**ASSIGNMENT 1**

**PART 1,2:**

use bookstoreDB

db.books.insertMany([

{

book\_id: 101,

title: "The AI Revolution",

author: "Ray Kurzweil",

genre: "Technology",

price: 799,

stock: 20

},

{

book\_id: 102,

title: "Love in the Time of Cholera",

author: "Gabriel García Márquez",

genre: "Romance",

price: 499,

stock: 15

},

{

book\_id: 103,

title: "Clean Code",

author: "Robert C. Martin",

genre: "Programming",

price: 950,

stock: 10

},

{

book\_id: 104,

title: "The Hobbit",

author: "J.R.R. Tolkien",

genre: "Fantasy",

price: 650,

stock: 18

},

{

book\_id: 105,

title: "Atomic Habits",

author: "James Clear",

genre: "Self-help",

price: 420,

stock: 25

}

]);

db.customers.insertMany([

{ customer\_id: 1, name: "Arun", email: "arun@gmail.com", city: "Hyderabad" },

{ customer\_id: 2, name: "Sneha", email: "sneha@gmail.com", city: "Chennai" },

{ customer\_id: 3, name: "Kiran", email: "kiran@gmail.com", city: "Hyderabad" },

{ customer\_id: 4, name: "Divya", email: "divya@gmail.com", city: "Delhi" },

{ customer\_id: 5, name: "Ravi", email: "ravi@gmail.com", city: "Mumbai" }

]);

db.orders.insertMany([

{ order\_id: 1, customer\_id: 1, book\_id: 101, order\_date: ISODate("2023-01-05"), quantity: 1 },

{ order\_id: 2, customer\_id: 2, book\_id: 103, order\_date: ISODate("2023-03-10"), quantity: 2 },

{ order\_id: 3, customer\_id: 3, book\_id: 104, order\_date: ISODate("2022-12-15"), quantity: 1 },

{ order\_id: 4, customer\_id: 4, book\_id: 105, order\_date: ISODate("2023-05-20"), quantity: 3 },

{ order\_id: 5, customer\_id: 5, book\_id: 102, order\_date: ISODate("2023-06-18"), quantity: 2 },

{ order\_id: 6, customer\_id: 1, book\_id: 103, order\_date: ISODate("2023-07-10"), quantity: 1 },

{ order\_id: 7, customer\_id: 2, book\_id: 104, order\_date: ISODate("2024-01-01"), quantity: 1 }

]);

**PART 3:**

1. db.books.find({price:{$gt: 500}})
2. db.customers.find({city:"Hyderabad"})
3. db.orders.find({order\_date:{$gt:ISODate("2023-01-01")}}
4. joins:

db.orders.aggregate([

{

$lookup: {

from: "customers",

localField: "customer\_id",

foreignField: "customer\_id",

as: "customer"

}

},

{ $unwind: "$customer" },

{

$lookup: {

from: "books",

localField: "book\_id",

foreignField: "book\_id",

as: "book"

}

},

{ $unwind: "$book" },

{

$project: {

\_id: 0,

order\_id: 1,

customer\_name: "$customer.name",

book\_title: "$book.title",

quantity: 1,

order\_date: 1

}

}

])

1. db.orders.aggregate([

{

$lookup: {

from: "books",

localField: "book\_id",

foreignField: "book\_id",

as: "bookInfo"

}

},

{

$unwind: "$bookInfo"

},

{

$group: {

\_id: "$book\_id",

title: { $first: "$bookInfo.title" },

total\_quantity: { $sum: "$quantity" }

}

}

])

1. db.orders.aggregate([

{

$group: {

\_id: "$customer\_id",

order\_count: { $sum: 1 }

}

},

{

$lookup: {

from: "customers",

localField: "\_id",

foreignField: "customer\_id",

as: "customerInfo"

}

},

{

$unwind: "$customerInfo"

},

{

$project: {

\_id: 0,

customer\_id: "$\_id",

name: "$customerInfo.name",

order\_count: 1

}

}

1. db.orders.aggregate([

{

$lookup: {

from: "books",

localField: "book\_id",

foreignField: "book\_id",

as: "book"

}

},

{ $unwind: "$book" },

{

$group: {

\_id: "$book.title",

total\_revenue: { $sum: { $multiply: ["$quantity", "$book.price"] } }

}

},

{

$project: {

\_id: 0,

title: "$\_id",

total\_revenue: 1

}

}

])

1. db.orders.aggregate([

{

$lookup: {

from: "books",

localField: "book\_id",

foreignField: "book\_id",

as: "book"

}

},

{ $unwind: "$book" },

{

$group: {

\_id: "$book.title",

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

}

},

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

{ $limit: 1 },

{

$project: {

\_id: 0,

title: "$\_id",

revenue: 1

}

}

])

1. db.orders.aggregate([

{

$lookup: {

from: "books",

localField: "book\_id",

foreignField: "book\_id",

as: "book"

}

},

{ $unwind: "$book" },

{

$group: {

\_id: "$book.genre",

total\_sold: { $sum: "$quantity" }

}

},

{

$project: {

\_id: 0,

genre: "$\_id",

total\_sold: 1

}

}

])

1. db.orders.aggregate([

{

$group: {

\_id: { customer\_id: "$customer\_id", book\_id: "$book\_id" }

}

},

{

$group: {

\_id: "$\_id.customer\_id",

book\_count: { $sum: 1 }

}

},

{

$match: { book\_count: { $gt: 2 } }

}

])