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/Ibrahemkewan/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`.
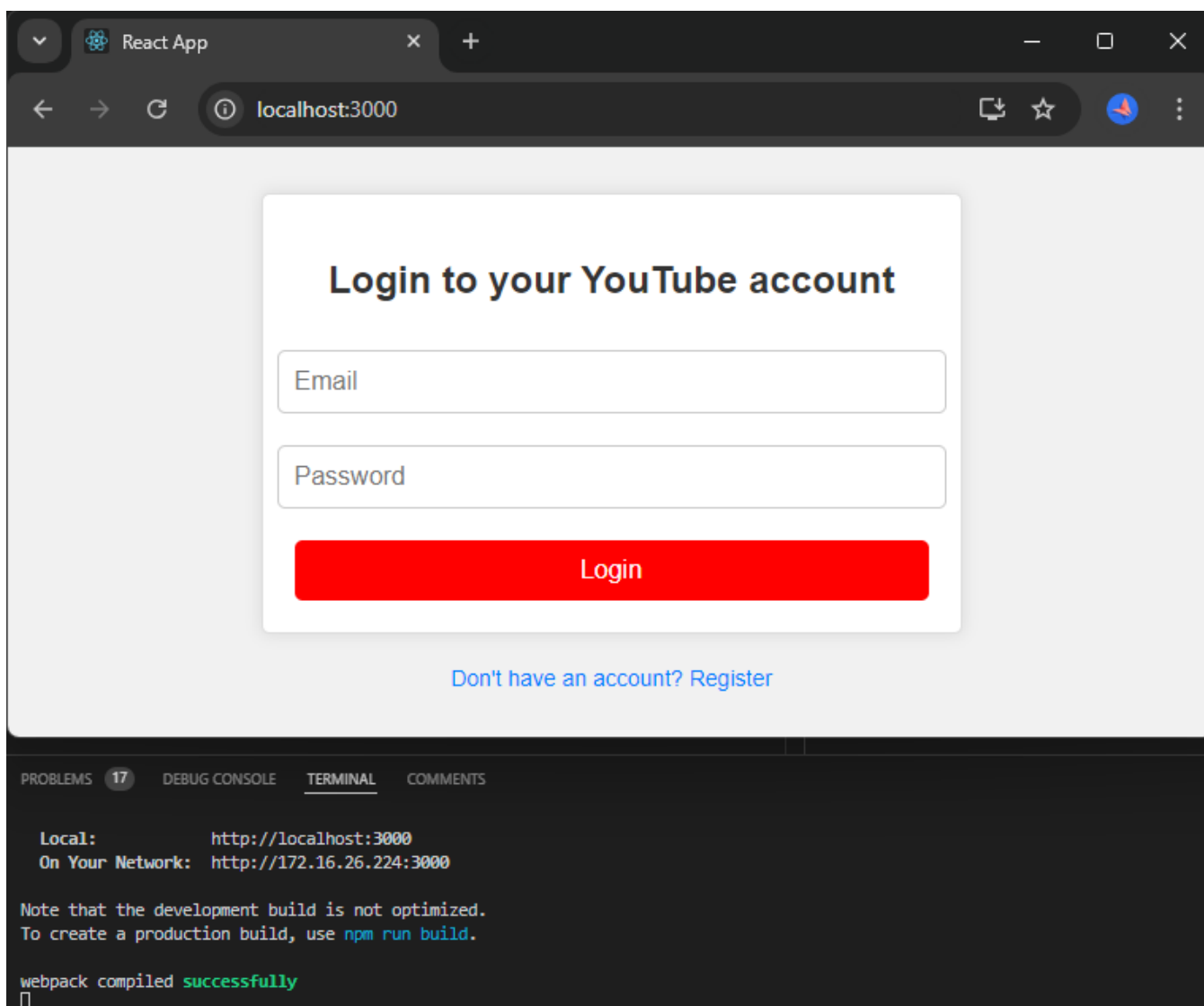
6.

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:

