

}

]);

db.sales.find({ size: "Short", price: { $gt: 5.5 } });

db.sales.find({ size: "Grande", price: { $gt: 11.67 } });

db.sales.find({ size: "Tall", price: { $gt: 12.5 } });

Q.11 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.find({

$where: function () {

const day = this.date.getDay(); // 0 (Sunday) to 6 (Saturday)

const lastDigit = this.quantity % 10;

return day === lastDigit;

}

});

Q. 12. 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.find({

$expr: {

$and: [

{ $in: [{ $month: "$date" }, [2, 3, 5, 7, 11]] },

{ $eq: [{ $mod: ["$quantity", 2] }, 1] }

]

}

});

Q. 13. Find Sales with "Suspicious Quantities" (Divisible by 5 or 7) [Filter sales where quantity is divisible by 5 or 7]

db.sales.find({

$expr: {

$or: [

{ $eq: [{ $mod: ["$quantity", 5] }, 0] },

{ $eq: [{ $mod: ["$quantity", 7] }, 0] }

]

}

});