
Project Wiki

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Setting Up the Environment

1. Clone the Repositories

First, you'll need to clone the repositories for the C++ server, Node.js backend, React client, and Android client.

```
# C++ Server
git clone https://github.com/your-repo/cpp-server.git
cd cpp-server

# Node.js Backend
git clone https://github.com/your-repo/youtube-clone-backend.git
cd youtube-clone-backend

# React Client
git clone https://github.com/your-repo/youtube-clone.git
cd youtube-clone

# Android Client
git clone https://github.com/Ibrahimkewan/android_youtube.git
cd android_youtube
```

2. Install Dependencies

Node.js Server

Navigate to the Node.js backend directory and install the necessary dependencies:

```
cd youtube-clone-backend  
npm install
```

3. Set Up Environment Variables

For the Node.js backend, create a `.env` file in the root of the `youtube-clone-backend` project and add the following environment variables:

```
PORT=5000  
MONGO_URI=mongodb://localhost:27017  
JWT_SECRET=your_secret_key
```

4. Build and Run the C++ Server

Compile the C++ server using the following command:

```
g++ server.cpp -o server.exe -lws2_32
```

Run the C++ server:

```
./server.exe
```

```
cpp_server > g++ server.cpp -o server.exe -lws2_32  
cpp_server > ./server.exe  
[2024-09-01 20:17:51] Server is listening on port 5566
```

5. Start the Node.js Server

Navigate to the Node.js backend directory (`youtube-demo-app`) and start the server:

```
npm start
```

The server will run on `http://localhost:5000`.

```

cpp_server > g++ server.cpp -o server.exe -lws2_32
cpp_server > ./server.exe
[2024-09-01 20:17:51] Server is listening on port 5566
[2024-09-01 20:19:09] New client connected from IP: 127.0.0.1 on port 49950
[2024-09-01 20:19:09] Received data: action:test
user_id:test_user
video_id:test_video

[2024-09-01 20:19:09] Parsed message key: action, value: test
[2024-09-01 20:19:09] Parsed message key: user_id, value: test_user
[2024-09-01 20:19:09] Parsed message key: video_id, value: test_video
[2024-09-01 20:19:09] Processed test action
[2024-09-01 20:19:09] Adding to response - key: message, value: Test successful
[2024-09-01 20:19:09] Adding to response - key: status, value: success
[2024-09-01 20:19:09] Sent response: message:Test successful
status:success

[2024-09-01 20:19:09] Connection closed by client or error receiving data.
[2024-09-01 20:19:09] Client socket closed.
[]

node_server > node server.js
(node:30552) [MONGODB DRIVER] Warning: useNewUrlParser is a deprecated option: useNewUrlParser has no effect since Node.js Driver version 4.0.0 and will be removed in the next major version
(Use `node --trace-warnings ...` to show where the warning was created)
(node:30552) [MONGODB DRIVER] Warning: useUnifiedTopology is a deprecated option: useUnifiedTopology has effect since Node.js Driver version 4.0.0 and will be removed in the next major version
Server running on port 5000
Connected to C++ server
Sent test message: action:test
user_id:test_user
video_id:test_video

Received response from C++ server: message:Test successful
status:success

Test message sent successfully. C++ server is working.
MongoDB connected
Connection to C++ server closed
[]

```

6. Start the React Client

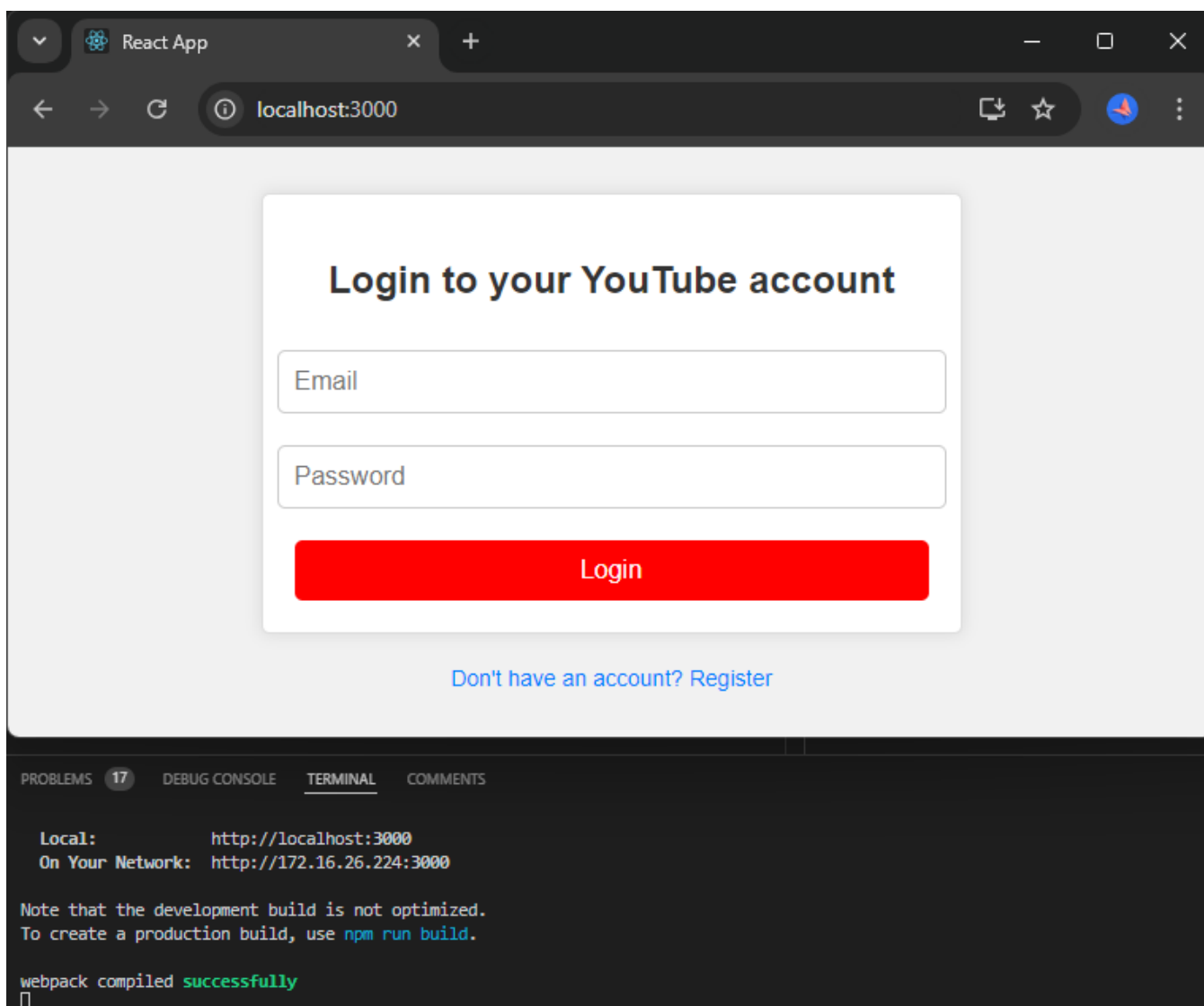
Navigate to the React client directory (my-app) and start the development server:

```

cd youtube-clone
npm install
npm start

