**Experiment 8:**

1. Demonstrate creation of different types of indexes on collection (unique, sparse, compound and multikey indexes)

db.users.insertMany([

{

name: "Aarav Mehta",

email: "aarav.mehta@gmail.com",

age: 25,

city: "Mumbai",

hobbies: ["cricket", "reading"]

},

{

name: "Priya Sharma",

email: "priya.sharma@yahoo.com",

age: 28,

city: "Delhi",

hobbies: ["yoga", "painting"]

},

{

name: "Ravi Kumar",

email: "ravi.kumar@rediffmail.com",

age: 30,

city: "Bangalore"

},

{

name: "Sneha Joshi",

email: "sneha.joshi@gmail.com",

age: 32,

city: "Pune",

hobbies: ["music", "traveling"]

},

{

name: "Anil ",

email: "anil@hotmail.com",

age: 45,

city: "Chennai",

hobbies: ["gardening", "cooking"]

}

])

**Unique Index**

db.users.createIndex({ email: 1 }, { unique: true })

**Sparse Index**

db.users.createIndex({ age: 1 }, { sparse: true })

**Compound Index**

db.users.createIndex({ name: 1, age: -1 })

**Multikey Index**

db.users.createIndex({ hobbies: 1 })

1. Demonstrate optimization of queries using indexes.

db.users.find({ email: "anil@hotmail.com" }).explain("executionStats")

db.users.createIndex({ email: 1 }) // already done as unique

db.users.find({ email: "anil@hotmail.com" }).explain("executionStats")