CNIT 58100-048 Milestone 4

Summary

YourTube provides users the possibility to maintain separate profiles while consuming video content. Milestone 4 consist of UI upgrade to the application using React.js framework. The backend is setup using Django and 3 models have been created for YourTube users, videos and watchlist. The frontend renders the list of videos, watchlist and managers users from the SQLite database.

The intended users are all the users of YouTube who wish to have sense of control over their watch time and type of content according to their motivation.

Users will be able to toggle between "Entertainment" and "Information" profile. They will also be able to disable or enable the recommendations. All the fields in the table and views are minimalized to accommodate the requirements of this milestone. Communication to user (success or error) is communicated to the user using Alerts.

This milestone builds upon Milestone 3, incorporating changes and enhancements. Despite any mentions of Milestone 3 in the URL and account password, please disregard them as part of the ongoing Milestone 4. The developments and modifications made in Milestone 4 represent the latest advancements in the project, ensuring its continued progress and improvement.

Application Setup

We will have to setup the frontend and backend before accessing the YourTube application.

Kindly download the folder from GitHub.

Backend- Django Setup

- cd YourTube_Backend_Django
- pipenv shell
- pipenv install
- cd yourtube
- python manage.py runserver

We are good to go. The backend is up and running. Now get back to the main folder.

Frontend – React Setup (Make sure you have Node.js and npm installed in your local machine)

- cd YourTube_Frontend_React

- npm install
- npm start

We are all set to explore the application. Go to a browser and type http://localhost:3000.

This will direct you to http://localhost:3000/CNIT581-048-Milestone3.

Details

User Account

I have created a default user for you to login and explore. The credentials are as follows,

Email: **cnituser@purdue.edu**
Password: **Milestone3***

The app has a register page which will onboard new users. Feel free to create a new user credentials for yourself if you want to. The credentials will be stored to your local SQLite DB.

URLs

Go to a browser and type http://localhost:3000.

This will direct you to http://localhost:3000/CNIT581-048-Milestone3.

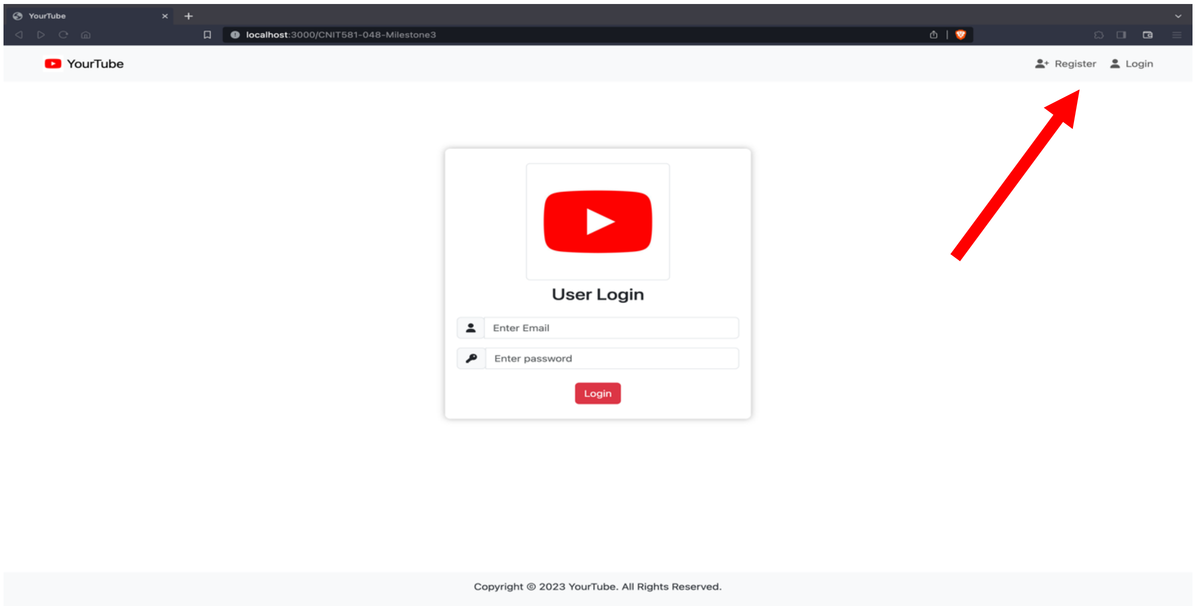
You will be able to access only the /login, /register and /CNIT581-048-Milestone3 routes when you are not logged in.

Dynamic, asynchronous interaction

The YourTube application utilizes dynamic and asynchronous data exchange within the app. With a React-based front-end, it incorporates an AJAX-based implementation for asynchronous updates. Video lists and watchlist content are retrieved using the GET method, while new video and user creations employ the POST method. User details editing is accomplished through the UPDATE method. These changes dynamically reflect on the screen without requiring a page refresh. The interchange of data between the database and the front-end is managed through our backend, utilizing the JSON data interchange format.

