NestJS Microservices Documentation

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Contents

1 Introduction

This project consists of two independent microservices built with the **NestJS** framework:

1. **Auth Service**: Handles user authentication (signup and login) with a MongoDB database.
2. **Movies Service**: Manages movie data with a separate MongoDB database.

Each microservice is deployed independently and connects to a different MongoDB database.

2 Project Setup

2.1 Prerequisites

Before you start, ensure you have the following installed:

- **Node.js** (v14 or higher)
- **MongoDB** (local or cloud instance like MongoDB Atlas)
- **npm** (v6 or higher)
- **Nest CLI**: Install using the command:

```
    npm install -g @nestjs/cli

```

2.2 Folder Structure

```
.
          auth-service/
                src/
                      auth/
                            auth.controller.ts
                            auth.service.ts
                            auth.module.ts
                            schemas/
                                user.schema.ts
                      app.module.ts
                      main.ts
                .env
          movies-service/
              src/
                    movies/
                          movies.controller.ts
                          movies.service.ts
                          movies.module.ts
                          schemas/
                              movie.schema.ts
                    app.module.ts
                    main.ts
              .env
```

3 Creating the Project

3.1 Setting Up the Auth Service

1. **Generate the Project**:

```
   nest new auth-service

```

2. **Install Dependencies**:

```
npm install @nestjs/mongoose mongoose bcryptjs jsonwebtoken dotenv

```

3. **Create the User Schema**:

```
// src/auth/schemas/user.schema.ts
import { Prop, Schema, SchemaFactory } from '@nestjs/mongoose';
import { Document } from 'mongoose';
import * as bcrypt from 'bcryptjs';

export type UserDocument = User & Document;

@Schema()
export class User {
  @Prop({ required: true, unique: true })
  email: string;

  @Prop({ required: true })
  password: string;
}

export const UserSchema = SchemaFactory.createForClass(User);

UserSchema.pre<UserDocument>('save', async function (next) {
  if (!this.isModified('password')) return next();
  this.password = await bcrypt.hash(this.password, 10);
  next();
});

UserSchema.methods.validatePassword = async function (password: string): Promise<boolean>
  {
  return bcrypt.compare(password, this.password);
};

```

4. **Create the Auth Service and Controller** (for signup and login functionality).

3.2 Setting Up the Movies Service

Follow similar steps to create the movies service, focusing on managing movie data.

4 Environment Variables

4.1 Auth Service .env

```
MONGODB_URI=mongodb://localhost:27017/auth-db
JWT_SECRET=your_secret_key
```

4.2 Movies Service .env

```
MONGODB_URI=mongodb://localhost:27017/movies-db
```

5 API Endpoints

5.1 Auth Service Endpoints

1. **Signup**:

   - **URL**: 'POST /auth/signup'

- **Request Body**:

```
          {
            "email": "user@example.com",
            "password": "password123"
          }

```

- **Response**:

```
          {
            "message": "User created successfully",
            "userId": "<user_id>"
          }

```

2. **Login**:

- **URL**: ‘POST /auth/login‘
- **Request Body**:

```
          {
            "email": "user@example.com",
            "password": "password123"
          }

```

- **Response**:

```
          {
            "token": "<jwt_token>"
          }

```

3. **Update User**:

- **URL**: ‘PUT /auth/:id‘
- **Request Body**:

```
          {
            "email": "newemail@example.com",
            "password": "newpassword123"
          }

```

- **Response**:

```
          {
            "message": "User updated successfully"
          }

```

4. **Delete User**:

- **URL**: ‘DELETE /auth/:id‘
- **Response**:

```
          {
            "message": "User deleted successfully"
          }

```

5.2 Movies Service Endpoints

1. **Add Movie**:
   - **URL**: ‘POST /movies‘
   - **Request Body**:

```
          {
            "title": "Inception",
            "description": "A mind-bending thriller",
            "releaseYear": 2010
          }

```

2. **Get Movies**:
   - **URL**: ‘GET /movies‘
   - **Response**:

```
            [
                {
                    "_id": "6765d1af1e8de7af998b8587",
                    "title": "Avengers",
                    "description": "A mind-bending thriller",
                    "releaseYear": 2019,
                    "__v": 0
                }
            ]

