YouTube Clone - React Application

A fully functional YouTube clone built with modern React technologies. This project replicates the core features and UI of YouTube, providing a seamless video browsing and watching experience.

React 19.0.0 TailwindCSS 3.4 Redux Toolkit 2.3

Table of Contents

Features

Core Features

- **Homepage** - Video feed grid with infinite scroll
- **Category Filters** - Chip-based category filtering (All, Music, Gaming, News, etc.)
- **Search** - Search bar with autocomplete suggestions and recent search history
- **Video Player** - Full-featured video player with native controls
- **Comments Section** - View comments with nested replies
- **Like/Dislike** - Interactive like and dislike buttons
- **Subscribe** - Subscribe to channels functionality

Navigation

- **Sidebar** - Collapsible navigation sidebar
- **Mobile Bottom Nav** - Bottom navigation bar for mobile devices
- **Responsive Design** - Works on desktop, tablet, and mobile

User Features

- **Watch History** - Track watched videos with progress
- **Watch Later** - Save videos to watch later
- **Liked Videos** - Collection of liked videos
- **Dark/Light Mode** - Toggle between themes (persisted)

Additional Pages

- **Channel Page** - Channel banner, stats, and video tabs

- **Trending** - Trending videos sorted by views
- **Search Results** - Search results page with filters

Tech Stack

Technology	Version	Purpose
React	19.0.0	UI Framework
React Router DOM	7.1.1	Client-side routing
Redux Toolkit	2.3.0	State management
TanStack Query	5.62.0	Server state & caching
Axios	1.7.9	HTTP client
Tailwind CSS	3.4.17	Styling
react-player	2.16.0	Video playback
react-icons	5.4.0	Icon library

Project Structure

```
youtube-clone-react/
├── public/
│   ├── index.html
│   ├── manifest.json
│   └── robots.txt
├── src/
│   ├── api/                 # API layer
│   │   ├── axios.js          # Axios instance configuration
│   │   ├── videoApi.js       # Mock API functions
│   │   └── index.js          # API exports
│   ├── components/          # Reusable components
│   │   ├── CategoryBar/      # Category filter chips
│   │   ├── ChannelCard/      # Channel display card
│   │   ├── CommentSection/   # Comments display
│   │   ├── MobileBottomNav/  # Mobile navigation
│   │   ├── Navbar/           # Top navigation bar
│   │   ├── SearchBar/        # Search with suggestions
│   │   ├── Sidebar/          # Side navigation
│   │   ├── SkeletonLoader/   # Loading skeletons
│   │   ├── SuggestedVideos/  # Related videos
│   │   ├── VideoCard/        # Video thumbnail card
│   │   ├── VideoGrid/        # Video grid layout
│   │   ├── VideoPlayer/      # Video player component
│   │   └── index.js          # Component exports
│   ├── data/
│   │   └── mockData.js       # Mock videos, channels, comments
│   ├── hooks/               # Custom React hooks
```

```
│   │   ├── useCategories.js    # Categories data hook
│   │   ├── useChannel.js       # Channel data hook
│   │   ├── useClickOutside.js  # Click outside detection
│   │   ├── useComments.js      # Comments data hook
│   │   ├── useIntersectionObserver.js  # Infinite scroll
│   │   ├── useSearch.js        # Search functionality
│   │   ├── useVideos.js        # Videos data hook
│   │   └── index.js            # Hook exports
│   ├── layouts/                # Layout components
│   │   ├── MainLayout.jsx      # Layout with sidebar
│   │   ├── WatchLayout.jsx     # Layout for video page
│   │   └── index.js            # Layout exports
│   ├── pages/                  # Page components
│   │   ├── Channel/            # Channel page
│   │   ├── History/            # Watch history
│   │   ├── Home/               # Homepage
│   │   ├── LikedVideos/        # Liked videos
│   │   ├── NotFound/           # 404 page
│   │   ├── Search/             # Search results
│   │   ├── Trending/           # Trending videos
│   │   ├── Watch/              # Video watch page
│   │   ├── WatchLater/         # Watch later playlist
│   │   └── index.js            # Page exports
│   ├── store/                  # Redux store
│   │   ├── slices/             # Redux slices
│   │   │   ├── historySlice.js
│   │   │   ├── likedVideosSlice.js
│   │   │   ├── searchSlice.js
│   │   │   ├── sidebarSlice.js
│   │   │   ├── subscriptionsSlice.js
│   │   │   ├── themeSlice.js
│   │   │   └── watchLaterSlice.js
│   │   └── index.js            # Store configuration
│   ├── utils/
│   │   └── helpers.js          # Utility functions
│   ├── App.js                  # Main App component
│   ├── index.css               # Global styles
│   └── index.js                # Entry point
├── .eslintrc.js                # ESLint configuration
├── .gitignore                  # Git ignore file
├── package.json                # Dependencies
├── postcss.config.js           # PostCSS configuration
├── tailwind.config.js          # Tailwind configuration
└── README.md                   # This file
```

Installation

Prerequisites

- Node.js (v18 or higher)
- npm or yarn

Steps

1. **Clone the repository**

```
git clone https://github.com/yourusername/youtube-clone-react.git
cd youtube-clone-react
```

2. **Install dependencies**

```
npm install
```

3. **Start the development server**

```
npm start
```

4. **Open in browser**

```
http://localhost:3000
```

Build for Production

```
npm run build
```

Usage

Navigation

- **Home**: Browse all videos with category filters
- **Search**: Use the search bar to find videos
- **Sidebar**: Access different sections (History, Watch Later, Liked Videos)
- **Dark Mode**: Toggle theme using the moon/sun icon in navbar