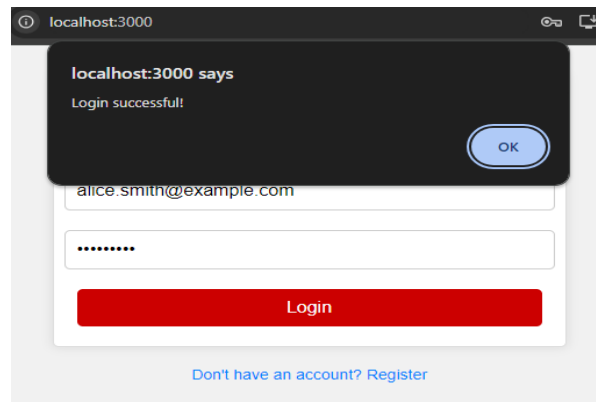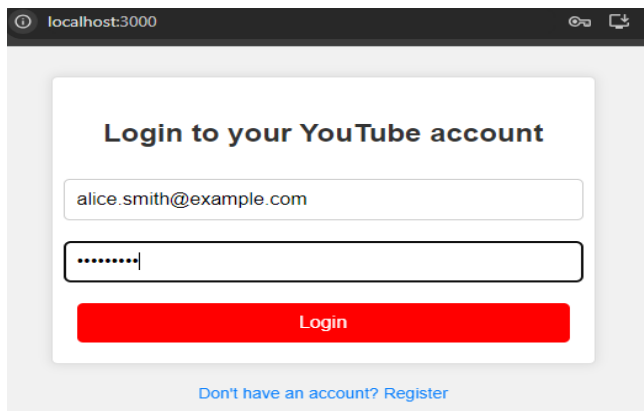- Click on the Run button in Android Studio