```

Open your browser and navigate to <http://localhost:3000>.



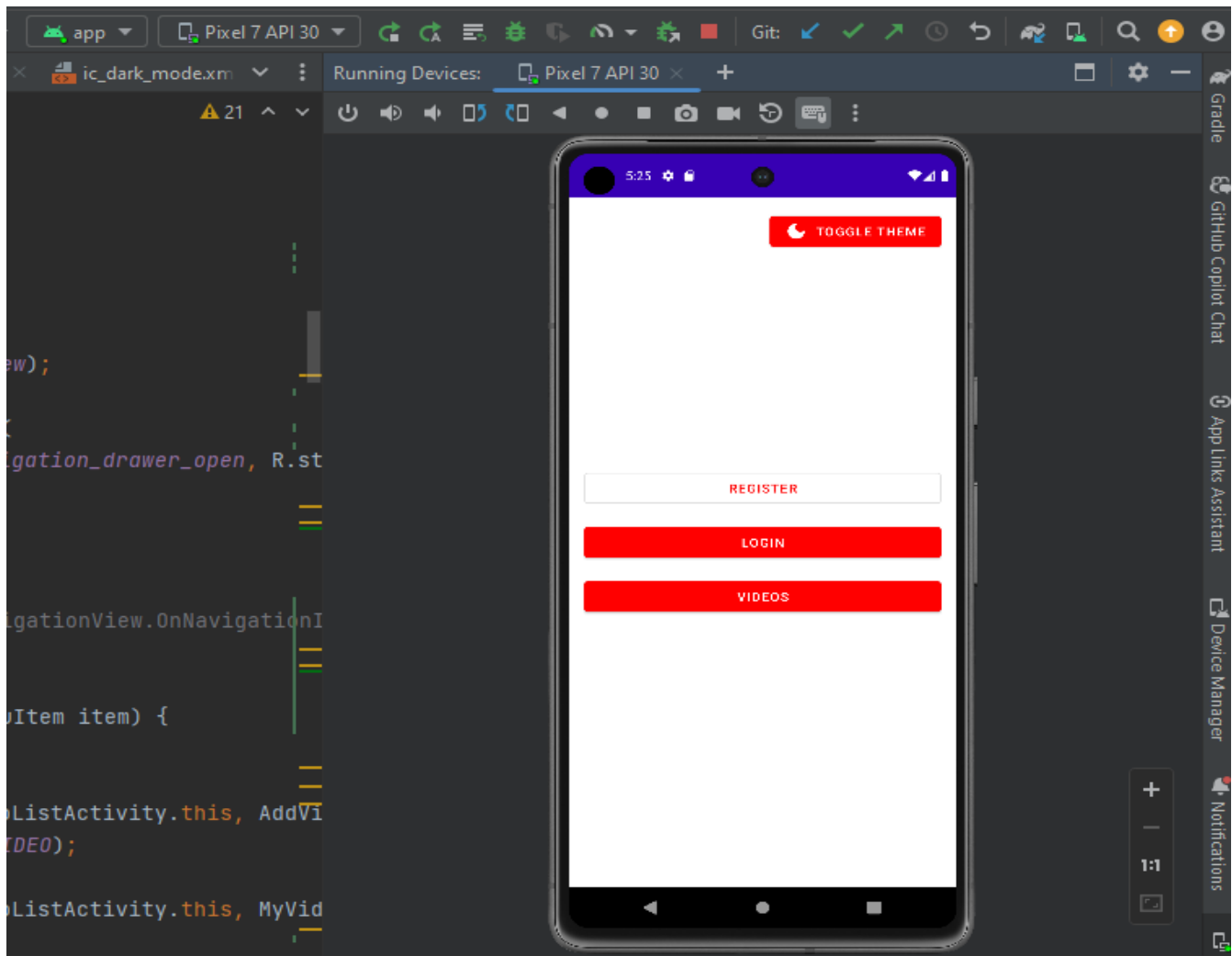
7. Run the Android Client

Open the Android client project in Android Studio:

1. Launch Android Studio.
2. Select **Open an existing project**.
3. Navigate to the **android_youtube** directory and select it.

Build and run the application on an emulator or a physical device:

- Click on the **Run** button in Android Studio or use **Shift + F10**.

