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**FINAL PROJECT “FLOWERSHOP”**

**1)** **10 bestseller flowers in some period:**  
db.orders.aggregate([{ $lookup: { from: "product", localField: "FLOWER\_ID", foreignField: "FLOWER\_ID", as: "product" } },

{ $match: { DATE\_: { $gt: ISODate("2022-01-01T18:00:00.000Z"), $lt: ISODate("2022-12-29T18:00:00.000Z") } } },

{ $group: { \_id: "$FLOWER\_ID", flower\_name: { $first: "$[product.NAME](https://word-edit.officeapps.live.com/we/wordeditorframe.aspx?ui=ru-RU&rs=kk-KZ&hid=dKEz9Hcd80yZsJVCXUg%2Flg.0&wopisrc=https%3A%2F%2Fwopi.onedrive.com%2Fwopi%2Ffiles%2F5110AC70D10B0146!143&wdnd=1&wdprevioussession=b7fc181b-12c3-47ef-b3ad-b88c48b88627&wdnewandopenct=1684953282621&wdorigin=wacFileNew&wdpreviouscorrelation=b1a57aed-e3f6-4a3e-9b56-f858b18fc518&wdtpl=blank&wde=docx&sc=host%3D%26qt%3DDefault&mscc=1&wdp=0&uih=OneDrive&jsapi=1&jsapiver=v2&corrid=40170e1e-38f1-41d7-9cc4-ce20beb20d77&usid=40170e1e-38f1-41d7-9cc4-ce20beb20d77&newsession=1&sftc=1&instantedit=1&wopicomplete=1&wdredirectionreason=Unified_SingleFlush)" } ,totalQuantity: { $sum: "$QUANTITY" } } },

{$sort:{totalQuantity: -1}},

{ $limit: 10 }])

**2) Top 5 ordered products in some period of time by buyer whose id is 1**:  
db.orders.aggregate([{ $lookup: { from: "product", localField: "FLOWER\_ID", foreignField: "FLOWER\_ID", as: "product" } },   
{ $match: { BUYER\_ID: 1, DATE\_: { $gt: ISODate("2022-06-02T18:00:00.000Z"), $lt: ISODate("2022-12-29T18:00:00.000Z") } } },   
{ $group: { \_id: "$FLOWER\_ID", NAME: { $first: "$[product.NAME](http://product.name/)" }, LENGTH: { $first: "$product.LENGTHINCM" }, COLOR: { $first: "$product.COLOR" }, totalQuantity: { $sum: "$QUANTITY" } } },   
{ $sort: { totalQuantity: -1 } },   
{ $limit: 5 }])

**3)** **Fetches 5 regular customers , sorted by their order quantity and total quantity**  
db.orders.aggregate([{ $lookup: { from: "buyer", localField: "BUYER\_ID", foreignField: "BUYER\_ID", as: "buyer" } },   
{ $group: { \_id: "$BUYER\_ID", name: { $first: "$buyer.FULL\_NAME" }, phone\_number: { $first: "$buyer.PHONE\_NUM" }, city: { $first: "$[buyer.CITY](http://buyer.city/)" }, OrderQuantity: { $sum: 1 }, totalQuantity: { $sum: "$QUANTITY" } } },  
{ $sort: { OrderQuantity: -1, totalQuantity: -1 } },   
{ $limit: 5 }])

**4)** **3 sellers with the highest sales**  
  
db.flowershop.aggregate([  
{ $group: { \_id: "$SELLER\_ID", totalSales: { $sum: { $multiply: ["$TOTAL\_QUAN", "$PRICE"] } } } },   
{ $sort: { totalSales: -1 } },   
{ $limit: 3 } ])

**5)** **Searches for products that are longer than 50, grouped by color, and then sorts the products within each group in descending order of length.**  
  
db.product.aggregate([  
 { $match: { LENGTHINCM: { $gt: 50 } } },  
 { $sort: { COLOR: 1, LENGTHINCM: -1 } },  
 {  
 $group: {  
 \_id: "$COLOR",  
 products: {  
 $push: { FLOWER\_ID: "$FLOWER\_ID", NAME: "$NAME", length: "$LENGTHINCM" }  
 }  
 }  
 },  
 { $limit: 10 }  
])

**6. What unique card numbers and card types are associated with each buyer ?"**

**db.card.aggregate([ { $group: { \_id: "$BUYER\_ID", card\_numbers: { $addToSet: "$CARD\_NUMBER" }, card\_types: { $addToSet: "$CARD\_TYPE" }, average\_balance: { $avg: "$BALANCE" } } }, { $project: { \_id: 0, buyerId: "$\_id", card\_numbers: 1, card\_types: 1, average\_balance: 1 } }, { $limit: 5 }])**

**7) D**etermines how many flowers are bought in the 2023 year  
db.orders.aggregate([

{

$match: {

DATE\_: {

$gte: new Date("2023-01-01"),

$lte: new Date("2023-12-31")

}

}

},

{

$group: {

\_id: null,

totalQuantity: { $sum: "$QUANTITY" }

}

}

])

**8) Determines which flowers are bought the least**

db.product.aggregate([

{

$group: {

\_id: "$NAME",

count: { $sum: 1 }

}

},

{

$sort: { count: 1 }

},

{

$limit: 1

}

])  
  
**9) Determines which city has the most buyers**

db.buyer.aggregate([

{

$group: {

\_id: "$CITY",

count: { $sum: 1 }

}

},

{

$sort: { count: -1 }

},

{

$limit: 1

}

])

**10)Calculate the average Price for each Flowers db.flowershop.aggregate([ { $group: { \_id: "$FLOWER\_ID",avgPRICE: { $avg: "$PRICE"}} }]); 11)Group card by number and get the last balance for each item**

**db.card.aggregate([ {$group: {\_id: "$CARD\_NUMBER",lastbalance: {$last: "$BALANCE"}}}]) 12)Find the best buyer who placed an order on 02/11/2023 db.shipment.aggregate([{$match: { DATE\_: {$gt:ISODate("2023-02-11")}}},{$group:{\_id:"$BUYER\_ID",count:{$sum:1}}},{$sort: {count:-1}},{$limit:1}]);**

**13)** **Returns the search results as a set of documents that match the specified criteria.**

db.buyer.find({

$and: [

{ $or: [

{ CITY: { $in: ["Budapest", "Angers"] } },

{ ADDRESS: { $regex: /^2/ } }

] },

{ PHONE\_NUM: { $regex: /\d{3}-\d{3}-\d{4}/ } },

{ $expr: { $gt: [ { $strLenCP: "$FULL\_NAME" }, 10 ] } }

]

})

**14)** C**ounts the number of orders for each customer.**

db.orders.aggregate([ {

$group: {\_id: {BUYER\_ID: "$BUYER\_ID",

FLOWER\_ID: "$FLOWER\_ID"}}},

{$group: {\_id: "$\_id.BUYER\_ID", FLOWER\_ID: { $first: "$\_id.FLOWER\_ID" },count: { $sum: 1 }}},

{$match: {count: { $gt: 1 }}}])

**15)** **Calculates the total payment for each buyer, and retrieves the buyer with the highest total payment.**

db.orders.aggregate([

{

$lookup: {

from: "payment",

localField: "ORDER\_ID",

foreignField: "ORDER\_ID",

as: "payment\_details"

}

},

{

$unwind: "$payment\_details"

},

{

$group: {

\_id: "$BUYER\_ID",

totalPayment: { $sum: "$payment\_details.TOTAL\_PRICE" }

}

},

{

$sort: { totalPayment: -1 }

},

{

$limit: 1

}

])