or use Shift + F10.
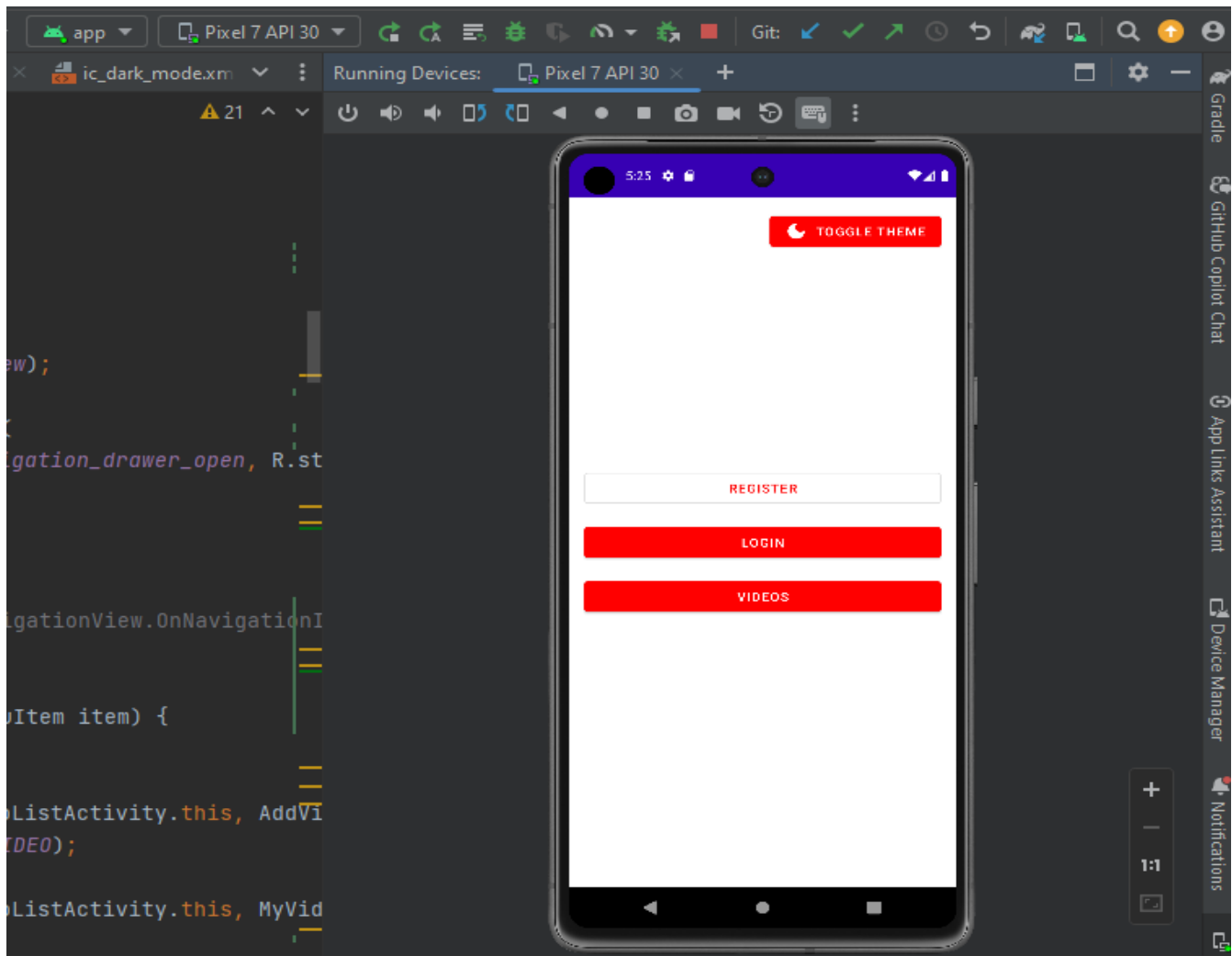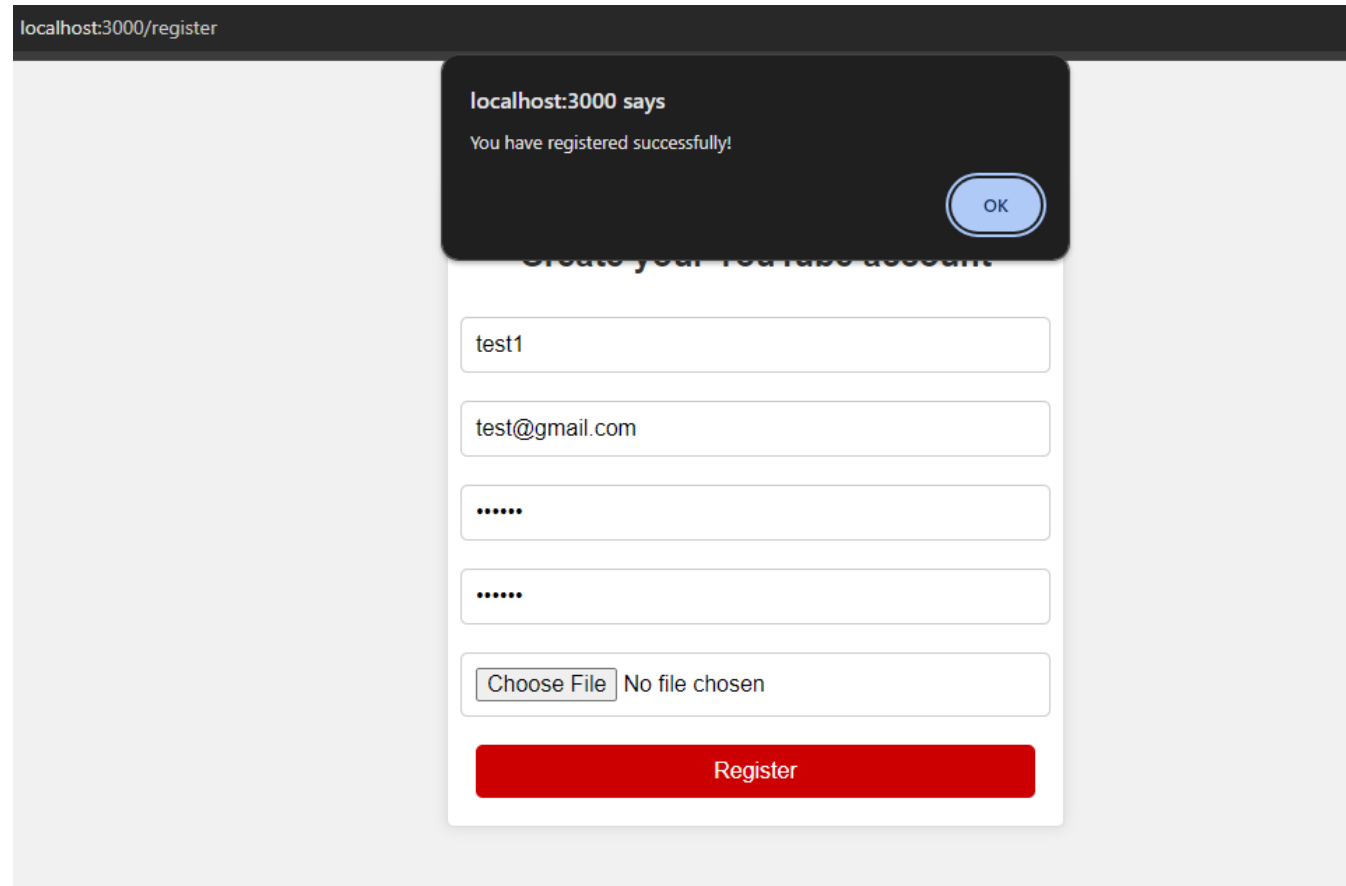
Login and Registration

