

# One-to-One Relationship

A *one-to-one relationship* in MongoDB means that a document in one collection is associated / connected with exactly one document in another collection.

**Example :** 😊

Imagine a scenario where each user has exactly one profile.

**There are two main ways to model this relationship:**

1. Embedding (Storing the related document inside the parent document)
  - The **user** document includes the **profile** directly inside it.

## Example:

```
{
  "_id": 1,
  "name": "John Doe",
  "profile": {
    "age": 30,
    "address": "123 Main St"
  }
}
```

## Benefits 😊

- Easy to access both user and profile together.
- Only one query is needed to get all the data.

## Drawbacks 😞

- If the profile data grows too large or changes often, updating or managing it can become inefficient.

## 2. Referencing (Linking documents using IDs)

- The **user** document has a `profile_id` field that references a separate **profile** document.

### Example:

User document:

```
{
  "_id": 1,
  "name": "John Doe",
  "profile_id": 100
}
```

Profile document:

```
{
  "_id": 100,
  "age": 30,
  "address": "123 Main St"
}
```

## Benefits 😊

- Keeps documents small and focused.
- Easier to update profile information without affecting the user document.

## Drawbacks 😞

- You need two queries: one to fetch the user and another to fetch the profile.

## Choosing Between Embedding and Referencing 👍

### Embed when:

- The related data is small and often accessed together.
- Data doesn't change often.

### Reference when:

- The related data is large or frequently updated.
- You might need to access the related data separately.

## Summary

In a one-to-one relationship:

**Embedding** keeps everything in one place for quick access.

**Referencing** keeps data modular and easier to manage when it grows or changes.

Choose the method based on how you'll access and update your data.