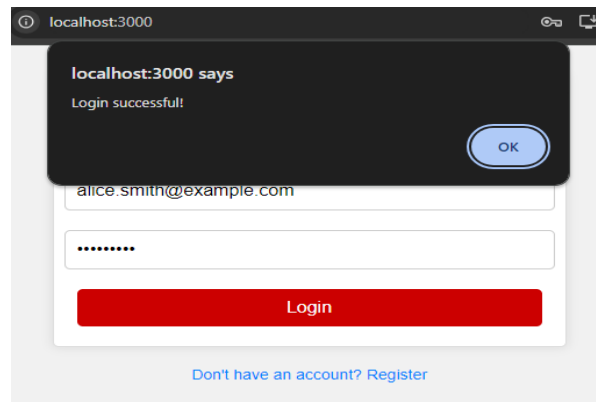
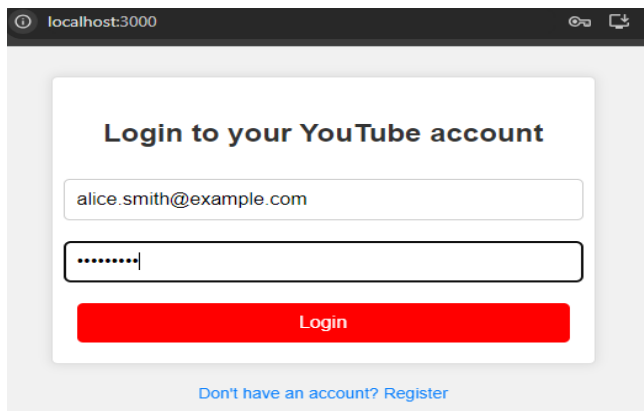


Login and Registration

React Client

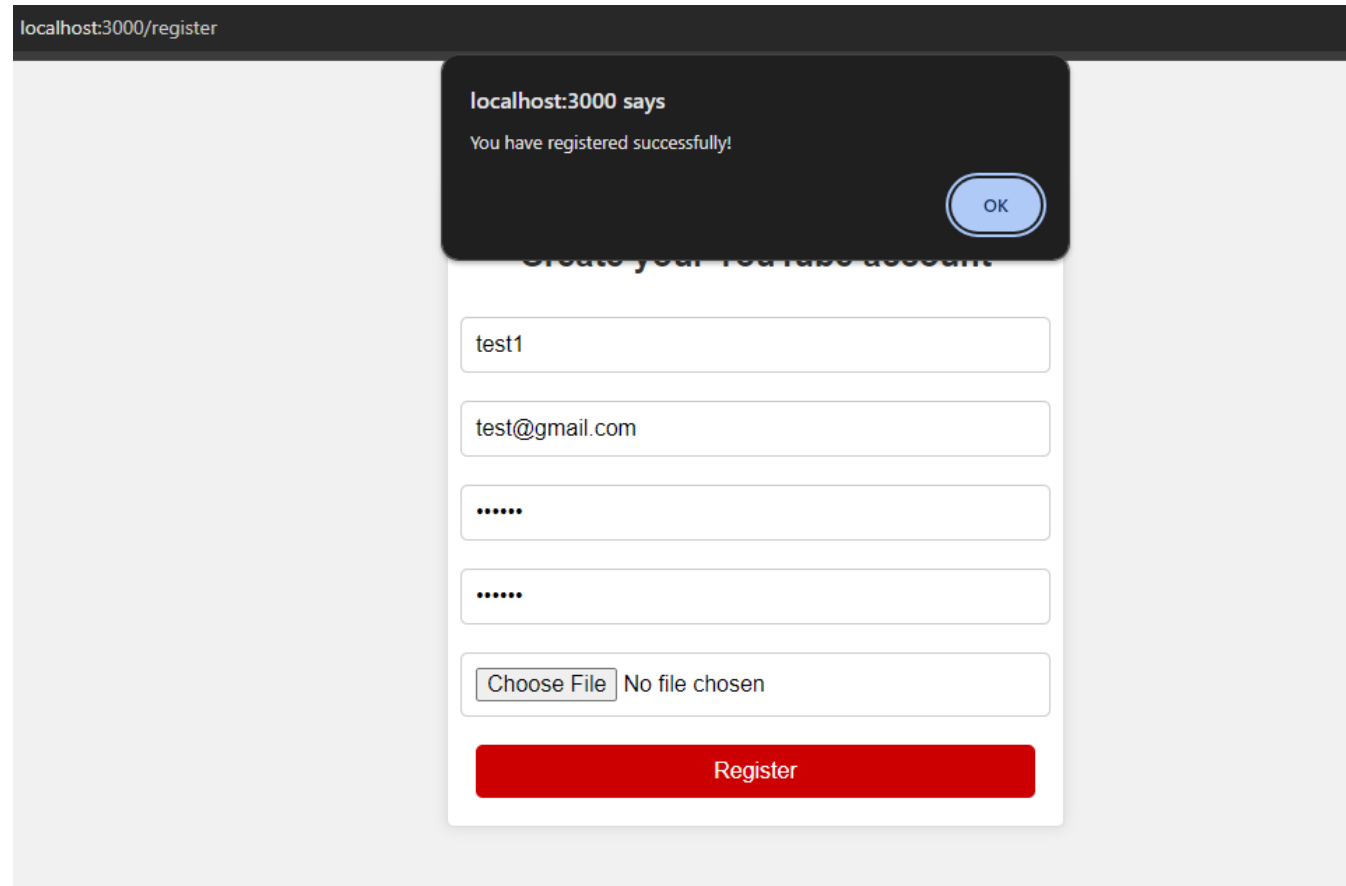
- **Login:**

- Demonstrate the login process within the React client.



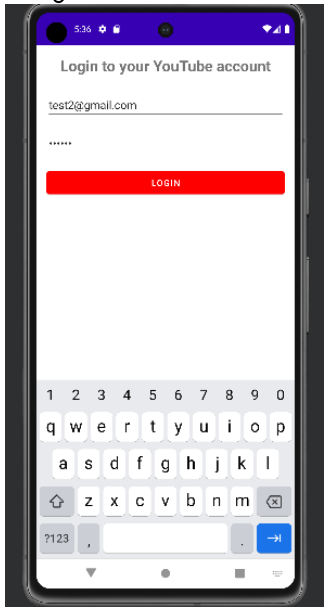
- **Registration:**

- Show the registration process and successful registration message.

