

## **Team 7**

### **Fitness Tracker**

### **Application**

#### **Team details:**

##### **Team Members:**

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#### **Project Story and its details:**

##### **Story of the project:**

We are going to build fitness tracker application, where we have sign up page, sign in page, Exercise selection, Timer functionality, Previous exercise tracker etc., where we can able to start exercises, pause them, cancel them and view past exercises, can watch you tube videos fetched related to exercises, can get more information from welcome screen etc. and also use a server behind the scenes to synchronize all that events across users.

We use firebase behind the scenes, a service where we can store and synchronize data in real time. Will use angular fire a package that enables working with real time data base, firebase database. Will also work on NGRX angular advanced state management system and use angular material for component designs.

##### **Who are the characters in the story?**

Our application helps for the people who are interested to reduce weight and stay fit by practicing exercises.

##### **What happens?**

Exercise is one of the most powerful tools we have for staying physically and mentally healthy. Social distancing, self-quarantining, and the closure of many gyms have made it harder to exercise. As many of our daily routines remain restricted during the coronavirus pandemic, it can be difficult to find the motivation to exercise. But this application tips can help keep you active and healthy during this

difficult time.

### When does the problem exist?

This problem exists from beginning but with the challenges of working from home and limited access to fitness facilities, people are finding it hard to stick to a workout routine at home.



### Where does the problems are happening?

Each corner in the world where maximum of human beings are facing problems in their fitness and finding ways to work with them.

**Why:** During pandemic, most of the people are restricted to home and lost their fitness. Suddenly people started doing exercises remotely. But there are no other fitness applications that give full guidance of exercises for free. Even some applications offer for free they provide only basic exercises but not complete guidance.

So, we are developing a fitness application which provides guidance from basic exercises to master level for free amount and easy access without facing any navigation issues, this mainly helps for the people who are not willing to pay but maintain their fitness.

**How:** By providing the ways to do different types of exercises as per user customizations, by providing beautiful features to track their exercise.

## Data and Details:

### Signup Data:

In this module we are collecting user details namely:

All the fields are designed using angular material forms and hints, errors are populated once user clicks on any field and moves out.

**Name:** This field asks to enter username

**Birthdate:** This field asks to enter user birth date we are displaying calendar where current date minus 18 years is given. So that people with 18 years plus can only sign up the application.

**Telephone Number:** A 10-digit telephone number needed to be entered in input box.

**Gender:** User can select gender from the dropdown

**Email:** User need to enter their email so it will verify whether it contains @ in the email or not and throws error if it is invalid and as well displays hint once user clicks on this field. This is required field.

**Password:** User need to enter 6 characters long password. If it doesn't contain the length, then throws an error. This is required field.

**Submit:** Until all required fields are filled in the form this button won't be enabled. Upon clicking submit it saves user email and password to firebase to check user authentication later.

### Login Data:

In this page user need to enter his email and password which has been created while doing sign up to the application. If user enters some wrong credentials, then popup will be displayed for some time with error message. Data from firebase is fetched and authenticated in the module.

### Exercise Data:

Once the user has login, he will be having two options in the application which are New Exercise and Past Exercises. Once the user has selected a new exercise, he will be having an option to select what kind of exercise he wants to do.

- 1) **New Exercise:** We have given 4 options (Crunches, Touch Toes, Side Lunges, Burpees). User can start the exercise by selecting it from dropdown. The exercises in the dropdown are fetched from firebase with associated details like duration of exercise, calories burned by doing the exercise etc.
- 2) **Past Exercise:** Once user clicks on this tab, they can able to see the past completed exercises with all complete details like on which date they done the exercise, calories, duration, status of exercise. All these data are fetched from firebase under his login id.

## Videos Data:

### Integrating YouTube data API in angular:

- Firstly, we need to enable YouTube Data API v3 in Google Cloud Platform
- Next select a project and create API key and use it in the project.
- Below are some of the modules used:
  1. HttpClientModule
  2. Ngx-spinner: used for displaying spinner while videos are being fetched from YouTube spinner will be displayed on screen.

How YouTube videos fetching API endpoint looks like:

HTTP request - GET <https://www.googleapis.com/youtube/v3/videos>

**Parameters:** chart (It identifies the chart we want to retrieve where it accepts content region and video category)

Id (It specifies the list of videos id for the given resource)