```

3. **Update Movie**:
   - **URL**: ‘PUT /movies/:id‘
   - **Request Body**:

```
          {
            "title": "Inception Updated",
            "description": "An updated description",
            "releaseYear": 2011
          }

```

   - **Response**:

```
          {
            "message": "Movie updated successfully"
          }

```

4. **Delete Movie**:
   - **URL**: ‘DELETE /movies/:id‘
   - **Response**:

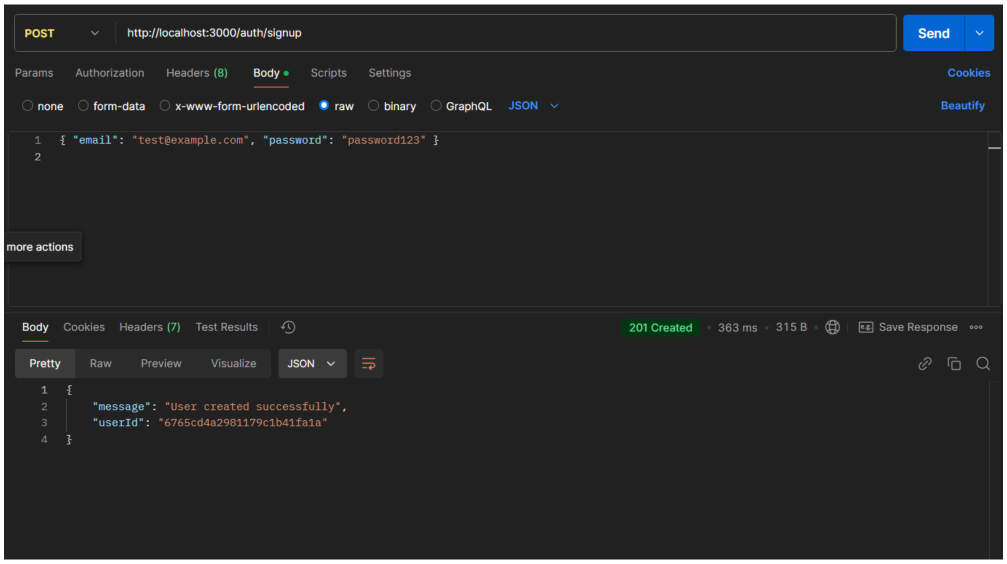
```
          {
            "message": "Movie deleted successfully"
          }

```

6 Screenshots

7 Conclusion

This project demonstrates how to create and deploy microservices using NestJS, each connecting to different MongoDB databases for authentication and movie management.



POST http://localhost:3000/auth/signup

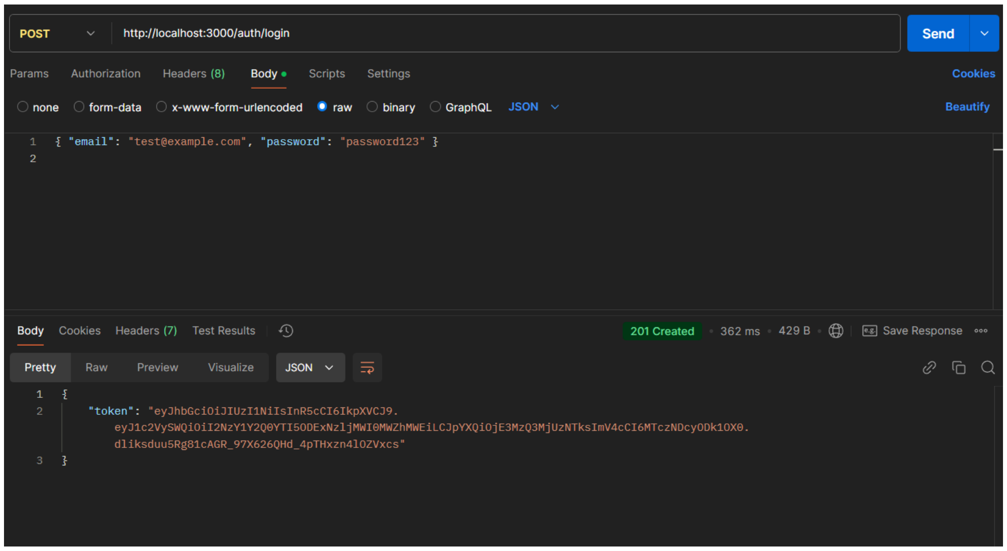
Body: raw, JSON

```
{ "email": "test@example.com", "password": "password123" }
```