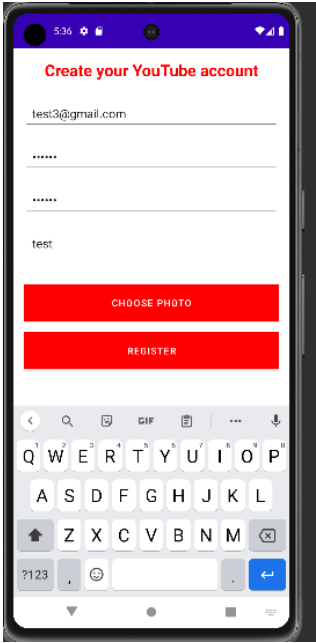


Android Client

- Login:



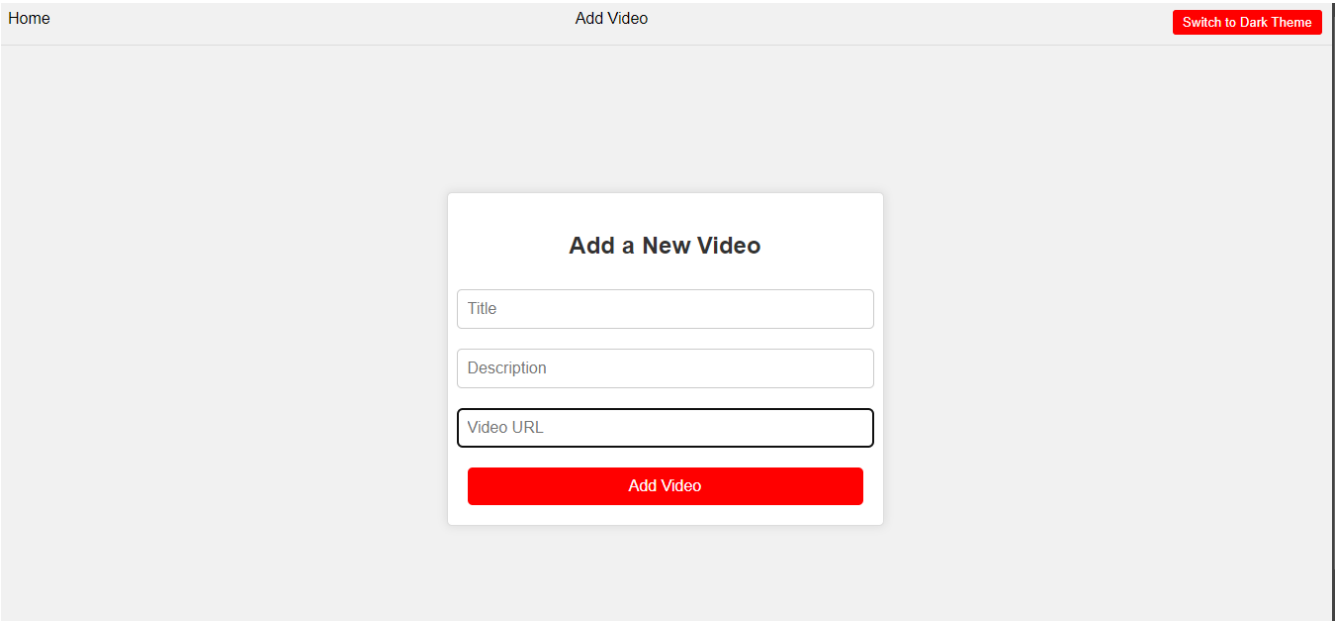
• **Registration:**

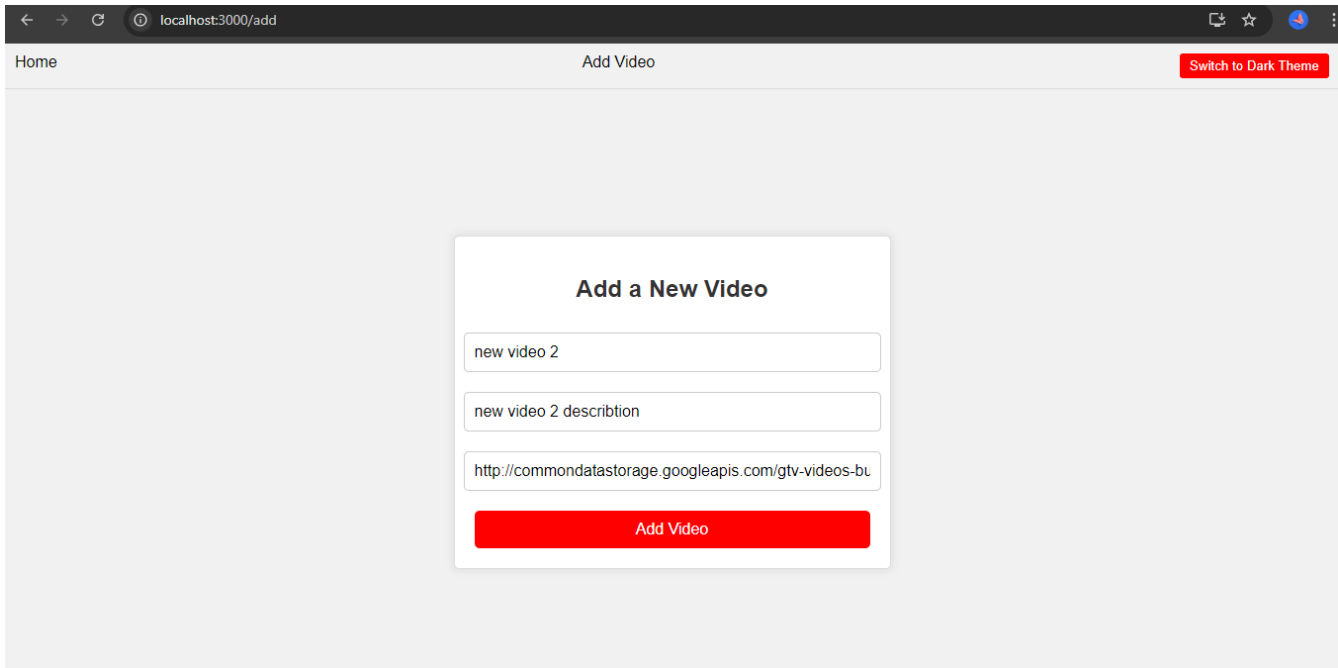


Video Operations

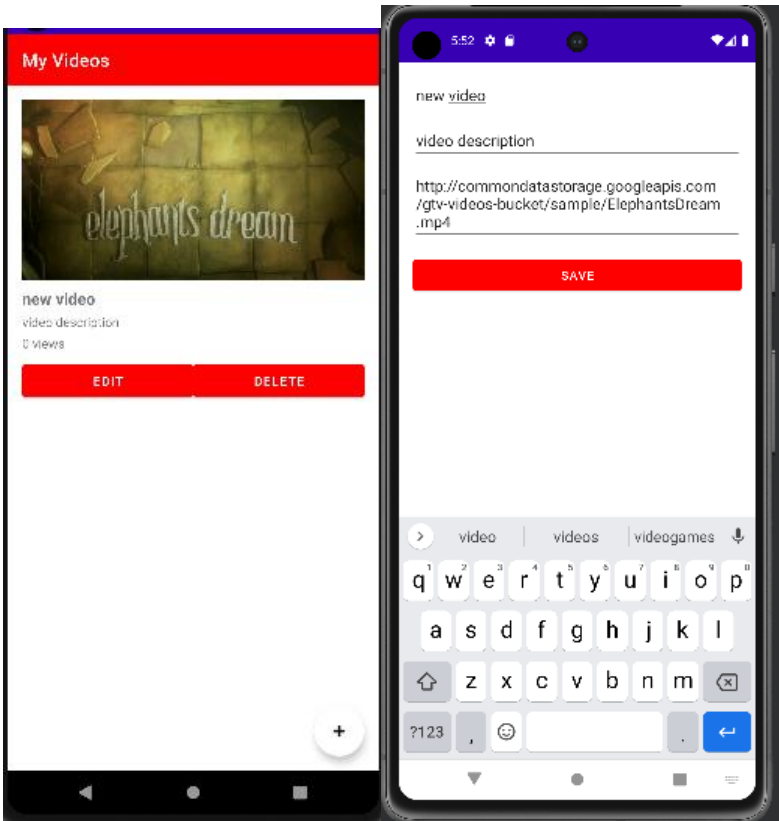