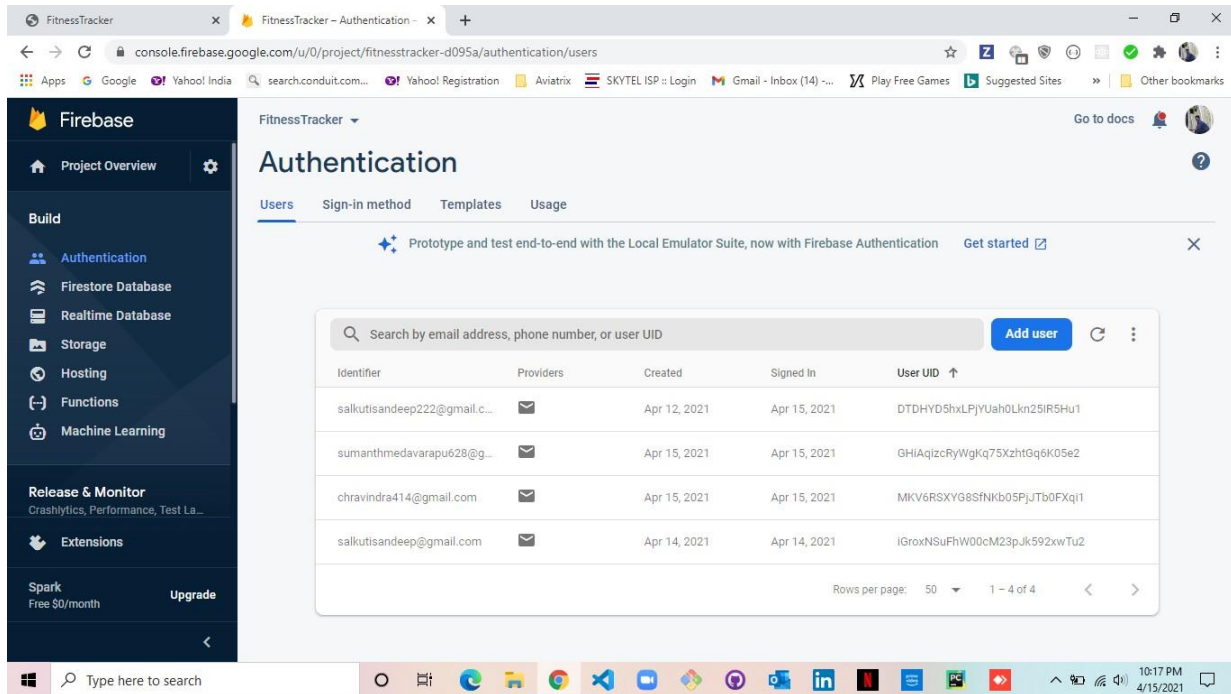
myRating (It return the video liked or disliked by user)

we have other optional parameters like region code, videoCategoryId, maxResults, part etc.

```
{
  "kind": "youtube#videoListResponse",
  "etag": "CCqIKdRU3jS4p8Qw75tzahunI0g",
  "items": [
    {
      "kind": "youtube#video",
      "etag": "3d3h90mkqtg9jzv2KbTg93CzxzI",
      "id": "0vVj9LfCjE",
      "contentDetails": {
        "duration": "PT1H9M38S",
        "dimension": "2d",
        "definition": "hd",
        "caption": "false",
        "licensedContent": false,
        "contentRating": {

        },
        "projection": "rectangular"
      },
    },
  ],
  "pageInfo": {
    "totalResults": 1,
    "resultsPerPage": 1
  }
}
```

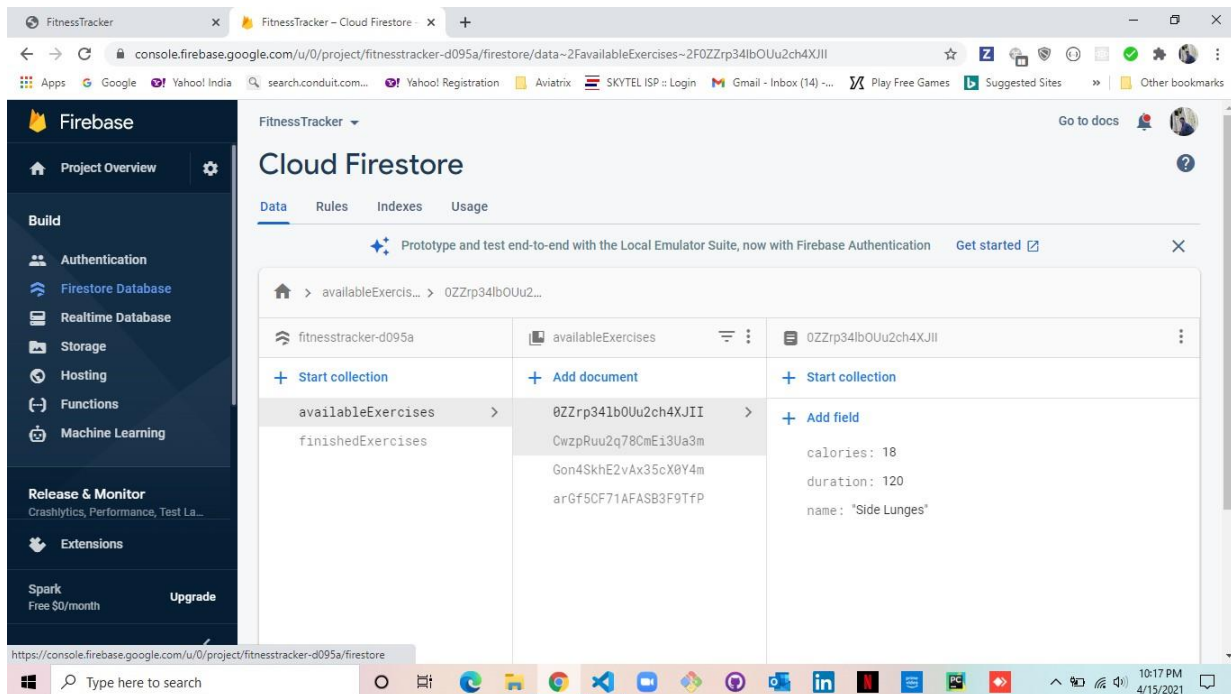
## Firebase data:



The screenshot shows the Firebase Authentication console for the project 'FitnessTracker'. The left sidebar contains the 'Build' section with options like Authentication, Firestore Database, Realtime Database, Storage, Hosting, Functions, and Machine Learning. The main area displays the 'Authentication' page with tabs for Users, Sign-in method, Templates, and Usage. A search bar at the top allows searching by email address, phone number, or user UID. Below the search bar is a table of users.