React Client

- **Login**:
  - Demonstrate the login process within the React client.

- **Registration**:
  - Show the registration process and successful registration message.

localhost:3000/register

localhost:3000 says
You have registered successfully!

OK

Create your YouTube account

test1

test@gmail.com

••••••

••••••

Choose File   No file chosen

Register

Android Client
- **Login**:
  -

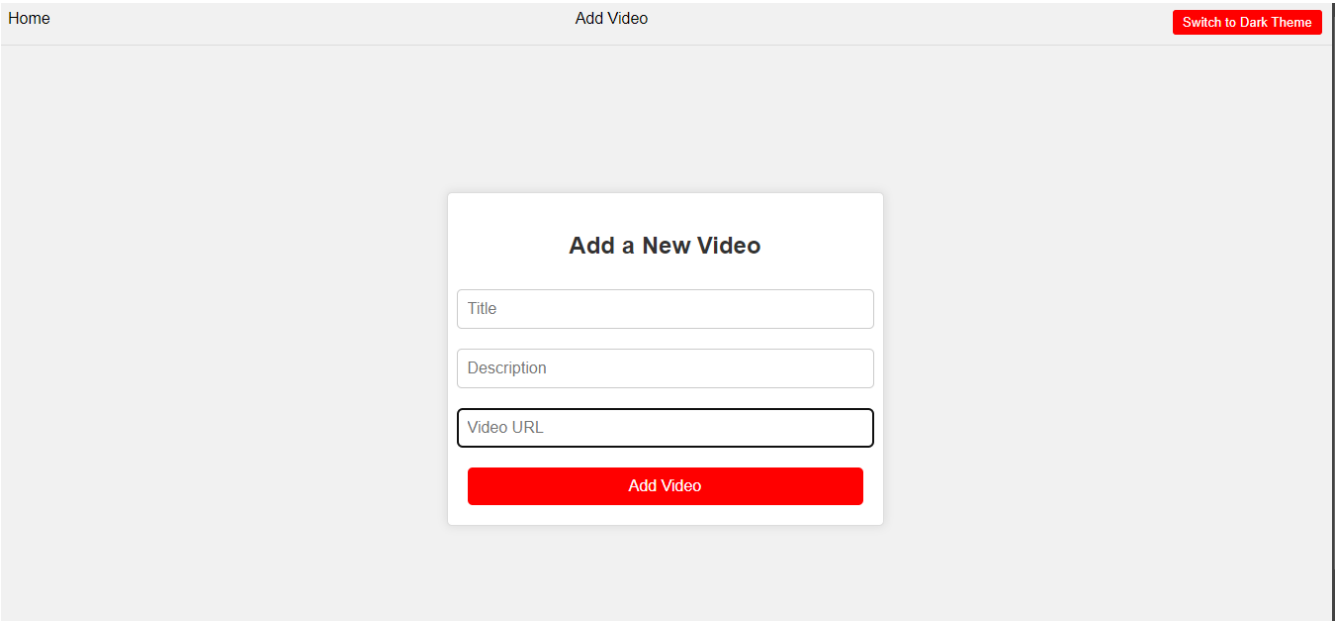Login to your YouTube account
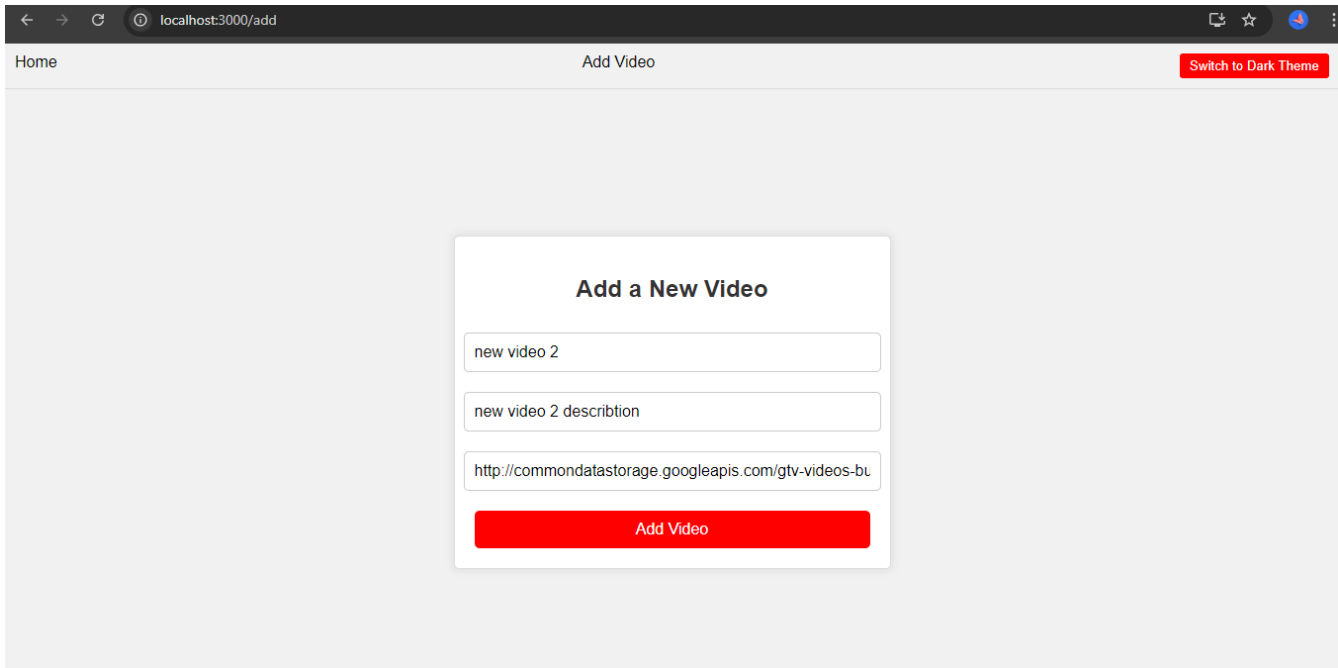
test2@gmail.com