Creating Videos

• **React Client:**





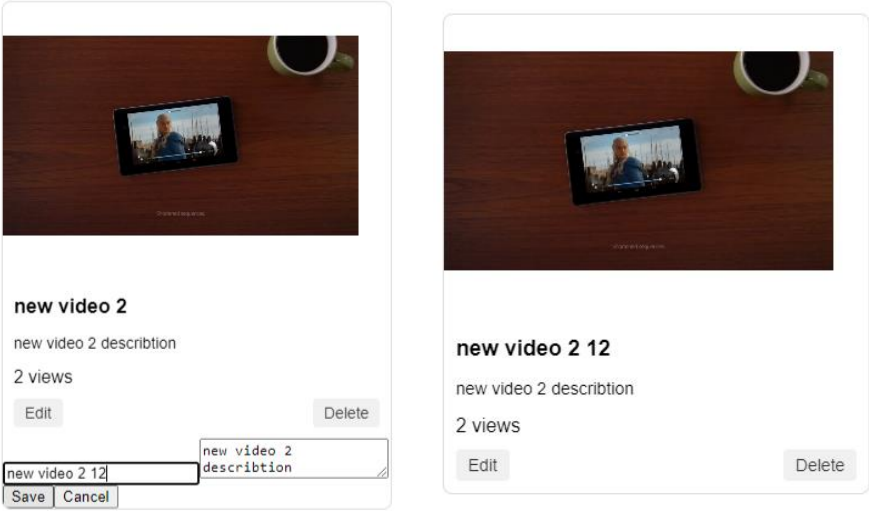
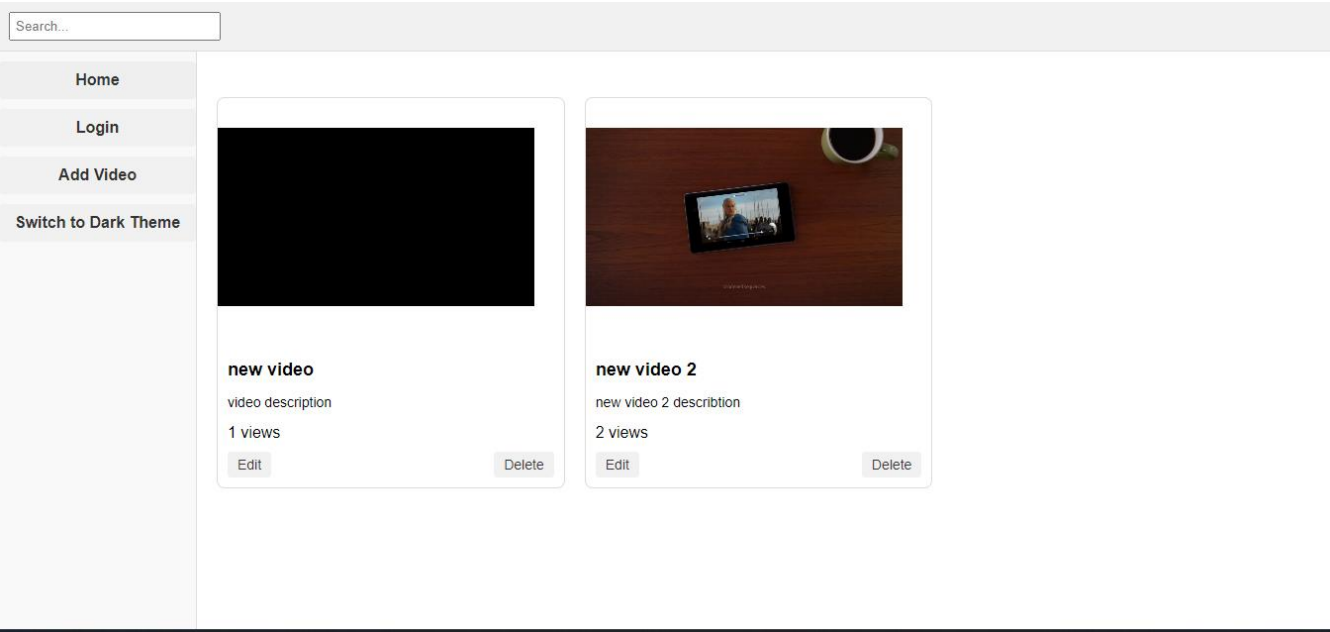
- **Android Client:**
Used link : <http://commondatastorage.googleapis.com/gtv-videos-bucket/sample/ElephantsDream.mp4>