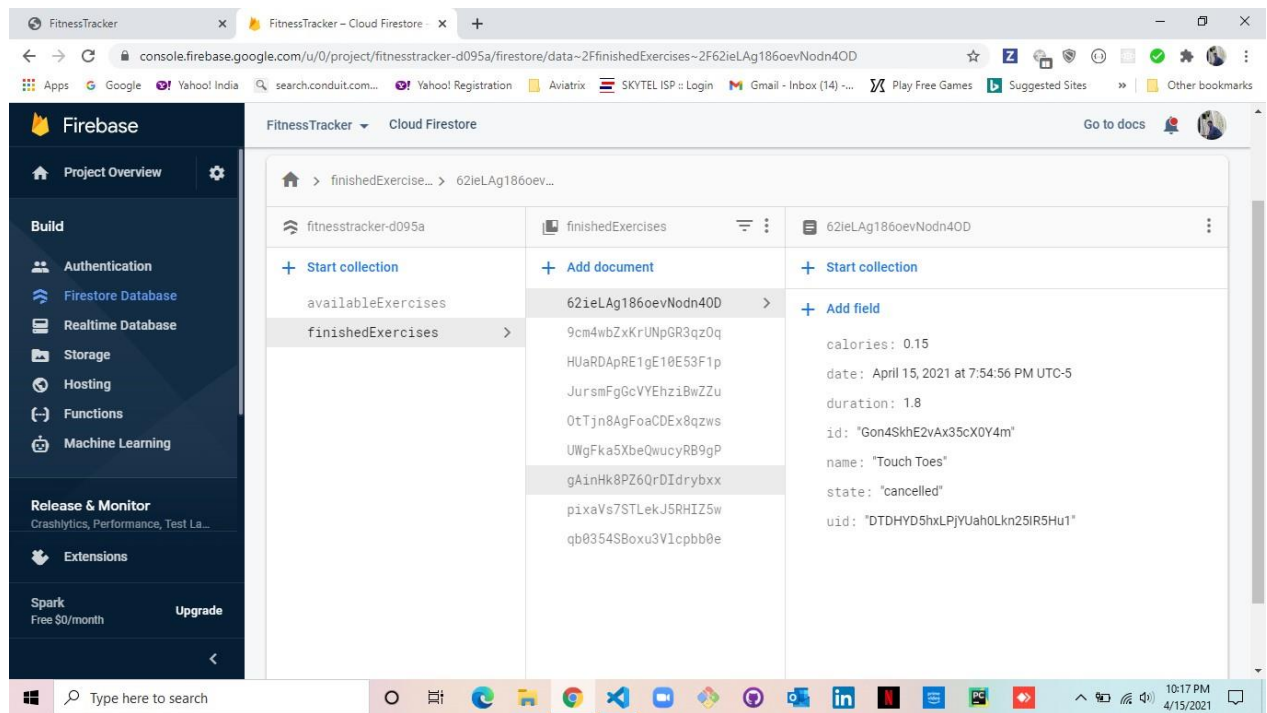
Identifier	Providers	Created	Signed In	User UID
salkutisandeep222@gmail.c...	📧	Apr 12, 2021	Apr 15, 2021	DTDHYD5hXLpYUah0Lkn25IR5Hu1
sumanthmedavarapu628@g...	📧	Apr 15, 2021	Apr 15, 2021	GHIaQizcRyWgKq75Xztq6K05e2
chravindra414@gmail.com	📧	Apr 15, 2021	Apr 15, 2021	MKV6RSXYG8SFNkb05PJtTb0FXq1
salkutisandeep@gmail.com	📧	Apr 14, 2021	Apr 14, 2021	iGroxNSuFhW00cM23pJk592xwTu2

At the bottom of the table, it shows 'Rows per page: 50' and '1 - 4 of 4'.



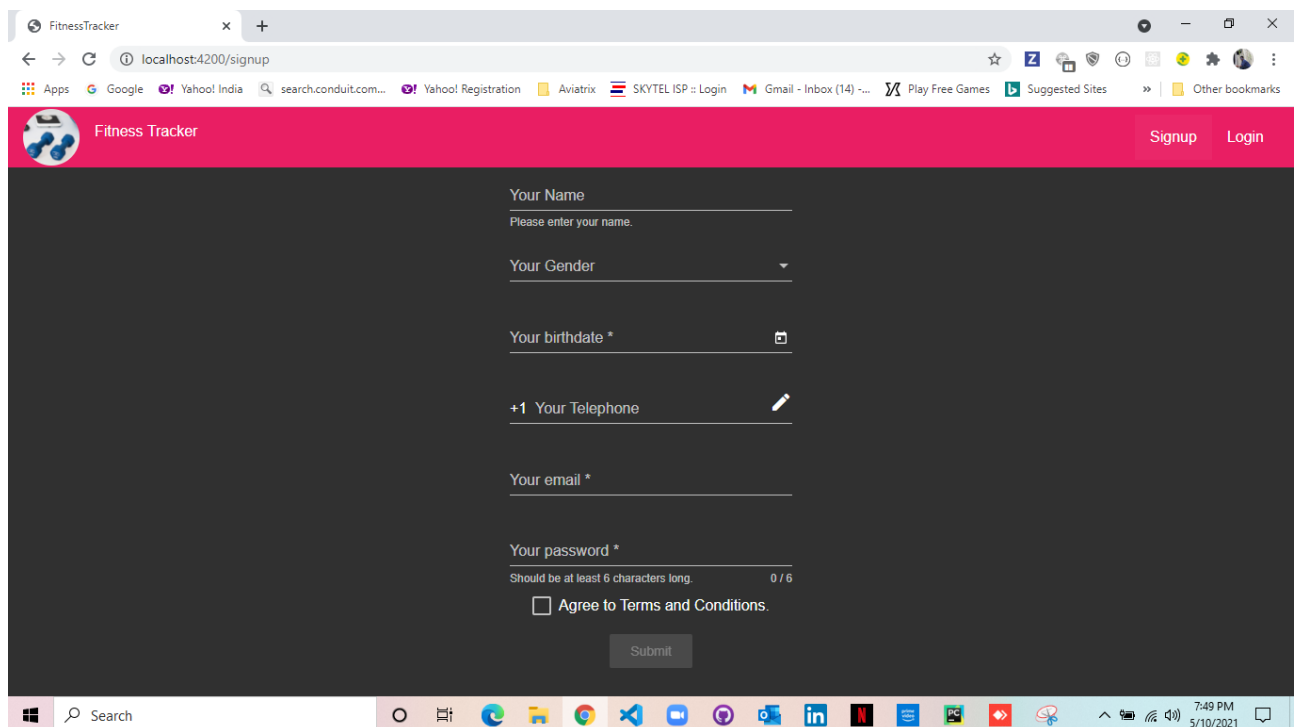
The screenshot shows the Firebase Cloud Firestore console for the project 'FitnessTracker'. The left sidebar is the same as the previous screenshot. The main area displays the 'Cloud Firestore' page with tabs for Data, Rules, Indexes, and Usage. A search bar at the top allows searching by document ID or path. Below the search bar is a tree view of the database structure. The 'availableExercises' collection is expanded, showing a list of documents. One document is selected, showing its fields: 'calories: 18', 'duration: 120', and 'name: "Side Lunges"'.

```
https://console.firebase.google.com/u/0/project/fitness-tracker-d095a/firestore
```