201 Created · 363 ms · 315 B

```
{
    "message": "User created successfully",
    "userId": "6765cd4a2981179c1b41fa1a"
}
```

Figure 1: Auth Service Signup in Postman



POST http://localhost:3000/auth/login

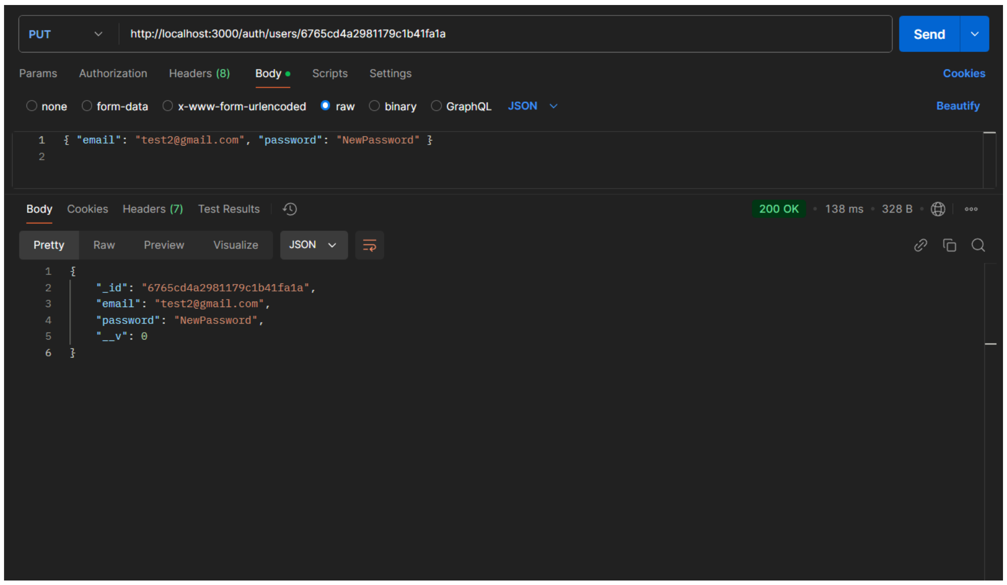
Body: raw, JSON

```
{ "email": "test@example.com", "password": "password123" }
```

201 Created · 362 ms · 429 B

```
{
    "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.
        eyJ1c2VySWQiOiI2NzY1Y2Q0YTI5ODExNzljMWI0MWZhMWEiLCJpYXQiOjE3MzQ3MjUzNTksImV4cCI6MTczNDcyODk1OX0.
        dliksduu5Rg81cAGR_97X626QHd_4pTHxzn4lOZVxcs"
}
```

