**Student Name:**

**Roll No:**

**PRN No**:

**Class:** SY **Div:** A **Batch: A-2**

**Lab Assignment No : 7**

**Source Code :**

1]Indexing :

test> use adityadb

switched to db adityadb

adityadb> db.yourCollection.createIndex({'name':1})

name\_1

adityadb> db.yourCollection.getIndexes()

[

{ v: 2, key: { \_id: 1 }, name: '\_id\_' },

{ v: 2, key: { name: 1 }, name: 'name\_1' }

]

**2]Aggregation :**

use aggregation

switched to db aggregation

db.createCollection("myCollection")

db.myCollection.insertMany([

{ name: "yash", age: 20, hobby: "cricket", gender: "male" },

{ name: "abhijeet", age: 20, hobby: "kabaddi", gender: "male" },

{ name: "rushi", age: 21, hobby: "cricket", gender: "male" },

{ name: "ajit", age: 21, hobby: "kabaddi", gender: "male" }

])  
{

acknowledged: true,

insertedIds: {

'0': ObjectId('67e15aefd209d6db324a3446'),

'1': ObjectId('67e15aefd209d6db324a3447'),

'2': ObjectId('67e15aefd209d6db324a3448'),

'3': ObjectId('67e15aefd209d6db324a3449')

}

}

db.myCollection.aggregate([{$group:{\_id:"$age"}}])

{

\_id: 20

}

{

\_id: 21

}

db.myCollection.aggregate([

{

$group: {

\_id: "$age", // Group by age

names: { $push: "$name" } // Collect names in an array

}

}

])

{

\_id: 21,

names: [

'rushi',

'ajit'

]

}

{

\_id: 20,

names: [

'yash',

'abhijeet'

]

}

db.myCollection.aggregate([

{

$group: {

\_id: "$age",

students: { $push: "$$ROOT" } // Collect entire document in an array

}

}

])

{

\_id: 20,

students: [

{

\_id: ObjectId('67e15aefd209d6db324a3446'),

name: 'yash',

age: 20,

hobby: 'cricket',

gender: 'male'

},

{

\_id: ObjectId('67e15aefd209d6db324a3447'),

name: 'abhijeet',

age: 20,

hobby: 'kabaddi',

gender: 'male'

}

]

}

{

\_id: 21,

students: [

{

\_id: ObjectId('67e15aefd209d6db324a3448'),

name: 'rushi',

age: 21,

hobby: 'cricket',

gender: 'male'

},

{

\_id: ObjectId('67e15aefd209d6db324a3449'),

name: 'ajit',

age: 21,

hobby: 'kabaddi',

gender: 'male'

}

]

}

db.myCollection.aggregate([{$match:{gender:"male"}},

{$group:{\_id:"$age",number : {$sum : 1}}}])

{

\_id: 21,

number: 2

}

{

\_id: 20,

number: 2

}

db.myCollection.aggregate([

{

$group: {

\_id: "$hobby", // Group by hobby

avgAge: { $avg: "$age" } // Calculate average age for each group

}

}

])

{

\_id: 'cricket',

avgAge: 20.5

}

{

\_id: 'kabaddi',

avgAge: 20.5

}

db.myCollection.aggregate([

{

$group: {

\_id: "$hobby", // Group by hobby

minAge: { $min: "$age" } // Find the minimum age in each group

}

}

])

{

\_id: 'kabaddi',

minAge: 20

}

{

\_id: 'cricket',

minAge: 20

}

db.myCollection.aggregate([

{

$group: {

\_id: "$age", // Group by age

uniqueNames: { $addToSet: "$name" } // Collect unique names

}

}

])  
{

\_id: 20,

uniqueNames: [

'abhijeet',

'yash'

]

}  
{

\_id: 21,

uniqueNames: [

'rushi',

'ajit'

]

}

db.myCollection.aggregate([

{

$group: {

\_id: "$age", // Group by age

firstName: { $first: "$name" } // Get the first name encountered in each age group

}

}

])  
{

\_id: 21,

firstName: 'rushi'

}

{

\_id: 20,

firstName: 'yash'

}

db.myCollection.aggregate([

{

$group: {

\_id: "$age", // Group by age

lastName: { $last: "$name" } // Get the last name encountered in each age group

}

}

])

{

\_id: 21,

lastName: 'ajit'

}

{

\_id: 20,

lastName: 'abhijeet'

}