Working screens from project:

Signup Page for the Application



## Login Page for the Application

FitnessTracker

Signup Login

Your email  
Please enter a valid email.

Your password  
Please enter your password.

Submit

## Landing Page for the Application

Fitness Tracker

Training Videos Workouts SearchChannels ContactUs Logout

DO YOUR BEST AND FORGET THE REST

### About FITNESS TRACKER

To help you to build a stronger / leaner body, the aim of the fitness app is to make your lifestyle healthier by tracking your food intake, water intake, and workout pattern. Additionally, some apps even keep a track of your heart





FitnessTracker
localhost:4200
Apps Google Yahoo! India search.conduit.com... Yahoo! Registration Aviatix SKYTEL ISP :: Login Gmail - Inbox (14) -... Play Free Games Suggested Sites Other bookmarks

## About FITNESS TRACKER

To help you to build a stronger / leaner body, the aim of the fitness app is to make your lifestyle healthier by tracking your food intake, water intake, and workout pattern. Additionally, some apps even keep a track of your heart rate and blood pressure, which is beneficial for individuals with high blood pressure.

The fitness app is a very good workout app, exercise planner, and fitness tracker. It features a customizable workout schedule that works for most daily routines, there are a variety of exercises, stretches, and other activities. You can do anything as simple as a five minute stretch in your office or a full-blown workout session at home on your day off. Easy to Use Workout Trainer, Workout Timer, Exercise Database, Workout planner with pre-built routines. The app is very easy to use as it possesses very simple functionality navigation and can be managed by any general person. You change its appearance or features to suit your tastes or needs. The fitness app is a very good workout app, exercise planner, and fitness tracker. It features a customizable workout schedule that works for most daily routines, there are a variety of exercises, stretches, and other activities. You can keep a count of steps and track the distance you have walked. Such fitness apps help you meet your step count target by giving you all the information you need. Tracking your steps can improve your daily step count and work more towards achieving your target. Now you can simply monitor all your workout and health progress at just one click. Fitness apps enable you to fill in all your health details and updates. This helps you to track your health details at just one go. You can even compare your current blood parameters with your previous ones, which will give you an idea if your health has improved or not.

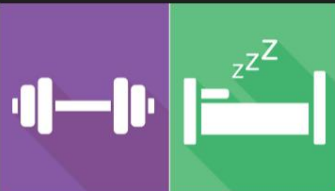



Search
7:34 PM 5/10/2021

FitnessTracker
localhost:4200
Apps Google Yahoo! India search.conduit.com... Yahoo! Registration Aviatix SKYTEL ISP :: Login Gmail - Inbox (14) -... Play Free Games Suggested Sites Other bookmarks

## App Features


### Purpose of Fitness App



The fitness app provides a dashboard, which contains the details about the total workouts, videos, frequency of workout, average workouts duration etc.

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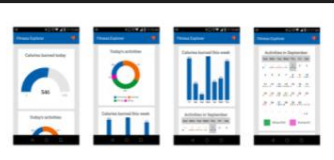
### Key Features



Easy to Use Workout videos, Workout Timer, Exercise Database, Workout planner with pre-built routines, fetching youtube channels and videos

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### Powerful Dashboard



The fitness app is a very good workout app, exercise planner, and fitness tracker. Workout schedule that works for most daily routines.