Dynamic, asynchronous interactions from Milestone 3- Views and Templates

Home View



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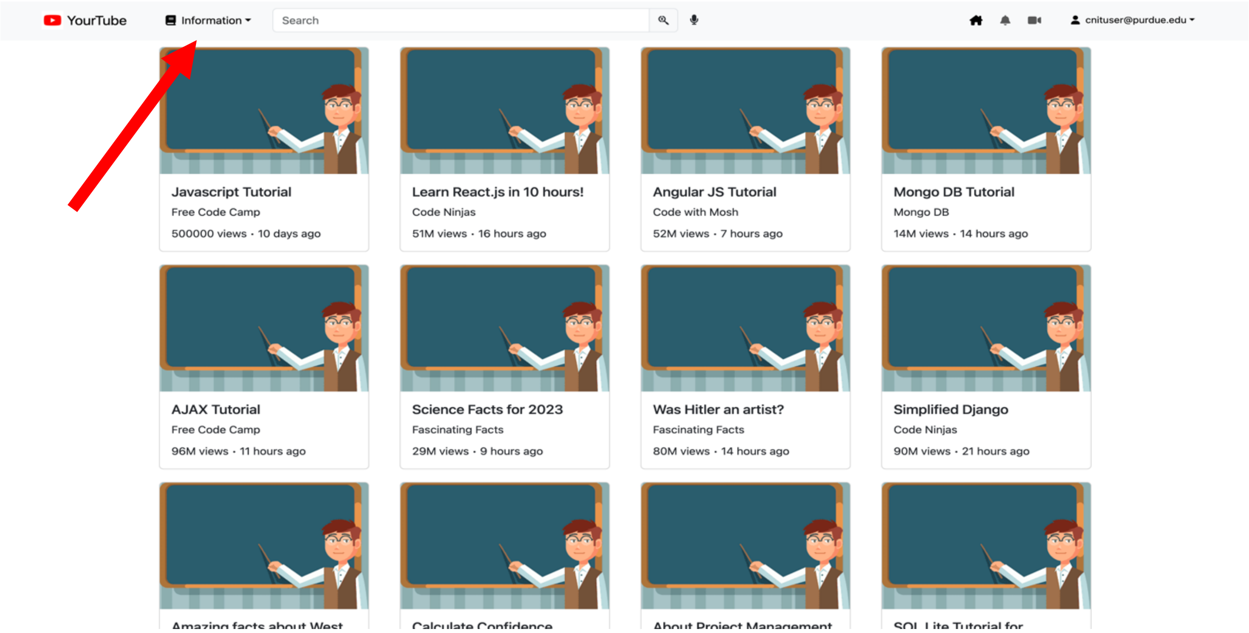
User will be taken to this landing screen. Register and Login are the actions allowed before getting into the application. You must be logged in to explore the other views of the application.

List View



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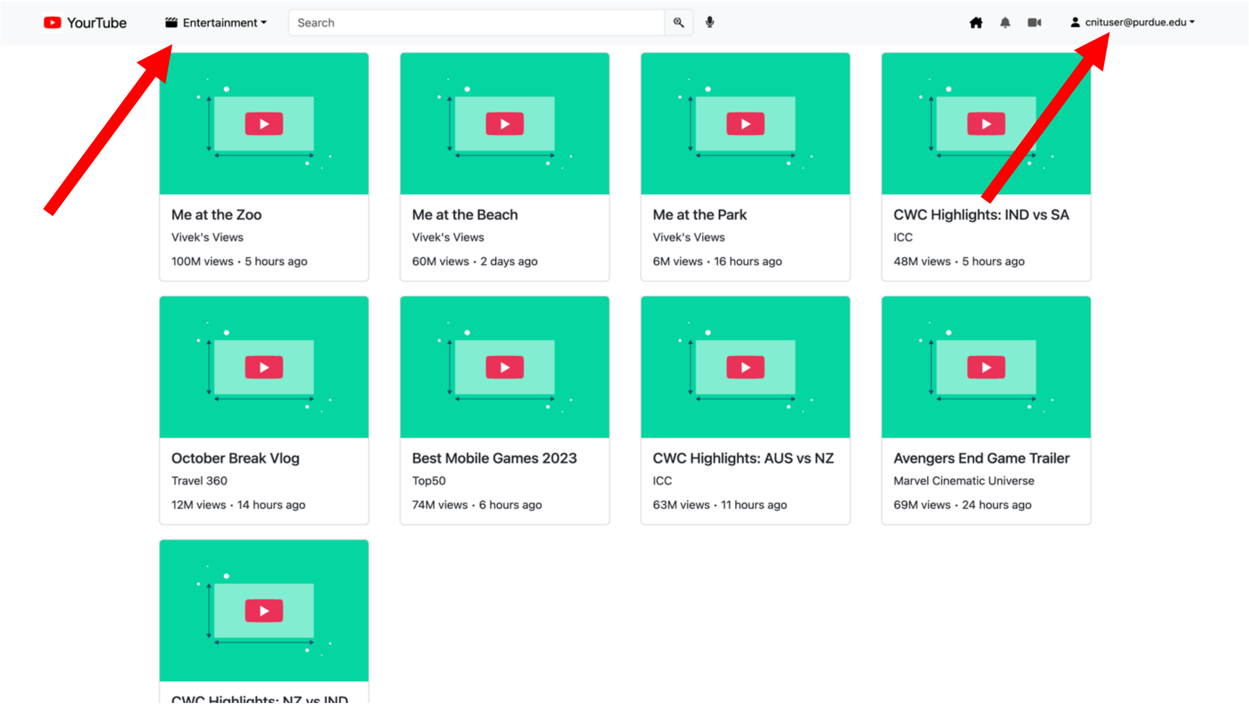