••••••

LOGIN
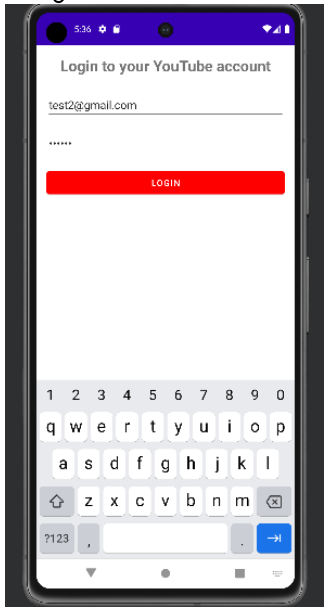
- **Registration**:
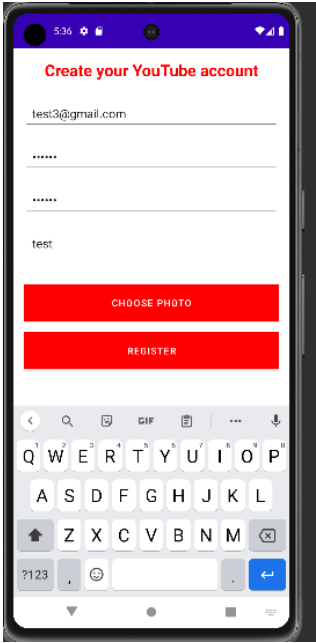
Video Operations

Creating Videos

- **React Client**:

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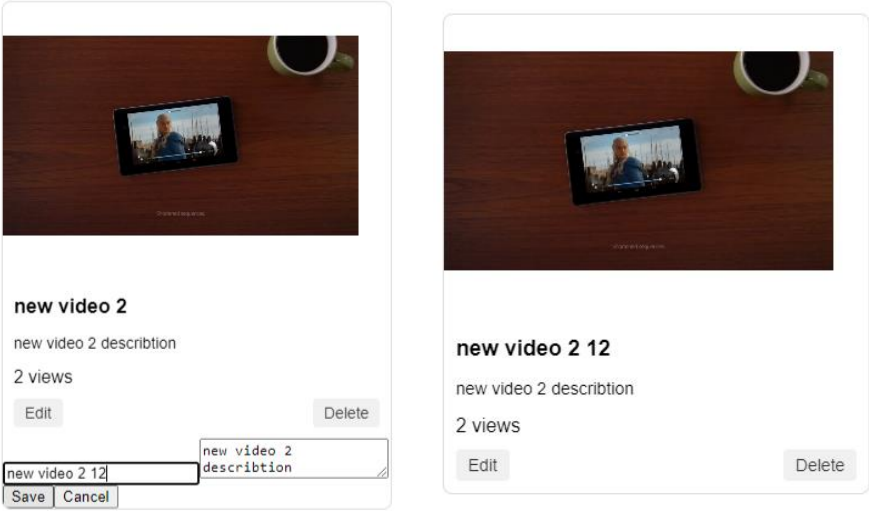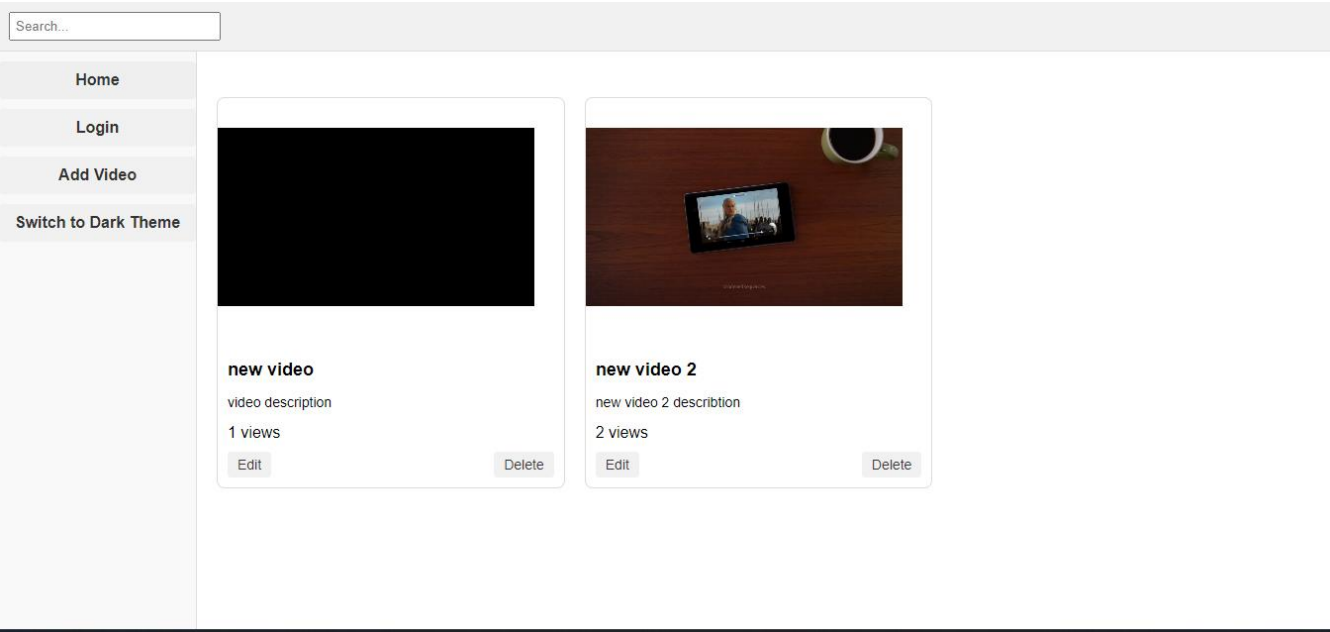 **Used link** : http://commondatastorage.googleapis.com/gtv-videos-bucket/sample/ElephantsDream.mp4
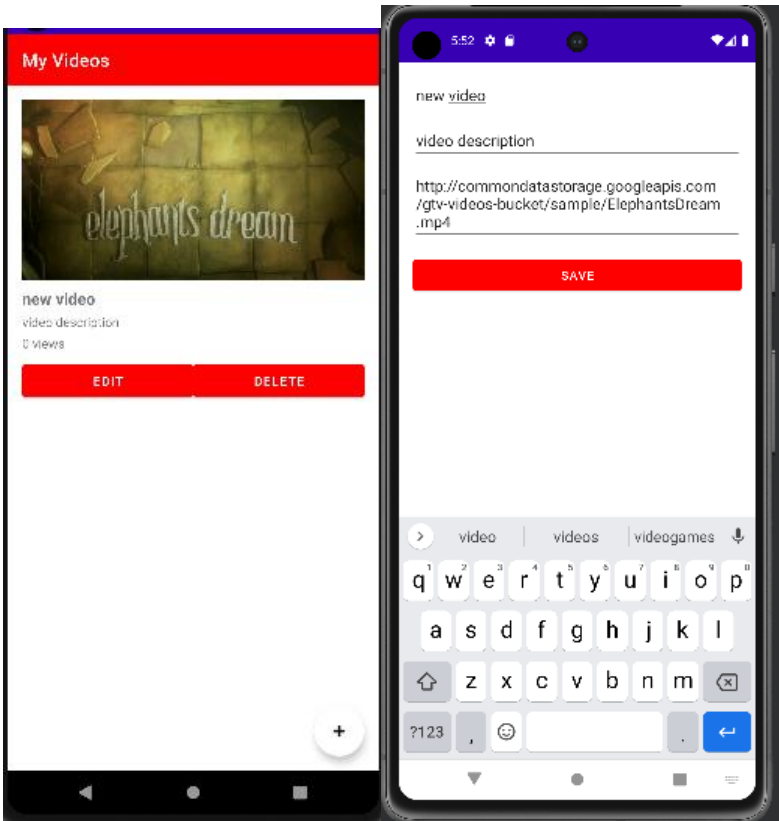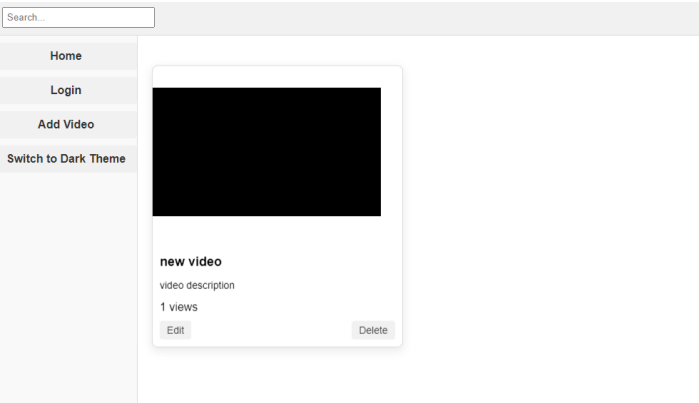