Figure 2: Auth Service Signin in Postman



PUT http://localhost:3000/auth/users/6765cd4a2981179c1b41fa1a

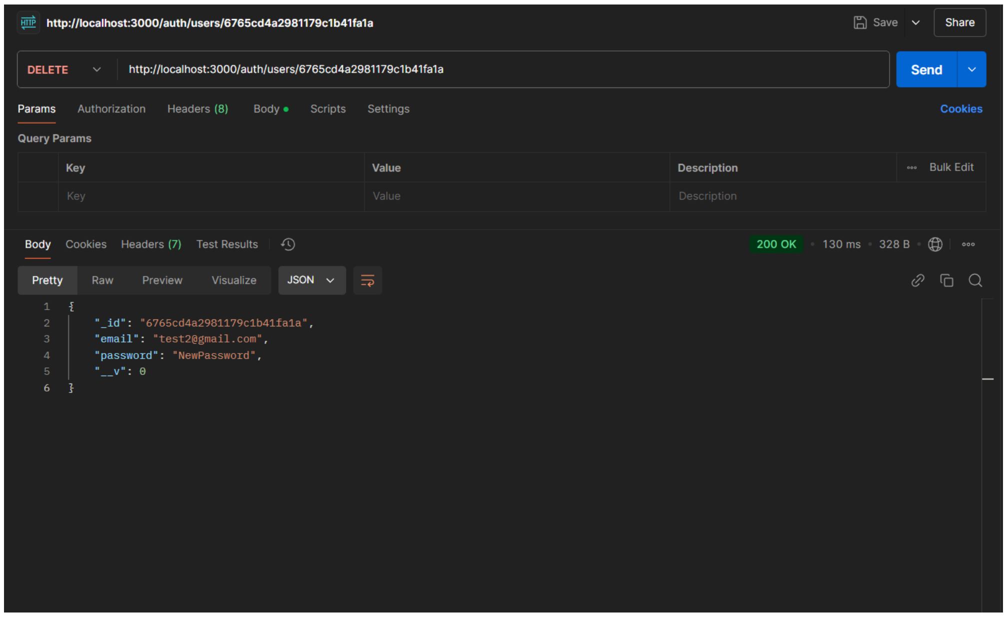
Body: raw [✓ raw] JSON

```
{ "email": "test2@gmail.com", "password": "NewPassword" }
```

200 OK · 138 ms · 328 B

```
{
    "_id": "6765cd4a2981179c1b41fa1a",
    "email": "test2@gmail.com",
    "password": "NewPassword",
    "__v": 0
}
```

Figure 3: Auth Service Update user in Postman



http://localhost:3000/auth/users/6765cd4a2981179c1b41fa1a

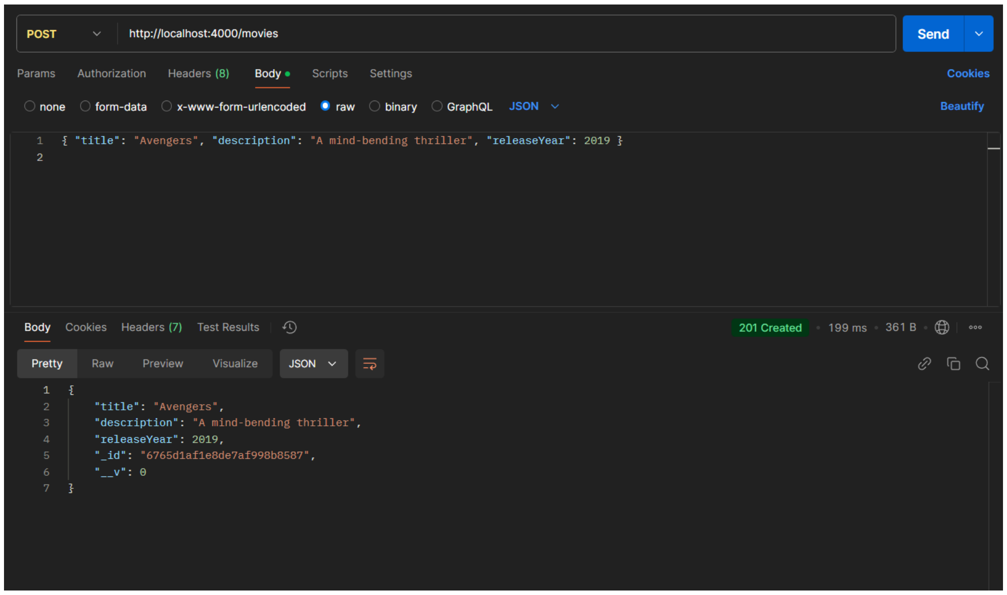
DELETE http://localhost:3000/auth/users/6765cd4a2981179c1b41fa1a

Key	Value	Description
Key	Value	Description

200 OK · 130 ms · 328 B

```
{
    "_id": "6765cd4a2981179c1b41fa1a",
    "email": "test2@gmail.com",
    "password": "NewPassword",
    "__v": 0
}
```

