**MongoDB CRUD Operations for LifeLink: Blood and Organ Donation Platform**

**1. USERS Collection**

**Create:**

db.users.insertOne({

name: "Shreya S",

email: "shreya@gmail.com",

role: "donor",

bloodGroup: "B+",

organsWillingToDonate: ["kidney"],

location: { city: "Chennai", zip: "600001" },

createdAt: new Date(),

updatedAt: new Date()

})

**Read:**

db.users.find({ "location.city": "Chennai", bloodGroup: "B+", role: "donor" })

**Update:**

db.users.updateOne(

{ email: "shreya@gmail.com" },

{ $set: { bloodGroup: "O+", updatedAt: new Date() } }

)

**Delete:**

db.users.deleteOne({ email: "shreya@gmail.com" })

**2. REQUESTS Collection**

**Create:**

db.requests.insertOne({

userId: ObjectId("..."),

type: "blood",

bloodGroup: "B+",

urgency: "high",

status: "pending",

createdAt: new Date(),

updatedAt: new Date()

})

**Read:**

db.requests.find({ status: "pending", urgency: "high" })

**Update:**

db.requests.updateOne(

{ \_id: ObjectId("...") },

{ $set: { status: "fulfilled", updatedAt: new Date() } }

)

**Delete:**

db.requests.deleteOne({ \_id: ObjectId("...") })

**3. DONATIONS Collection**

**Create:**

db.donations.insertOne({

userId: ObjectId("..."),

hospitalId: ObjectId("..."),

type: "blood",

date: new Date("2025-08-01T10:00:00Z"),

status: "completed",

createdAt: new Date(),

updatedAt: new Date()

})

**Read:**

db.donations.find({ userId: ObjectId("...") })

**Update:**

db.donations.updateOne(

{ \_id: ObjectId("...") },

{ $set: { status: "verified", updatedAt: new Date() } }

)

**Delete:**

db.donations.deleteOne({ \_id: ObjectId("...") })

**4. APPOINTMENTS Collection**

**Create:**

db.appointments.insertOne({

userId: ObjectId("..."),

date: new Date("2025-08-05T10:00:00Z"),

location: "Apollo Hospital, Chennai",

status: "scheduled",

createdAt: new Date(),

updatedAt: new Date()

})

**Read:**

db.appointments.find({ userId: ObjectId("..."), date: { $gte: new Date() } })

**Update:**

db.appointments.updateOne(

{ \_id: ObjectId("...") },

{ $set: { status: "completed", updatedAt: new Date() } }

)

**Delete:**

db.appointments.deleteOne({ \_id: ObjectId("...") })

**5. HEALTH RECORDS Collection**

**Create:**

db.healthRecords.insertOne({

userId: ObjectId("..."),

weight: 60,

bp: "120/80",

eligible: true,

lastDonationDate: new Date("2025-06-01"),

nextEligibleDate: new Date("2025-08-01"),

createdAt: new Date(),

updatedAt: new Date()

})

**Read:**

db.healthRecords.find({ userId: ObjectId("...") })

**Update:**

db.healthRecords.updateOne(

{ userId: ObjectId("...") },

{ $set: { eligible: false, updatedAt: new Date() } }

)

**Delete:**

db.healthRecords.deleteOne({ userId: ObjectId("...") })

**6. ALERTS Collection**

**Create:**

db.alerts.insertOne({

requestId: ObjectId("..."),

message: "Urgent need for B+ blood in Chennai",

nearbyUserIds: [ObjectId("..."), ObjectId("...")],

status: "sent",

sentAt: new Date()

})

**Read:**

db.alerts.find({ requestId: ObjectId("...") })

**Update:**

db.alerts.updateOne(

{ \_id: ObjectId("...") },

{ $set: { status: "acknowledged" } }

)

**Delete:**

db.alerts.deleteOne({ \_id: ObjectId("...") })

**7. HOSPITALS Collection**

**Create:**

db.hospitals.insertOne({

name: "Apollo Hospital",

address: { city: "Chennai", zip: "600006" },

contactEmail: "apollo@hospital.com",

phone: "044-12345678",

createdAt: new Date(),

updatedAt: new Date()

})

**Read:**

db.hospitals.find({ "address.city": "Chennai" })

**Update:**

db.hospitals.updateOne(

{ name: "Apollo Hospital" },

{ $set: { phone: "044-87654321", updatedAt: new Date() } }

)

**Delete:**

db.hospitals.deleteOne({ name: "Apollo Hospital" })

**8. FORUM POSTS Collection**

**Create:**

db.forumPosts.insertOne({

userId: ObjectId("..."),

title: "My First Donation Experience",

content: "It was a fulfilling and life-changing moment...",

createdAt: new Date(),

updatedAt: new Date()

})

**Read:**

db.forumPosts.find({ userId: ObjectId("...") })

**Update:**

db.forumPosts.updateOne(

{ \_id: ObjectId("...") },

{ $set: { title: "Updated Title", updatedAt: new Date() } }

)

**Delete:**

db.forumPosts.deleteOne({ \_id: ObjectId("...") })