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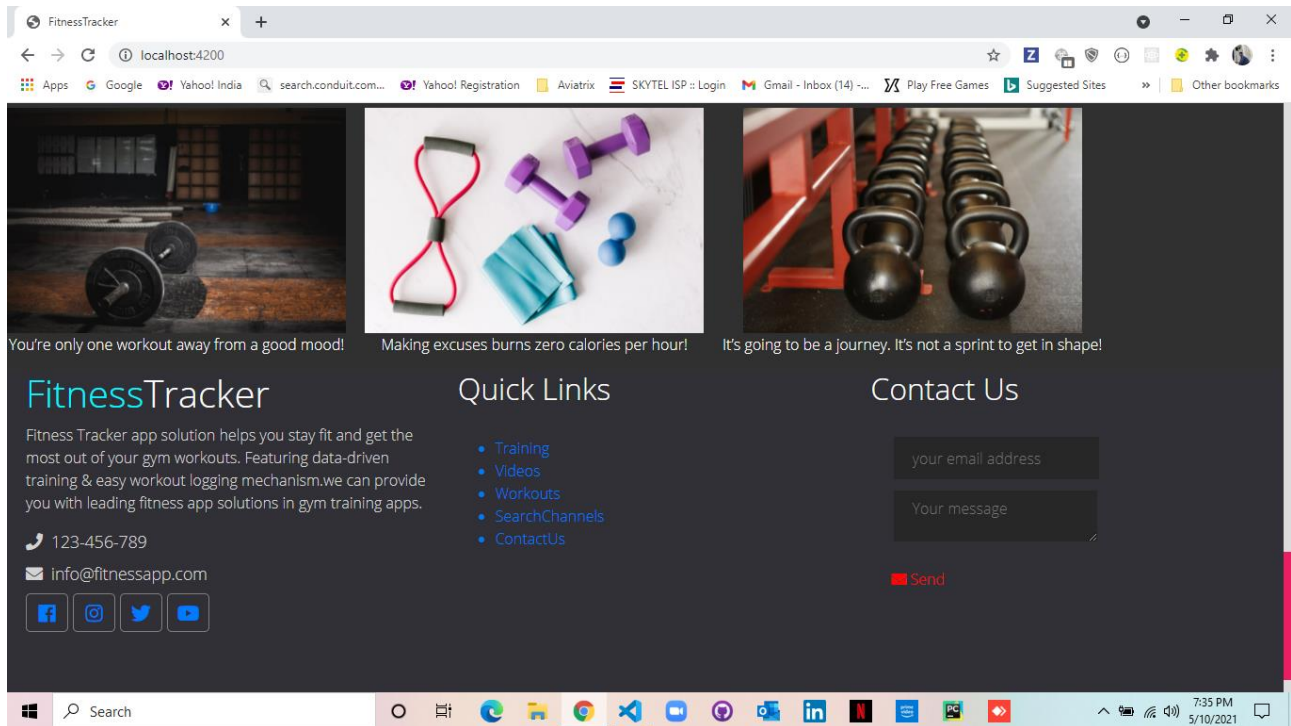
### Exercise Module