Me at the Zoo
Vivek's Views
100M views · 5 hours ago

Me at the Beach
Vivek's Views
60M views · 2 days ago

Me at the Park
Vivek's Views
6M views · 16 hours ago

CWC Highlights: IND vs SA
ICC
48M views · 5 hours ago

October Break Vlog
Travel 360
12M views · 14 hours ago

Best Mobile Games 2023
Top50
74M views · 6 hours ago

CWC Highlights: AUS vs NZ
ICC
63M views · 11 hours ago

Avengers End Game Trailer
Marvel Cinematic Universe
69M views · 24 hours ago

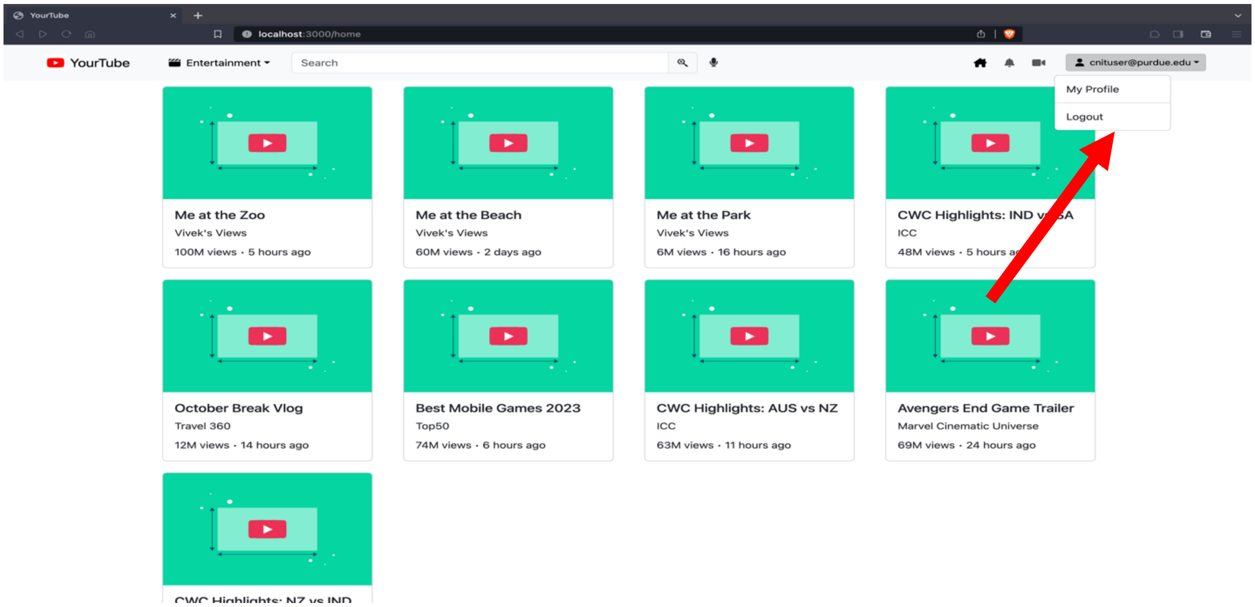
CWC Highlights: NZ vs IND

The Homepage lists the list of videos based on the user profile. User will be able to toggle between the profiles using the dropdown given near the search box. The list of videos will change dynamically based on the user input which is the video category of “Entertainment” and “Information”.

The Navbar will have the user email ID indicating that the user has logged in to the application.

Detail View

For detail view, user can see their own profile by clicking the dropdown denoted by the user email and choose “My Profile” from the navigation bar. This will take the user to a detailed page (/profile) which displays the information of the user. This is retrieved using the ‘GET’ method. Backend authenticates and checks the authorization the API call before sending out the response.