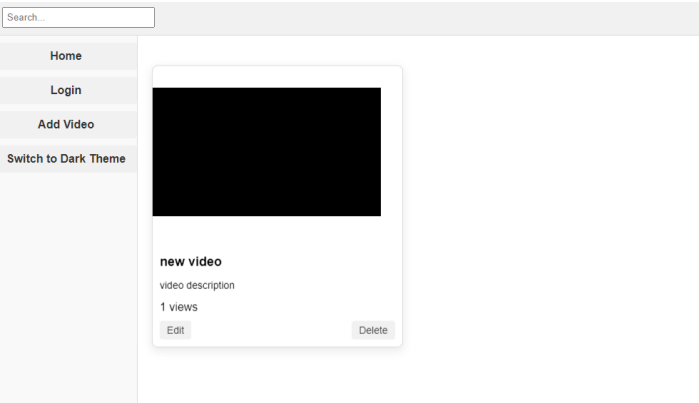
Editing Videos / Deleting Videos

- **React Client:**
 -

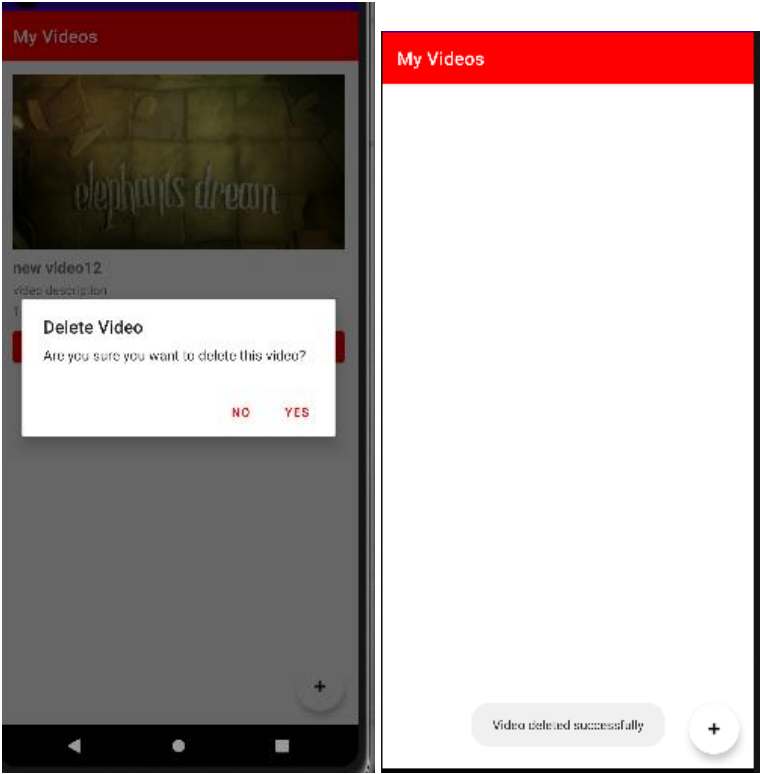
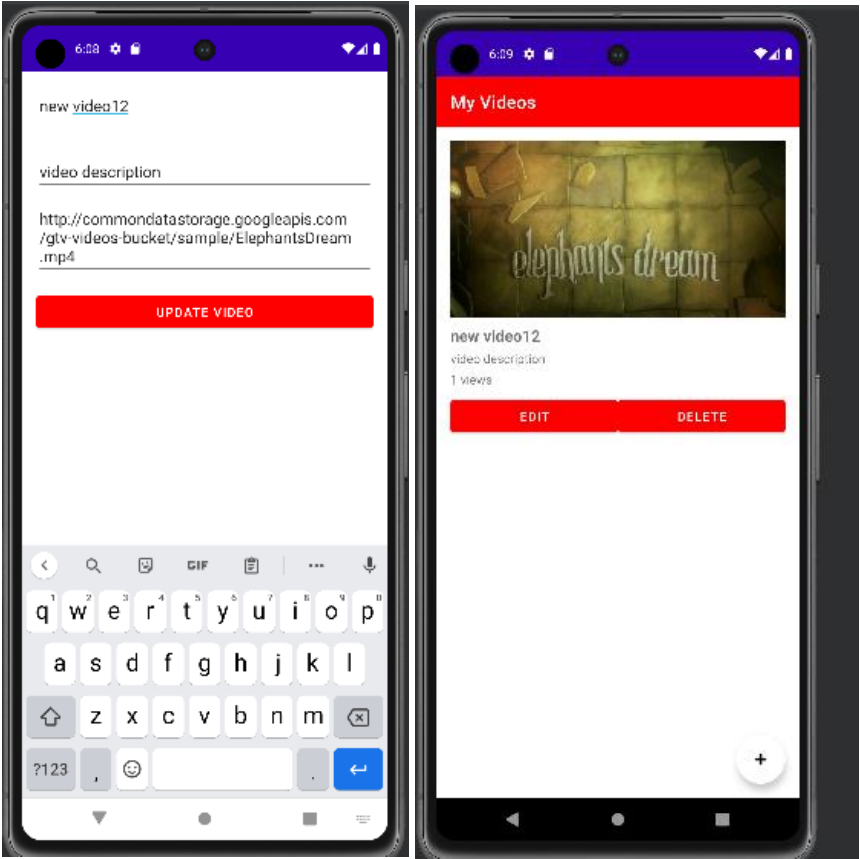
Clicking on my videos in the side bar :



Clicking delete :



Android Client:



Viewing Videos

- **React Client:**
 -

Search...