Watching Videos

1. Click on any video thumbnail to watch
2. Use native video controls to play/pause, seek, adjust volume
3. View video description, likes, and channel info
4. Browse suggested videos in the sidebar

Managing Playlists

- **Watch Later**: Click the clock icon on any video card
- **Liked Videos**: Click the like button on a video
- **History**: Automatically tracked when you watch videos

Pages & Components

Pages

Page	Route	Description
Home	/	Main video feed with categories
Watch	/watch/:videoId	Video player page
Search	/search?q=query	Search results
Channel	/channel/:channelId	Channel page
History	/history	Watch history
Watch Later	/watch-later	Saved videos
Liked Videos	/liked	Liked videos
Trending	/trending	Trending videos

Key Components

Component	Description
Navbar	Top navigation with search and theme toggle
Sidebar	Collapsible side navigation
VideoCard	Video thumbnail with metadata
VideoGrid	Responsive grid/list of videos
VideoPlayer	React Player wrapper with controls
CategoryBar	Horizontal scrollable category chips
SearchBar	Search input with autocomplete
CommentSection	Comments with replies
SuggestedVideos	Related videos sidebar

State Management

Redux Slices

Slice	Purpose	Persistence
themeSlice	Dark/light mode	localStorage
sidebarSlice	Sidebar open/close state	No
searchSlice	Search query & suggestions	localStorage (recent)
historySlice	Watch history & progress	localStorage
watchLaterSlice	Watch later playlist	localStorage

likedVideosSlice	Liked videos	localStorage
subscriptionsSlice	Channel subscriptions	localStorage

TanStack Query

Used for server state management with:

- Automatic caching (5 minutes stale time)
- Background refetching
- Infinite scroll support
- Optimistic updates

API Layer

Mock API Functions

```
// Videos
getVideos({ pageParam, category, limit })  // Get paginated videos
getVideoById(videoId)                      // Get single video
getRelatedVideos(videoId, limit)           // Get related videos
getTrendingVideos(limit)                   // Get trending videos

// Search
searchVideos(query, limit)                 // Search videos
getSearchSuggestions(query)                // Get suggestions

// Channel
getChannelById(channelId)                  // Get channel info
getChannelVideos(channelId, limit)         // Get channel videos

// Comments
getComments(videoId)                       // Get video comments
addComment(videoId, comment)               // Add new comment

// Categories
getCategories()                            // Get all categories
```

Sample Video Sources

The app uses public domain videos from Google's sample video storage:

- Big Buck Bunny
- Elephants Dream
- Sintel
- Tears of Steel
- And more...

Styling

Tailwind CSS Configuration

Custom YouTube-like color palette:

```
colors: {
  youtube: {
    red: '#FF0000',
    dark: '#0F0F0F',
    gray: {
      50: '#F9F9F9',
      100: '#F1F1F1',
      200: '#E5E5E5',
      // ...
      900: '#0F0F0F',
    }
  }
}
```

Responsive Breakpoints

- Mobile: < 640px
- Tablet: 640px - 1024px
- Desktop: > 1024px

Dark Mode

Implemented using Tailwind's `dark:` variant with class-based toggling.

Screenshots

Homepage

```
+----------------------------------------+
|  [Logo]  [====Search====]  [Icons] [User]|
+----------------------------------------+
|        | [All] [Music] [Gaming] [News]   |
| Side   |  +------+  +------+  +------+    |
| bar    |  |Video |  |Video |  |Video |    |
|        |  +------+  +------+  +------+    |
|        |  +------+  +------+  +------+    |
|        |  |Video |  |Video |  |Video |    |
+----------------------------------------+
```

Watch Page

```
+----------------------------------------+
|  [Logo]  [====Search====]  [Icons] [User]|
+----------------------------------------+
|  +-----------------+  +--------------+ |
|  |                 |  | Suggested    | |
|  |   Video Player  |  | +--+ +--+    | |
```

```
|  |                   |  |  |  |  |  |     | |
|  +------------------+  | +--+ +--+     | |
|  Title            |                 | |
|  Channel | Subscribe |                 | |
|  [Like] [Dislike]     +---------------+ |
|  Description...                          |
|  Comments...                             |
+-----------------------------------------+
```

Future Enhancements

- ☐ Real YouTube API integration
- ☐ User authentication
- ☐ Video upload functionality
- ☐ Playlist creation and management
- ☐ Shorts support
- ☐ Live streaming
- ☐ Notifications
- ☐ Picture-in-Picture mode
- ☐ Keyboard shortcuts
- ☐ Video quality selection
- ☐ Subtitles/Captions support
- ☐ Share functionality
- ☐ Mini player

Contributing

1. Fork the repository
2. Create your feature branch (`git checkout -b feature/AmazingFeature`)
3. Commit your changes (`git commit -m 'Add some AmazingFeature'`)
4. Push to the branch (`git push origin feature/AmazingFeature`)
5. Open a Pull Request

License

This project is licensed under the MIT License - see the [LICENSE](#) file for details.

Acknowledgments

- [React](#)
- [Tailwind CSS](#)
- [Redux Toolkit](#)
- [TanStack Query](#)
- [React Player](#)
- [React Icons](#)
- Sample videos from [Google](#)

Contact

Your Name - @yourtwitter

Project Link: https://github.com/yourusername/youtube-clone-react

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Made with React