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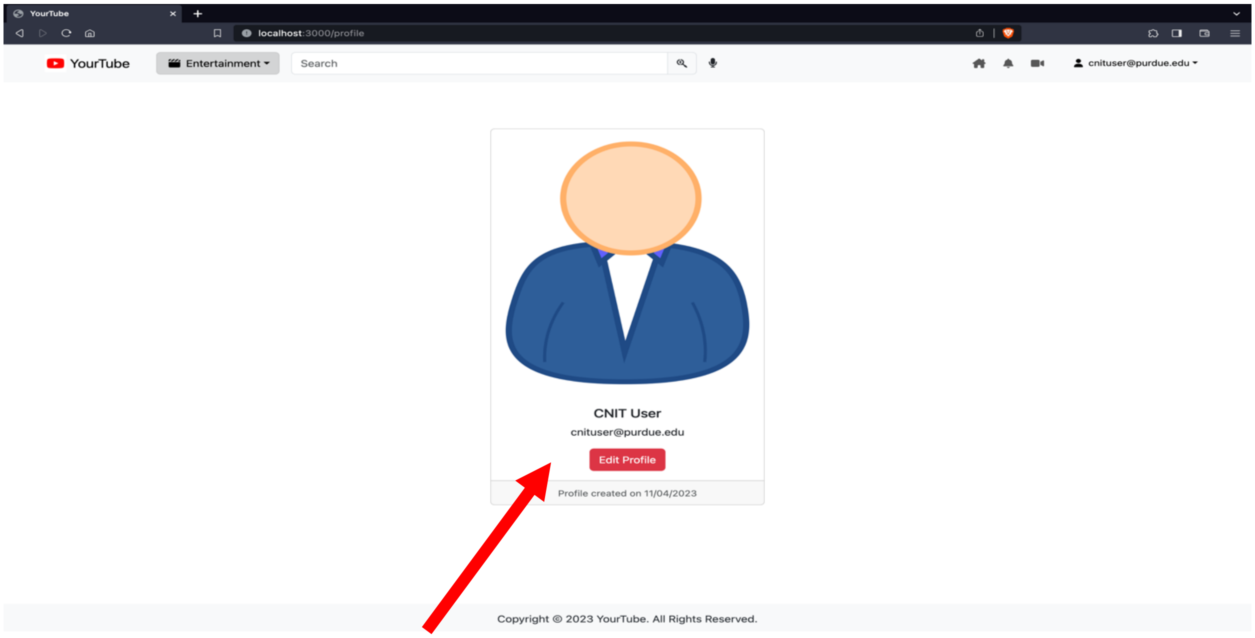

CNIT User
cnituser@purdue.edu
Profile created on 11/04/2023

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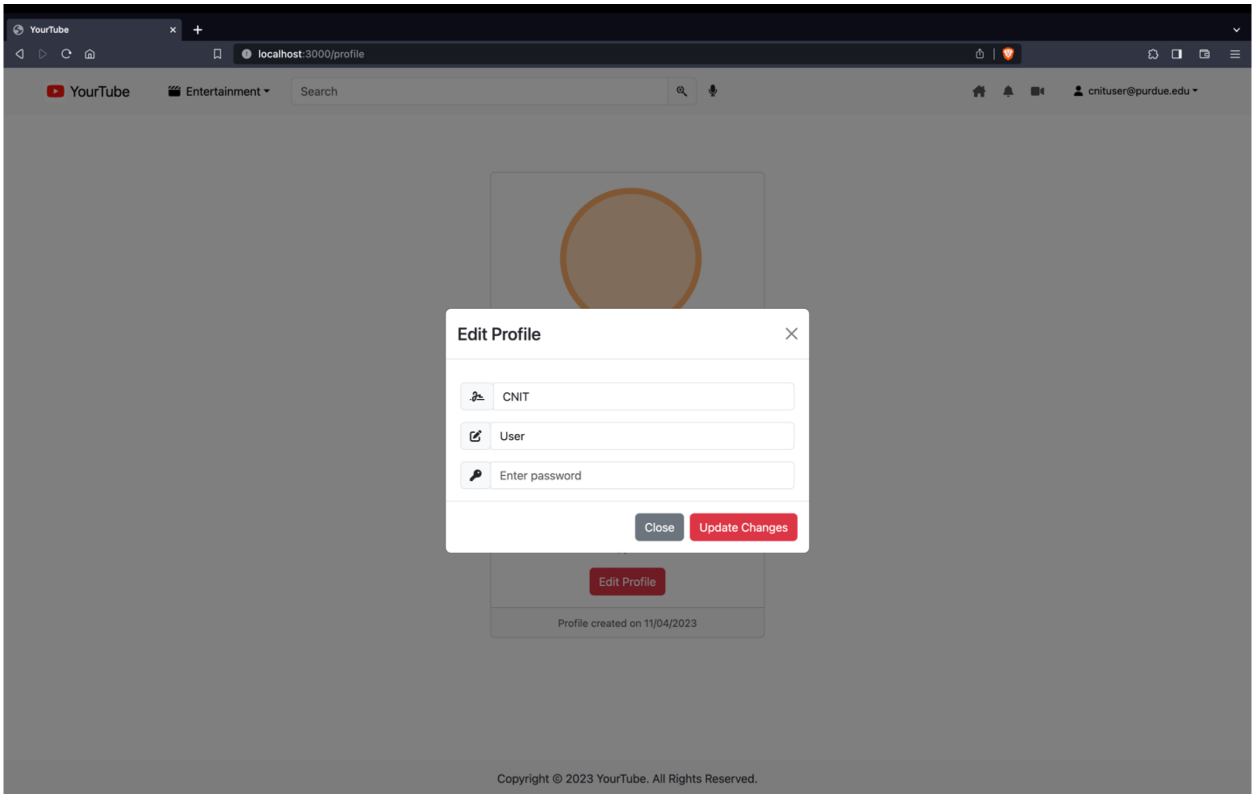
This page displays the user’s name, email address and the date in which the profile was created on along with the user profile image (yet to be integrated, as of now the image is static). The page has a “Edit Profile” button which will allow us to update the user details.