### Customizable Workouts

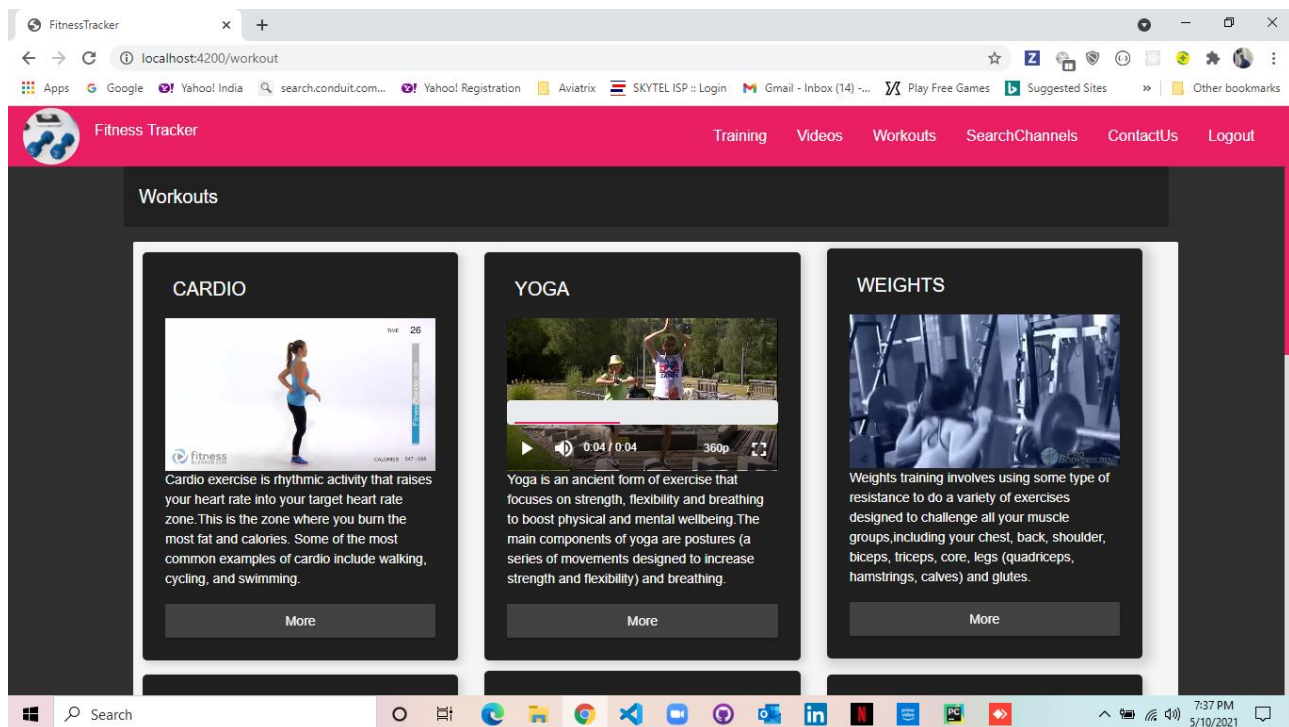
### Easy to use platform

Search
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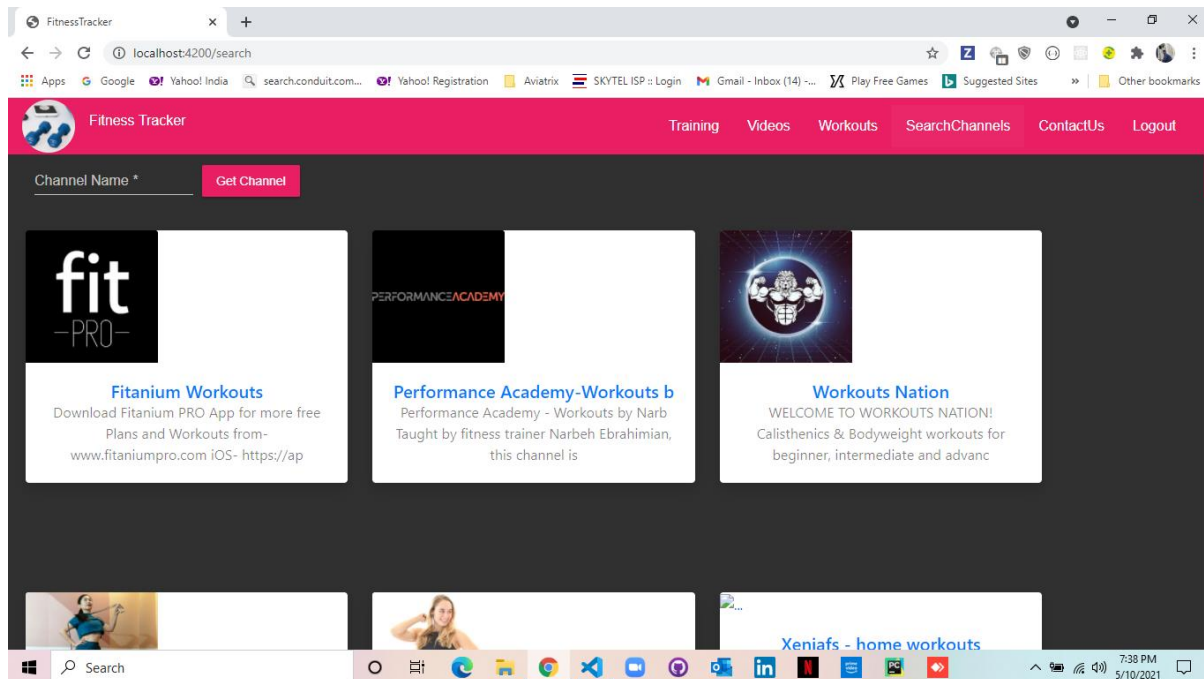