Dark Theme


Home

My Videos

Login


Add Video


All Videos



Introduction to Python


9 views


 Alice Smith



Introduction to Python


4 views

 Charlie Brown



Introduction to Python

7 views


 Bob Johnson

Home

Add Video

Switch to Dark Theme

To exit full screen, press and hold Esc



0:00 / 0:10

Introduction to Python

This is the description for the Python intro video.

Like

Share

Comments

Add a comment...

Add

Great video!

EditDelete

Thanks for sharing.

EditDelete

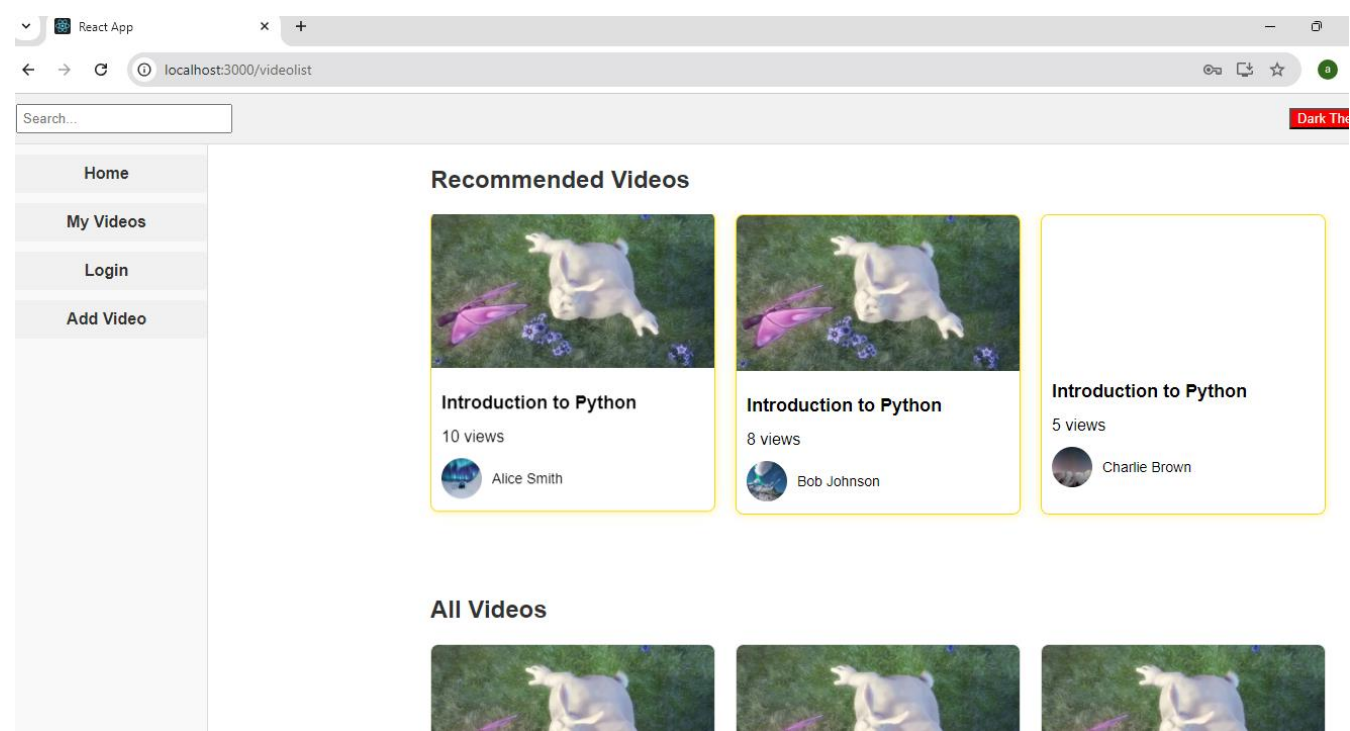
- **Android Client:**
 -

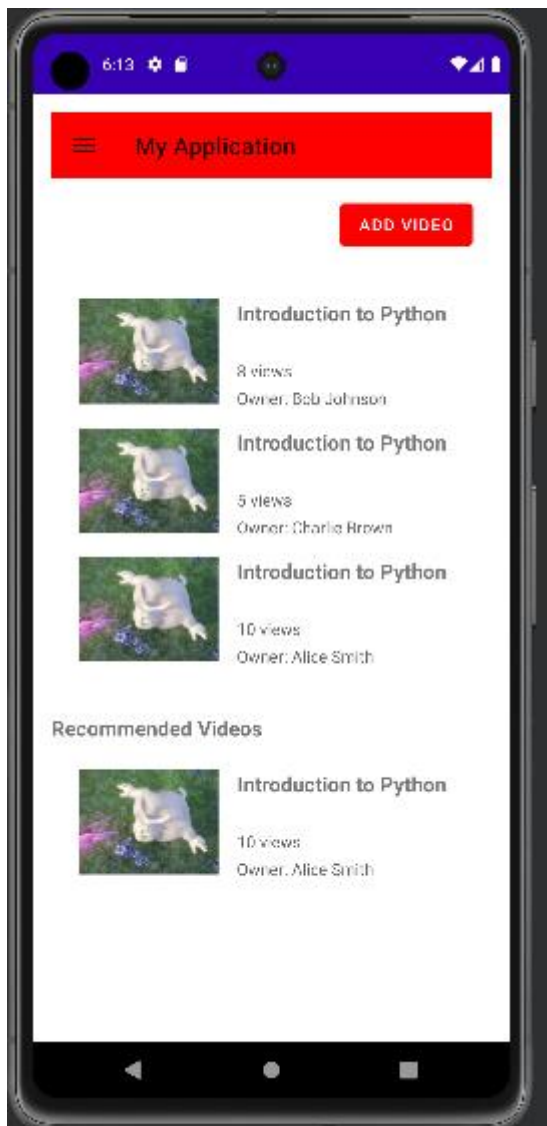


Recommended Videos

Recommendations :

Only after clients started seeing videos :





Cpp server:

```
[2024-09-01 21:13:27] Parsed message key: action, value: recommend
[2024-09-01 21:13:27] Parsed message key: user_id, value: 66d4a5f20ab4c34e38bfa1fa
[2024-09-01 21:13:27] Fetching recommendations for user: 66d4a5f20ab4c34e38bfa1fa
[2024-09-01 21:13:27] User 66d4a5f20ab4c34e38bfa1fa has watched 6 videos.
[2024-09-01 21:13:27] Checking other users who watched video: 66d46c156d5cfa54ad796bc3
[2024-09-01 21:13:27] Checking other users who watched video: 66d46c156d5cfa54ad796bc0
[2024-09-01 21:13:27] Checking other users who watched video: 66d46c156d5cfa54ad796bbd
[2024-09-01 21:13:27] Checking other users who watched video: 66d4aa900ab4c34e38bfa24c
[2024-09-01 21:13:27] Checking other users who watched video: 66d4a9fd0ab4c34e38bfa246
[2024-09-01 21:13:27] Checking other users who watched video: 66d4aa900ab4c34e38bfa24c
[2024-09-01 21:13:27] Sorted recommendations for user 66d4a5f20ab4c34e38bfa1fa
[2024-09-01 21:13:27] Not enough recommendations, gathering more videos.
[2024-09-01 21:13:27] Generated recommendations for user 66d4a5f20ab4c34e38bfa1fa:
[2024-09-01 21:13:27] Adding to response - key: recommendations, value:
[2024-09-01 21:13:27] Sent response: recommendations:

[2024-09-01 21:13:27] Connection closed by client or error receiving data.
[2024-09-01 21:13:27] Client socket closed.
[2024-09-01 21:13:43] New client connected from IP: 127.0.0.1 on port 63773
[2024-09-01 21:13:43] Received data: action:recommend
user_id:66d46c156d5cfa54ad796bb3
```

```
[2024-09-01 21:13:27] Parsed message key: action, value: recommend
