**MongoDB**

**1. Find all documents where the age is greater than 30, returning only the name and email fields**.

db.collection.find(

{ age: { $gt: 30 } },

{ name: 1, email: 1, \_id: 0 }

)

**Explanation** `{ age: { $gt: 30 } }` filters documents where the age field is greater than 30. `{ name: 1, email: 1, \_id: 0 }` specifies which fields to return: `1` includes a field, and `0` excludes it, so here only `name` and `email` are returned.

**2. Find documents where the favorite color is either "Maroon" or "Blue."**

db.collection.find(

{ favoriteColor: { $in: ["Maroon", "Blue"] } }

)

**Explanation**

{ favoriteColor: { $in: ["Maroon", "Blue"] } }`

finds documents where `favoriteColor` matches either "Maroon" or "Blue" using the `$in` operator.

**3. Find all documents where the skill is an empty array.**

**db.collection.find(**

**{ skills: { $size: 0 } }**

**)**

**Explanation**

`{ skills: { $size: 0 } }`

finds documents where the `skills` array has a length of 0, meaning it’s empty.

**4. Find documents where the person has skills in both "JavaScript" and "Java."**

db.collection.find(

{ skills: { $all: ["JavaScript", "Java"] } }

)

**Explanation**

`{ skills: { $all: ["JavaScript", "Java"] } }`

finds documents where both "JavaScript" and "Java" are present in the `skills` array.

**5. Add a new skill to the `skills` array for the document with the email "amccurry3@cnet.com".**

// Insert document if it doesn't exist

db.collection.updateOne(

{ email: "amccurry3@cnet.com" },

{ $setOnInsert: { email: "amccurry3@cnet.com", skills: [] } },

{ upsert: true }

)

**// Add new skill to the `skills` array**

db.collection.updateOne(

{ email: "amccurry3@cnet.com" },

{ $push: { skills: { name: "Python", level: "Beginner", isLearning: true } } }

)

**Explanation**

- The first `updateOne` query uses `upsert: true` to insert a new document with the email if it doesn't already exist. The `setOnInsert` ensures that the document will be inserted only if it doesn't exist.

- The second `updateOne` query uses `$push` to add a new skill to the `skills` array in the document.

**6. Add a new language "Spanish" to the list of languages spoken by the person.**

db.collection.updateOne(

{ email: "amccurry3@cnet.com" },

{ $addToSet: { languages: "Spanish" } }

)

**Explanation**

`{ $addToSet: { languages: "Spanish" } }`

adds "Spanish" to the `languages` array only if it doesn’t already exist in the array, avoiding duplicates.

**7. Remove the skill with the name "Kotlin" from the `skills` array.**

db.collection.updateOne(

{ email: "amccurry3@cnet.com" },

{ $pull: { skills: { name: "Kotlin" } } })

**Explanation**

`{ $pull: { skills: { name: "Kotlin" } } }`

removes any object from the `skills` array that has `name: "Kotlin"`.