Editing Videos / Deleting Videos

- **React Client**:
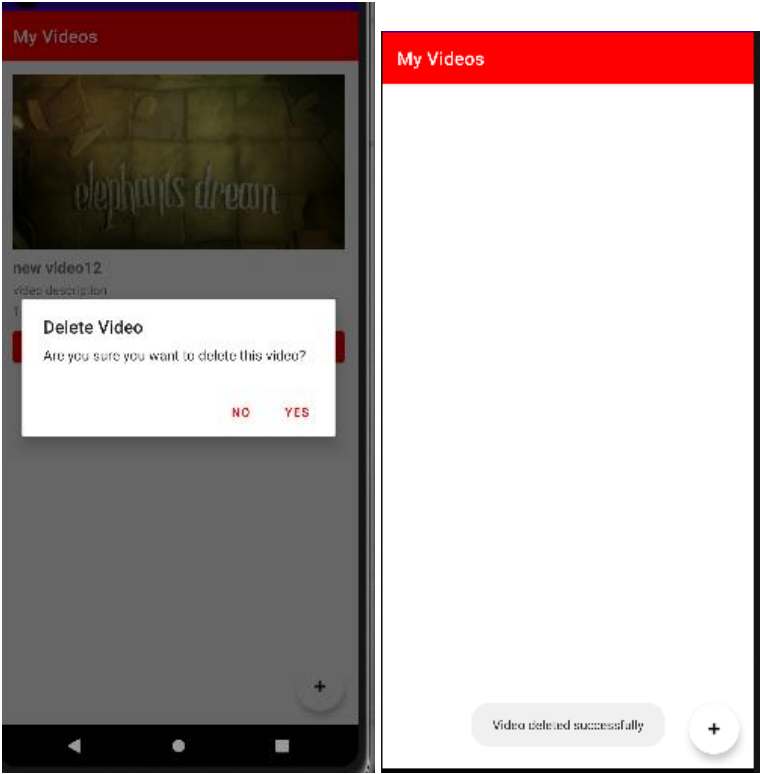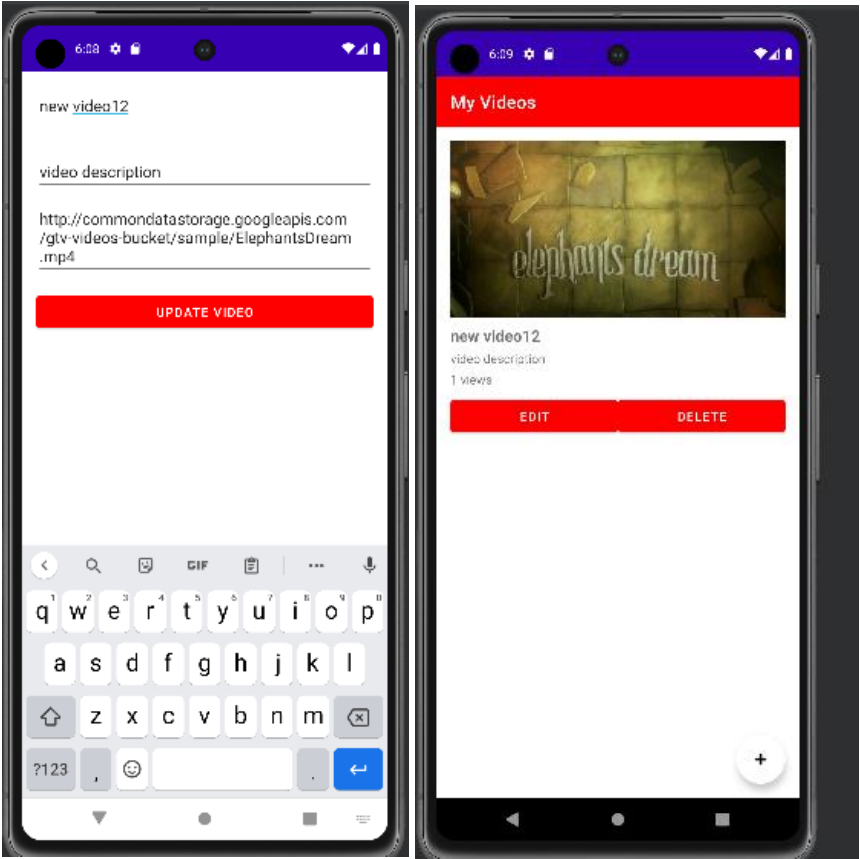 - o

Clicking on my videos in the side bar :

Clicking delete :

-
  -

Android Client:

Viewing Videos

- **React Client**:
  - ○

- **Android Client**:
  -

Recommendations :