Edit View



Edit Profile

CNIT

User

Enter password

Profile created on 11/04/2023

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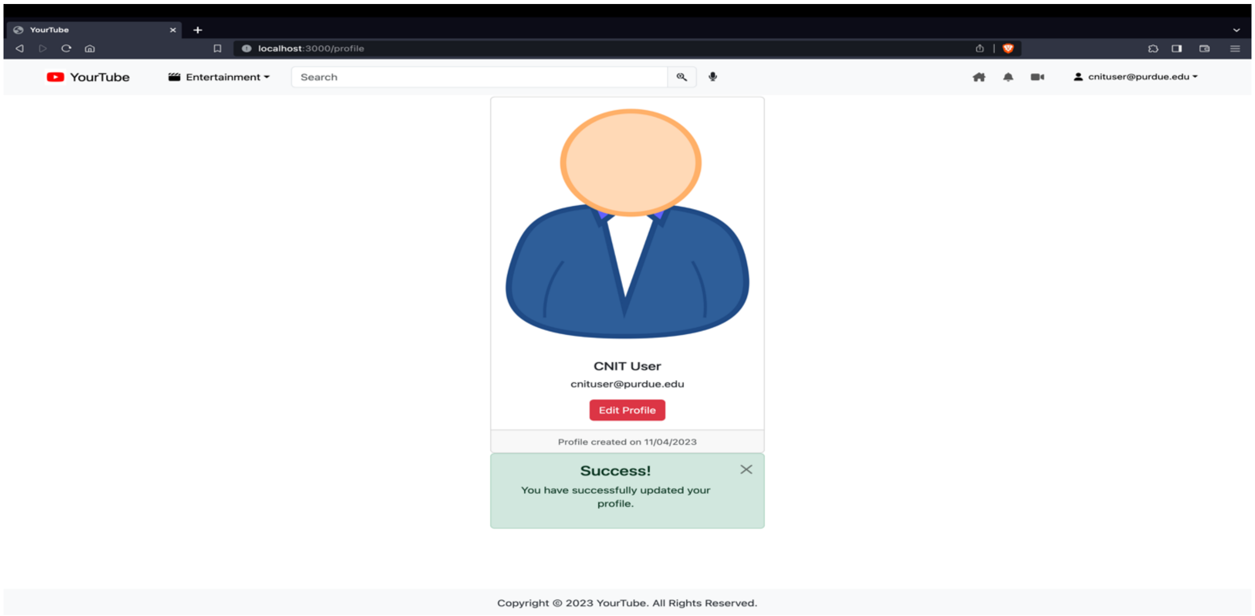
This view will allow us to update the existing information of the user including first name, last name and password (more fields to be added). This uses ‘PUT’ method and needs authentication.



CNIT User

cnituser@purdue.edu

Profile created on 11/04/2023

Success!

You have successfully updated your profile.

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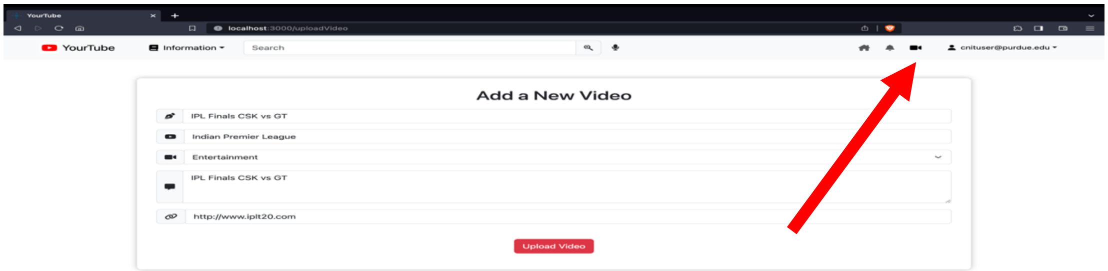
Add View

User can access the video icon on the navbar to add new videos. This operation uses POST method and can be performed only if the user is logged in.