[2024-09-01 21:13:27] Parsed message key: user_id, value: 66d4a5f20ab4c34e38bfa1fa
[2024-09-01 21:13:27] Fetching recommendations for user: 66d4a5f20ab4c34e38bfa1fa
[2024-09-01 21:13:27] User 66d4a5f20ab4c34e38bfa1fa has watched 6 videos.
[2024-09-01 21:13:27] Checking other users who watched video: 66d46c156d5cfa54ad796bc3
[2024-09-01 21:13:27] Checking other users who watched video: 66d46c156d5cfa54ad796bc0
[2024-09-01 21:13:27] Checking other users who watched video: 66d46c156d5cfa54ad796bbd
[2024-09-01 21:13:27] Checking other users who watched video: 66d4aa900ab4c34e38bfa24c
[2024-09-01 21:13:27] Checking other users who watched video: 66d4a9fd0ab4c34e38bfa246
[2024-09-01 21:13:27] Checking other users who watched video: 66d4aa900ab4c34e38bfa24c
[2024-09-01 21:13:27] Sorted recommendations for user 66d4a5f20ab4c34e38bfa1fa
[2024-09-01 21:13:27] Not enough recommendations, gathering more videos.
[2024-09-01 21:13:27] Generated recommendations for user 66d4a5f20ab4c34e38bfa1fa:
[2024-09-01 21:13:27] Adding to response - key: recommendations, value:
[2024-09-01 21:13:27] Sent response: recommendations:

[2024-09-01 21:13:27] Connection closed by client or error receiving data.
[2024-09-01 21:13:27] Client socket closed.
[2024-09-01 21:13:43] New client connected from IP: 127.0.0.1 on port 63773
[2024-09-01 21:13:43] Received data: action:recommend
user_id:66d46c156d5cfa54ad796bb3
```

Node server :

```
Data received from C++ server: recommendations:66d46c156d5cfa54ad796bbd,66d4a9fd0ab4c34e38bfa246,66d46c156d5cfa54ad796bc0,66d46c156d5cfa54ad796bc3,66d4aa900ab4c34e38bfa24c

Full response received from C++ server
Recommended video IDs: [
  '66d46c156d5cfa54ad796bbd',
  '66d4a9fd0ab4c34e38bfa246',
  '66d46c156d5cfa54ad796bc0',
  '66d46c156d5cfa54ad796bc3',
  '66d4aa900ab4c34e38bfa24c'
]
Connection to C++ server closed
Recommended videos: [
  {
    _id: new ObjectId('66d46c156d5cfa54ad796bbd'),
    title: 'Introduction to Python',
    views: 10,
    url: 'https://www.w3schools.com/html/mov_bbb.mp4',
    owner: {
      _id: new ObjectId('66d46c156d5cfa54ad796bb3'),
      name: 'Alice Smith',
      email: 'alice.smith@example.com',
      password: 'password1',
      picture: 'https://images.pexels.com/photos/624015/pexels-photo-624015.jpeg',
      videos: [Array],
      __v: 1
    }
  }
],
```