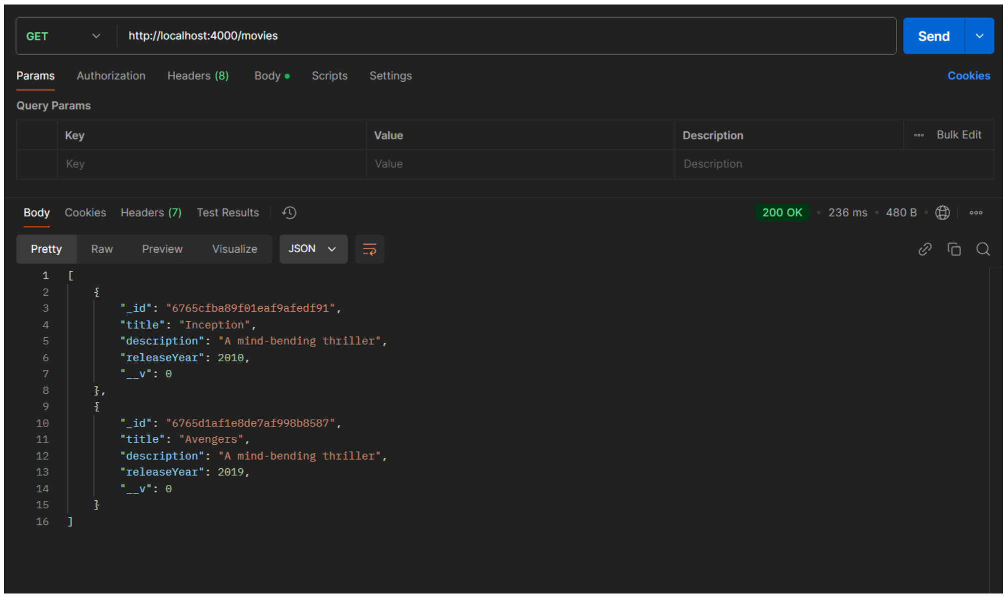
Figure 4: Auth Service Delete user in Postman



```
POST http://localhost:4000/movies
Body: raw JSON
{ "title": "Avengers", "description": "A mind-bending thriller", "releaseYear": 2019 }
```

```
201 Created · 199 ms · 361 B
{
    "title": "Avengers",
    "description": "A mind-bending thriller",
    "releaseYear": 2019,
    "_id": "6765d1af1e8de7af998b8587",
    "__v": 0
}
```

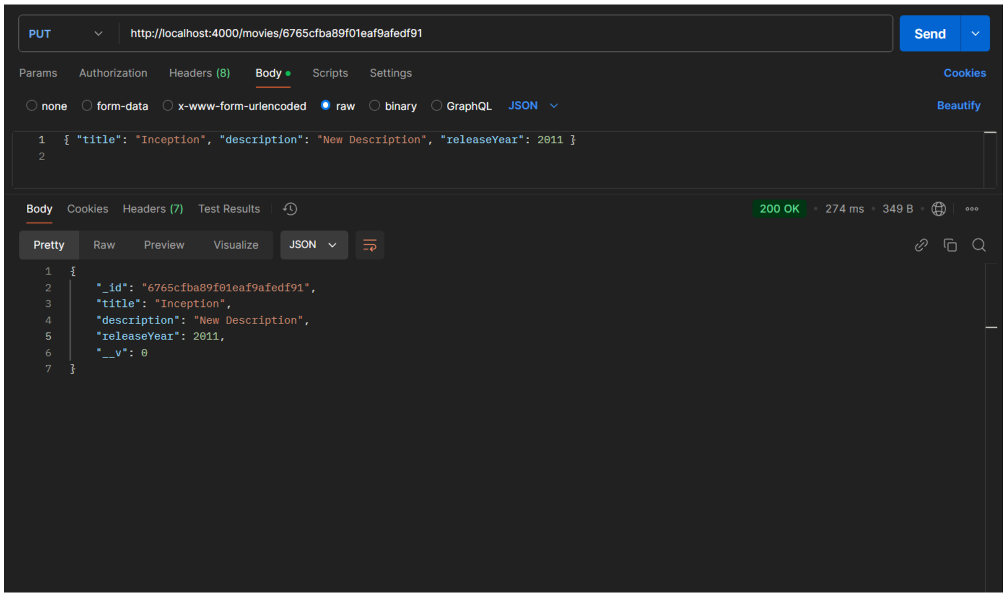
Figure 5: Movies Service - Add Movie in Postman



```
GET http://localhost:4000/movies
```

```
200 OK · 236 ms · 480 B
[
    {
        "_id": "6765cfba89f01eaf9afedf91",
        "title": "Inception",
        "description": "A mind-bending thriller",
        "releaseYear": 2010,
        "__v": 0
    },
    {
        "_id": "6765d1af1e8de7af998b8587",
        "title": "Avengers",
        "description": "A mind-bending thriller",
        "releaseYear": 2019,
        "__v": 0
    }
]
```