Add a New Video

IPL Finals CSK vs GT

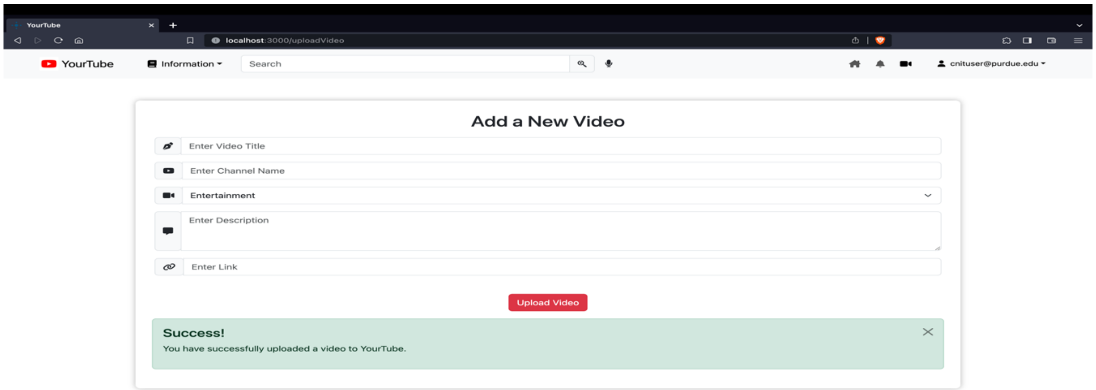
Indian Premier League

Entertainment

IPL Finals CSK vs GT

http://www.iplt20.com

The change can be directly viewed in the home page where a new video will be added based on the addition of new video to the video list from the database.



Add a New Video

Enter Video Title

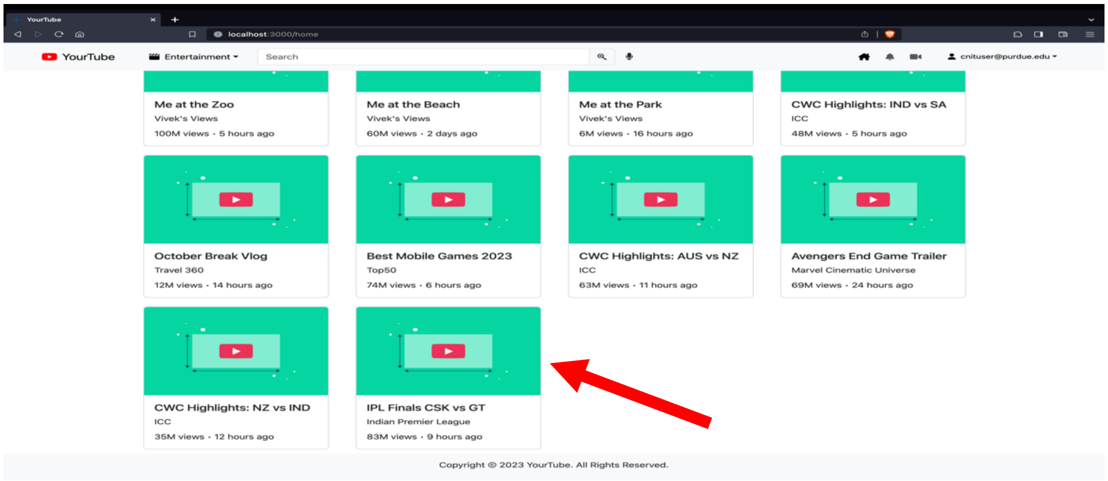
Enter Channel Name

Entertainment

Enter Description

Enter Link

Success!
You have successfully uploaded a video to YourTube.



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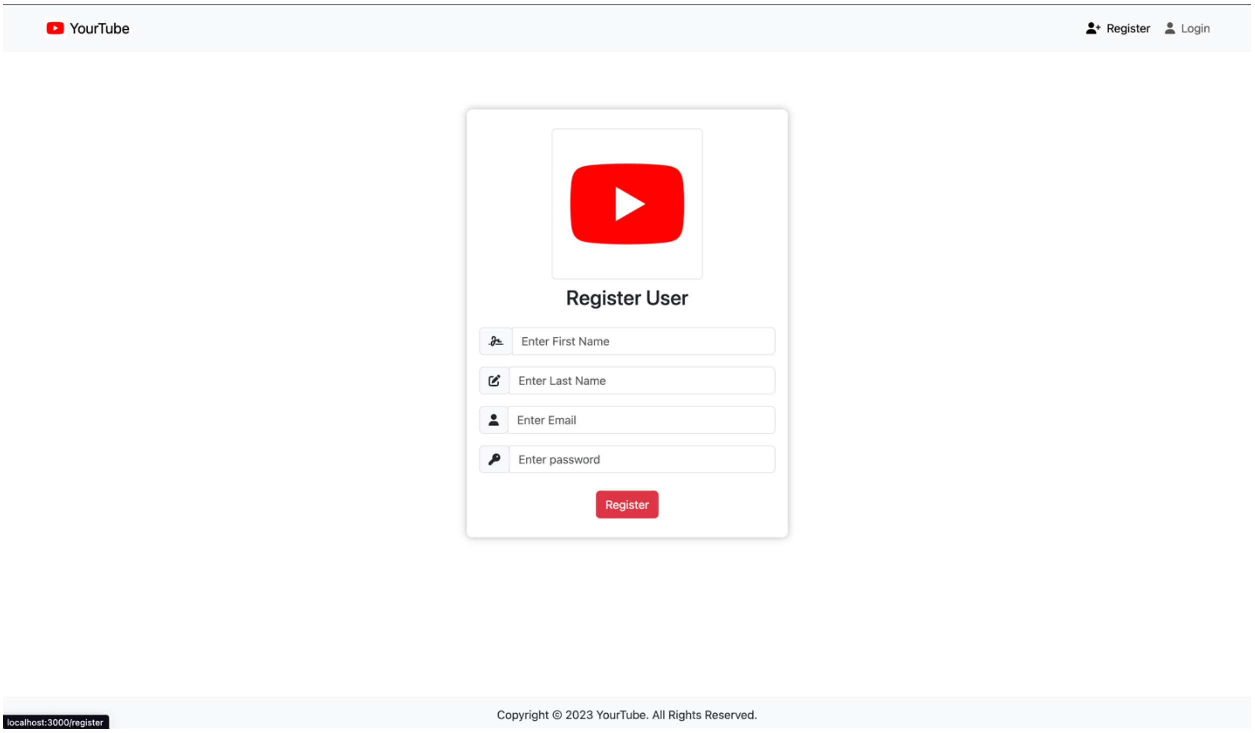
One other add view is the user registration view (POST method). But the difference is that this add view is an unauthenticated one due to the nature of the action.