Only after clients started seeings videos :
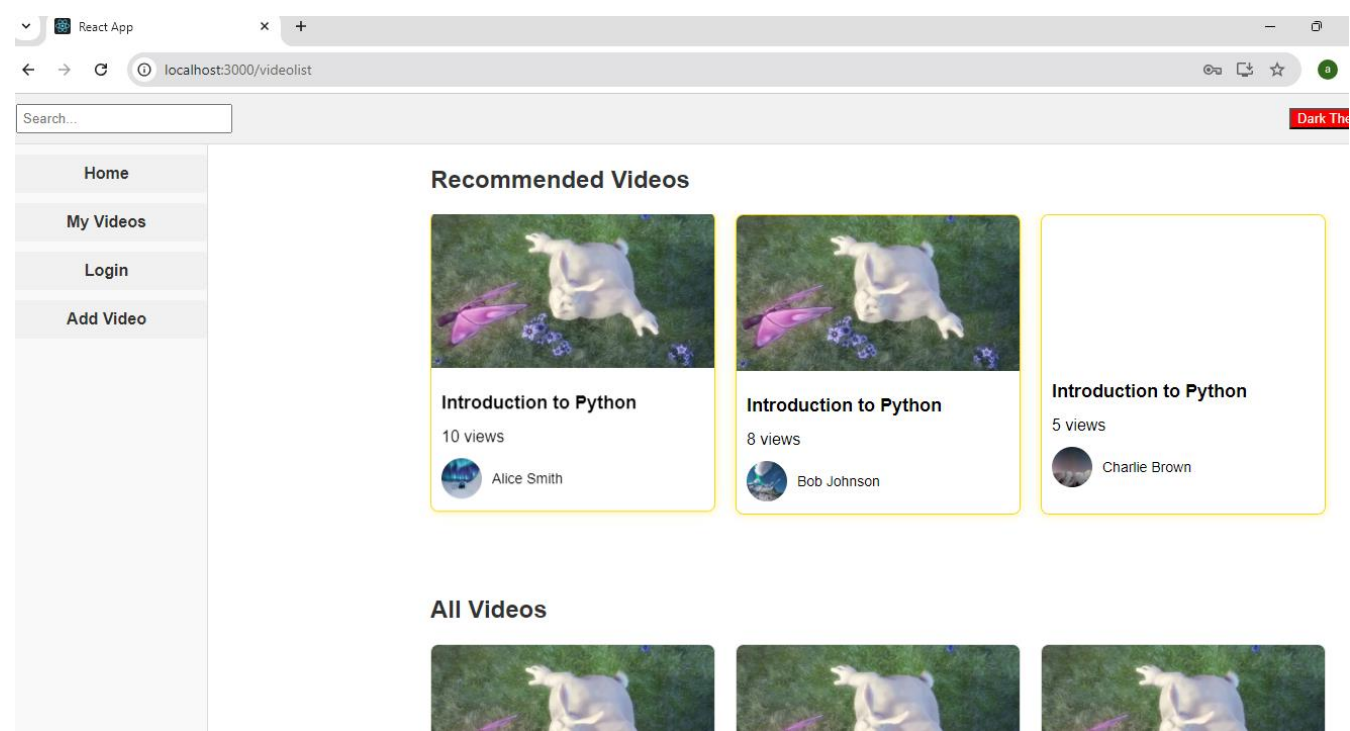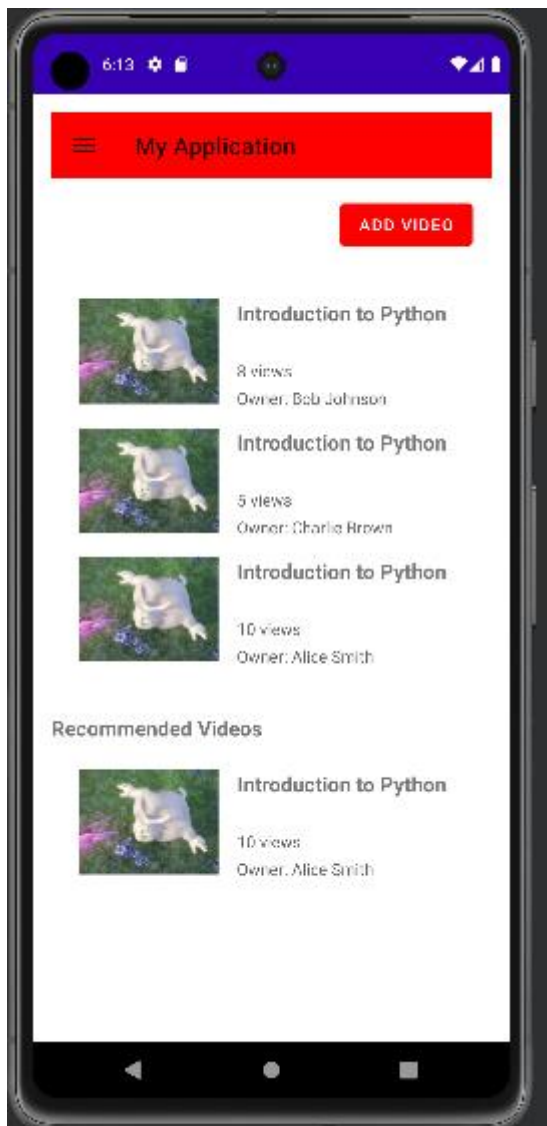
Cpp server:


```
[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
    }
  },
```