Figure 6: Movies Service - Get Movies in Postman



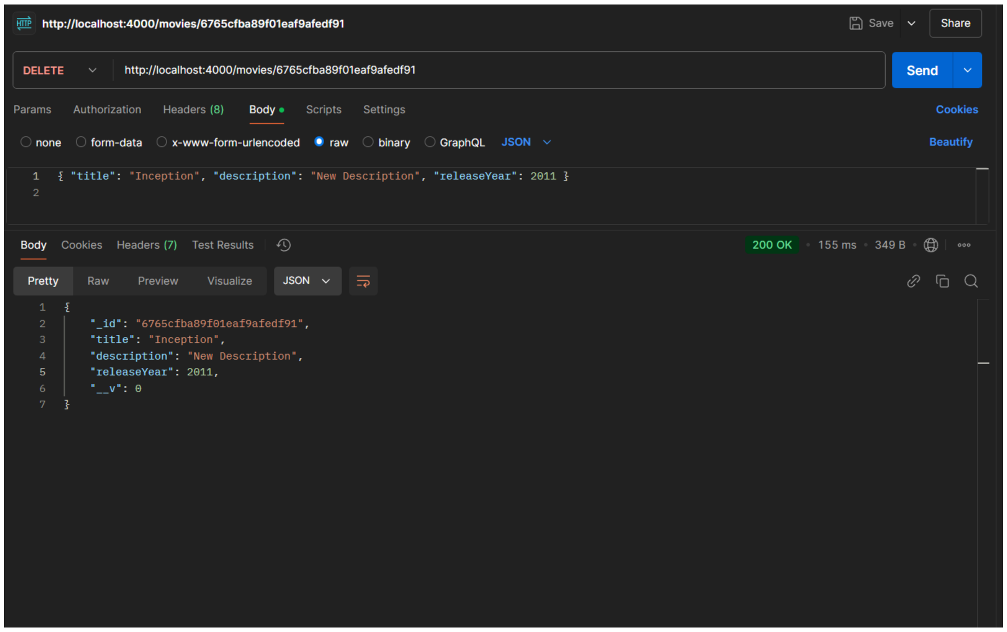
```
http://localhost:4000/movies/6765cfba89f01eaf9afedf91
```

```
{ "title": "Inception", "description": "New Description", "releaseYear": 2011 }
```

200 OK · 274 ms · 349 B

```
{
    "_id": "6765cfba89f01eaf9afedf91",
    "title": "Inception",
    "description": "New Description",
    "releaseYear": 2011,
    "__v": 0
}
```

Figure 7: Movies Service - Update Movie in Postman



```
http://localhost:4000/movies/6765cfba89f01eaf9afedf91
```

```
{ "title": "Inception", "description": "New Description", "releaseYear": 2011 }
```

200 OK · 155 ms · 349 B

```
{
    "_id": "6765cfba89f01eaf9afedf91",
    "title": "Inception",
    "description": "New Description",
    "releaseYear": 2011,
    "__v": 0
}
```

Figure 8: Movies Service - Delete Movie in Postman