The user login is maintained using the Auth Context and local storage in the browser. The backend sends a token (1 hr expiration) when the user successfully logs in. This token can be used for further API calls.

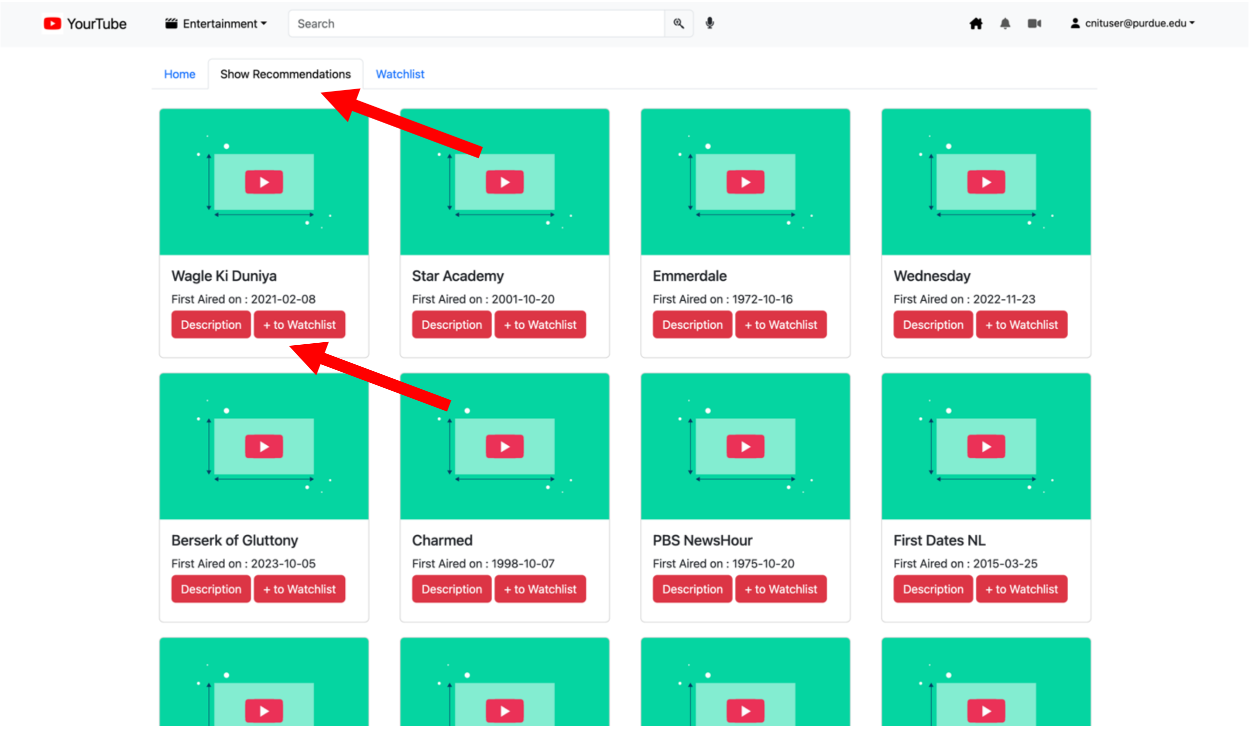
Integrating external data from a web service API

