

## **Database Creation:**

### **Login page:**

E mail	Password
navyamekala521@gmail.com	yami@123
yagasahithi4722@gmail.com	jhansi@7
navya472@gmail.com	navya#135
cherry474@gmail.com	cherry#678
teja514@gmail.com	teja#123

### **Registration Page:**

First Name	Last Name	Email	Phone Number
Navya	Nelluri	navya472@gmail.com	9959337769
Sahithi	Tirumalaseety	yagasahithi4722@gmail.com	9849979777
Cherry	chinthe	cherry474@gmail.com	9704614722
Navya	Mekala	navyamekala521@gmail.com	6307453297
Teja	Vaka	teja514@gmail.com	8651493051

<b>Password</b>	<b>Register as</b>
navya#135	Seller
jhansi@7	Buyer
yami@123	Agent
cherry#678	Buyer
teja#123	Agent

<b>Budget range</b>	<b>Interested property type</b>
\$1M	House
\$200,000	Condo
\$500,000	Apartment

## **ER Diagram:**

### **Entity Relation:**

#### **Property:**

One-to-Many with Transaction

One-to-Many with Lease

One-to-One with Agent

One-to-One with Owner

#### **Agent:**

One-to-Many with Property

One-to-Many with Transaction

#### **Owner:**

One-to-Many with Property

#### **Transaction:**

One-to-One with Property

One-to-One with Buyer

One-to-One with Seller

One-to-One with Agent

#### **Buyer:**

One-to-Many with Transaction

#### **Lease:**

One-to-One with Property

One-to-One with Tenant

#### **Tenant:**

One-to-Many with Lease

## **CURD operation:**

```
db.login.insertOne({
  "email": "newuser@example.com",
  "password": "password123"
});

db.registration.insertOne({
  "First name": "John",
  "Last name": "Doe",
  "Email": "john.doe@example.com",
  "Phone number": "9876543210",
  "Password": "securePassword!",
  "Register as": "buyer"
});

db.login.findOne({ "email": "navya472@gmail.com" });
db.registration.find({ "Register as": "buyer" }).toArray();
db.login.updateOne(
  { "email": "navya472@gmail.com" },
  { $set: { "password": "newPassword123" } }
);

db.registration.updateOne(
  { "Email": "john.doe@example.com" },
  { $set: { "Phone number": "9123456789" } }
);
```

```
db.login.deleteOne({ "email": "cherry474@gmail.com" });
```

```
db.registration.deleteOne({ "Email": "navya472@gmail.com" });
```

## **Aggregation:**

```
db.registration.aggregate([  
  { $group: { _id: "$Register as", count: { $sum: 1 } } }  
]);
```

```
db.registration.aggregate([  
  { $group: { _id: "$Password", count: { $sum: 1 } } },  
  { $match: { count: { $gt: 1 } } }  
]);
```

```
db.registration.aggregate([  
  { $project: { domain: { $arrayElemAt: [{ $split: ["$Email", "@"] }, 1] }  
  } },  
  { $group: { _id: "$domain", count: { $sum: 1 } } }  
]);
```

```
db.registration.aggregate([  
  { $match: { Budget: { $regex: /House/i } } },  
  { $project: { "First name": 1, "Last name": 1, "Budget": 1 } }  
]);
```

```
db.login.aggregate([  
  {  
    $lookup: {  
      from: "registration",  
      localField: "email",
```

```

    foreignField: "Email",
    as: "userDetails"
  }
},
{ $unwind: "$userDetails" },
{ $project: { email: 1, password: 1, "userDetails.First name": 1,
"userDetails.Last name": 1 } }
]);

db.login.aggregate([
  { $group: { _id: "$password", count: { $sum: 1 } } },
  { $sort: { count: -1 } },
  { $limit: 3 }
]);

db.registration.aggregate([
  { $match: { Budget: { $exists: true, $ne: null } } },
  { $count: "users_with_budget" }
]);

```

## **Indexing:**

```

db.login.createIndex({ email: 1 });
db.registration.createIndex({ Email: 1 });
db.login.createIndex({ email: 1, password: 1 });
db.registration.createIndex({ "Register as": 1 });
db.registration.createIndex({ "Phone number": 1 });

```

```
db.registration.createIndex({ "First name": "text", "Last name": "text"
});
```

```
db.registration.createIndex({ Budget: 1 }, { partialFilterExpression: {
Budget: { $exists: true } } });
```

```
db.login.createIndex({ email: 1 }, { unique: true });
```

## **Transaction:**

```
// Start a session for the transaction
```

```
const session = db.getMongo().startSession();
```

```
session.startTransaction();
```

```
try {
```

```
    // Insert into the login collection
```

```
    db.login.insertOne({
        "email": "newuser@example.com",
        "password": "securePassword123"
    }, { session });
```

```
    // Insert into the registration collection
```

```
    db.registration.insertOne({
        "First name": "John",
        "Last name": "Doe",
        "Email": "newuser@example.com",
        "Phone number": "9876543210",
```

```
"Password": "securePassword123",
"Register as": "buyer"
}, { session });

// If both operations are successful, commit the transaction
session.commitTransaction();
print("Transaction successfully committed");

} catch (error) {
    // If any error occurs, abort the transaction
    session.abortTransaction();
    print("Transaction aborted due to an error: " + error);
} finally {
    // End the session
    session.endSession();
}

// Start a session for the transaction
const session = db.getMongo().startSession();
```