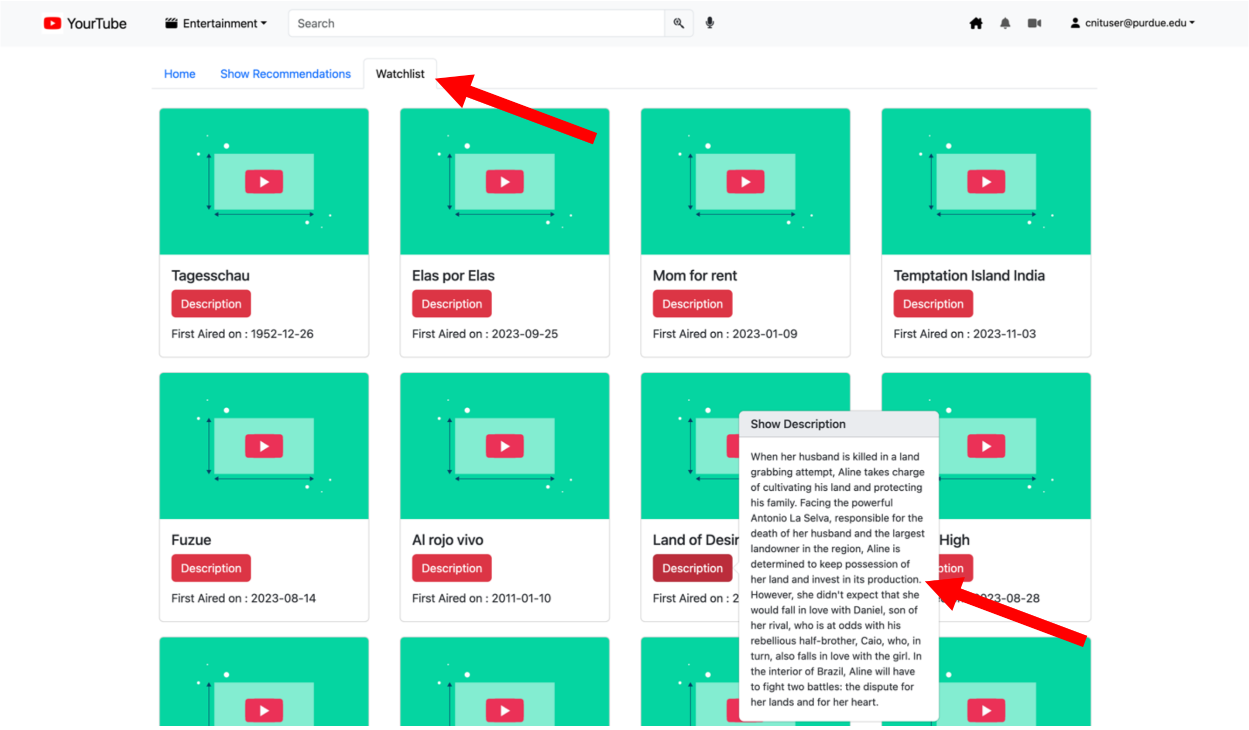
I've integrated TMDb, an API service, to fetch TV show recommendations for users and display them in their Entertainment profile. After creating an account with TMDb, I obtained an API key, which I then used to retrieve recommendation JSON data. This information is presented in a dedicated tab, allowing users to explore and consider shows.

Within this tab, users have the option to add selected shows to their watchlist. A separate watchlist tab is provided for users to conveniently view and manage the shows they've added, making it easy to keep track of their preferred content for future viewing. This seamless integration enhances the user experience by offering personalized TV show recommendations and a convenient way to curate their watchlist.

Dynamic, asynchronous interactions from Milestone 4

The data from the TMDb third party API is listed in the Show Recommendations tab. User will be able to add the recommendations to the watchlist.





When her husband is killed in a land grabbing attempt, Aline takes charge of cultivating his land and protecting his family. Facing the powerful Antonio La Selva, responsible for the death of her husband and the largest landowner in the region, Aline is determined to keep possession of her land and invest in its production. However, she didn't expect that she would fall in love with Daniel, son of her rival, who is at odds with his rebellious half-brother, Caio, who, in turn, also falls in love with the girl. In the interior of Brazil, Aline will have to fight two battles: the dispute for her lands and for her heart.

Django Models

Three Django models have been established to facilitate the application's functionality: the User model, Video model, and Watchlist model. Each model incorporates three or more fields, including relationships and constraints tailored to the application's needs. The SQLite database has been selected as the underlying storage solution in adherence to the specified requirements. This database structure ensures the effective organization and management of user information, video data, and watchlist entries within the application. The relationships and constraints within the models contribute to the overall coherence and reliability of the database schema.

Query data in database

The SQLite database file is included for data population, requiring no additional action on your part. Users can register themselves and become application users, with the ability to edit their details. Furthermore, users can add videos, and shows recommended through the Show Recommendation feature (retrieved from an external API) can be seamlessly incorporated into the watchlist model.

Persistent data storage ensures that user information, added videos, and watchlist content remain accessible even after a user logs out. To maintain data security and privacy, all actions, except for user registration, are protected. Users must be logged in to perform actions related to videos and the watchlist, enhancing the overall application experience by prioritizing user authentication and data integrity.

Third-party tools, libraries and frameworks used in the project

1) React.js
2) React Bootstrap
3) React Router
4) Django Rest Framework
5) Django CORS Headers
6) DB – SQLite
7) TMDB API