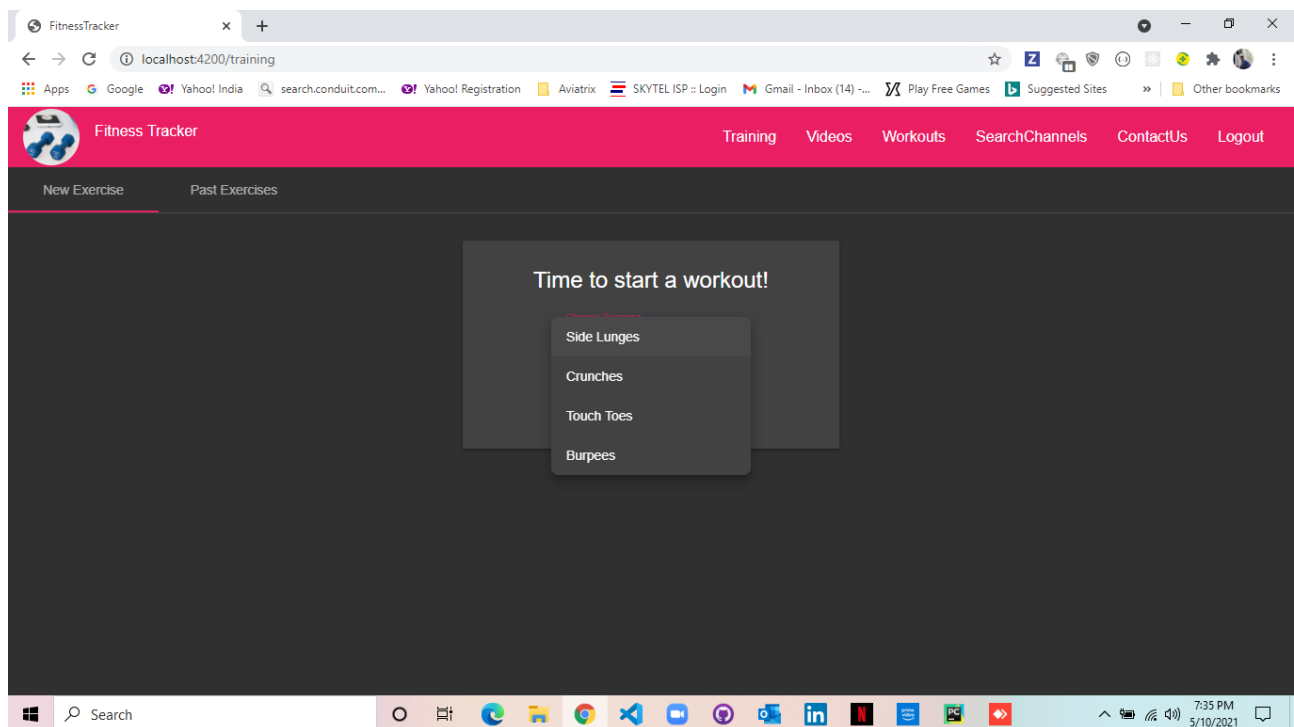
## Workouts Page for the Application



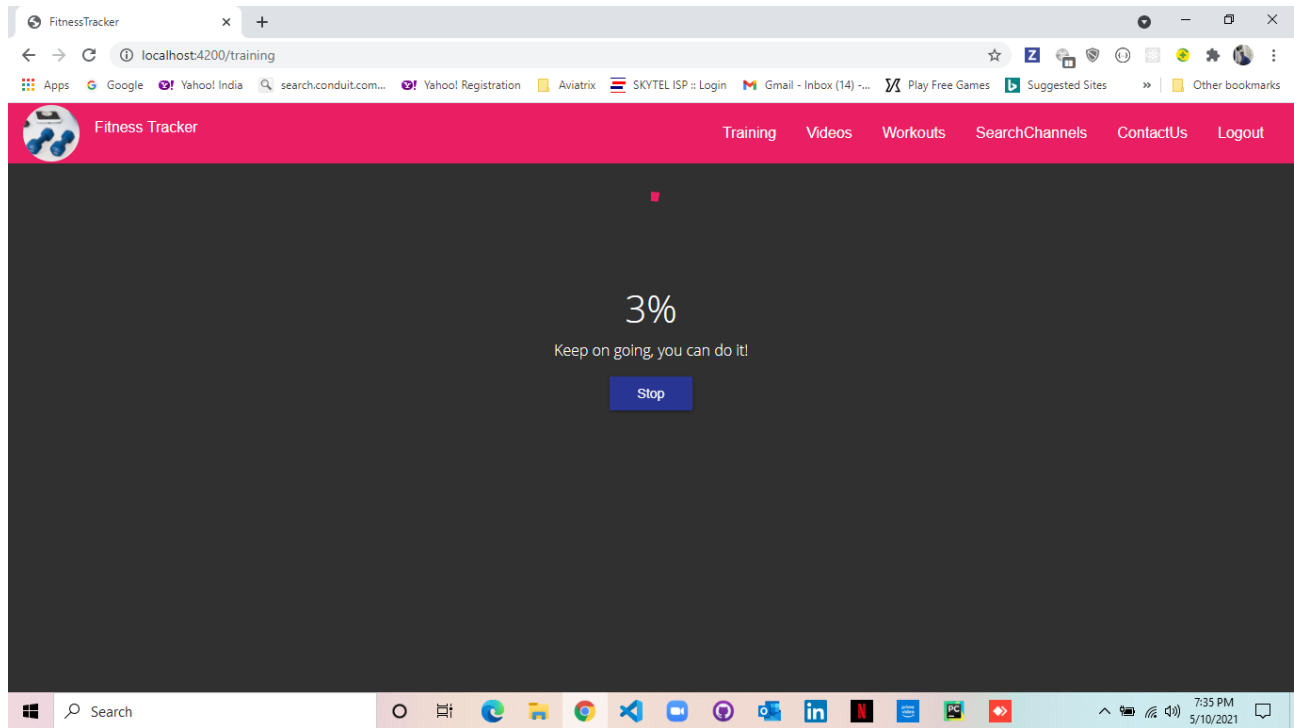
## Search Channel's Page for the Application



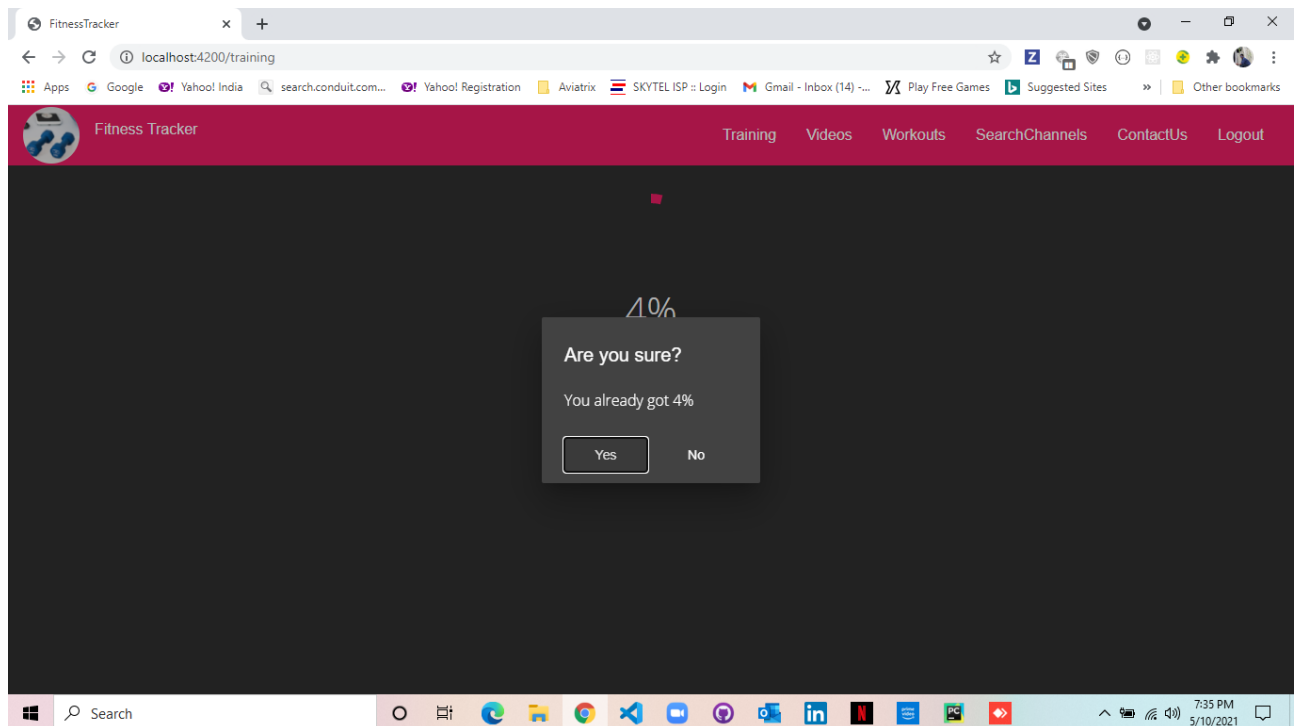
## Exercise Page in the Application:



## Calculating the progress of the exercise.



## Stopping the workout in the middle:



Here we can see the list of past exercises:

The screenshot shows a web browser window with the URL `localhost:4200/training`. The application has a pink header with the title "Fitness Tracker" and navigation links: Training, Videos, Workouts, SearchChannels, ContactUs, and Logout. Below the header, there are two tabs: "New Exercise" and "Past Exercises". The "Past Exercises" tab is active, showing a table of exercises. The table has columns for Date, Name, Duration, Calories, and State. The data is as follows:

Date	Name	Duration	Calories	State
May 10, 2021	Burpees	60	8	completed
May 10, 2021	Touch Toes	3.6	0.3	cancelled
May 10, 2021	Crunches	30	8	completed
May 10, 2021	Touch Toes	7.2	0.6	cancelled

At the bottom of the table, there is a pagination control showing "Items per page: 10" and "1 - 4 of 4".

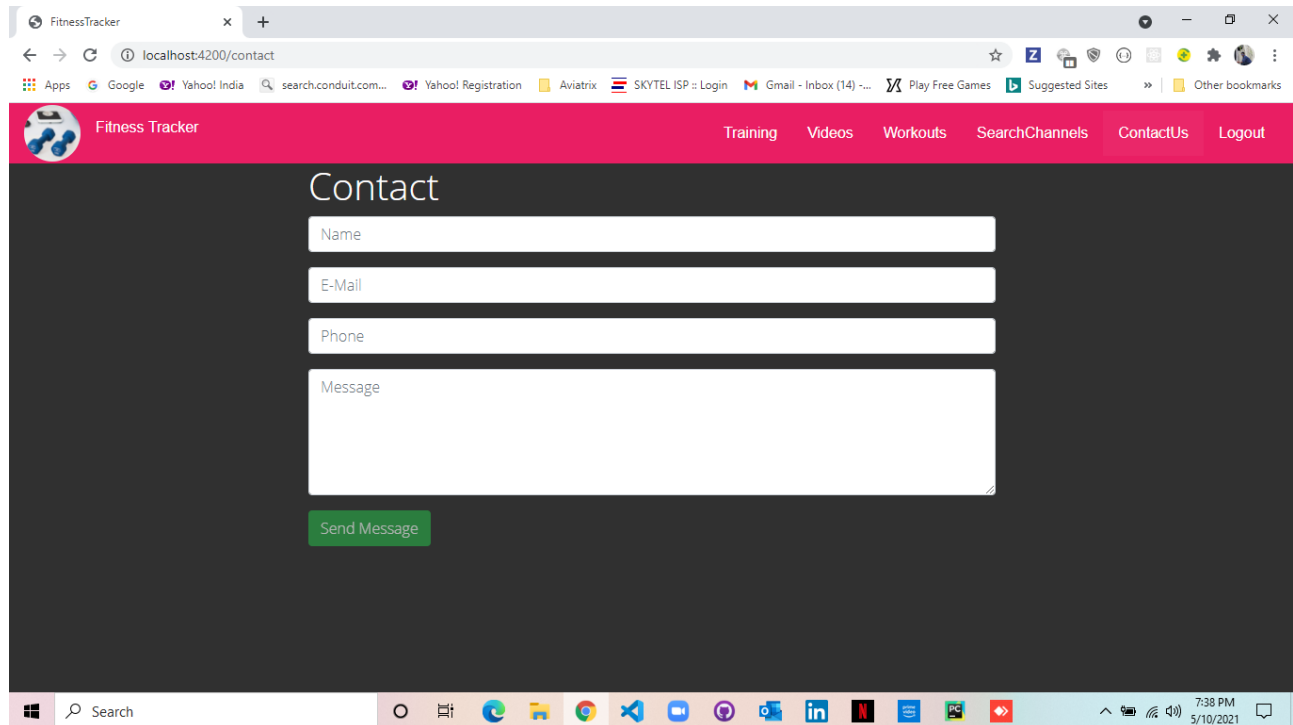
Here we can see the videos fetched from YouTube:

The screenshot shows the same web browser window, but now displaying a grid of YouTube videos. The header and navigation links are the same. Below the header, there is a green banner with the text "YOUTUBE VIDEOS". The grid contains four video thumbnails with titles and descriptions:

- Girls vs Boys Gymnastics | Fle**  
Boys vs girls, sister vs brother, to see who is the most flexible! Who will be victorious? Gymnastic
- Daniel Radcliffe Raps Blackal**  
Jimmy challenges hip-hop lover Daniel Radcliffe to rap Blackalicious' tongue-twisting "Alphabet Aero"
- Who is the best at gymnastics?**  
Which Ninja is the best at gymnastics Challenge! Bryton, Ashton, Paxton, and Payton compete to find
- LEARNING GYMNASTICS WITH OUR F**  
THUMBS UP IF YOU'RE IMPRESSED BY OUR SISTER WE POST EVERY TUESDAY, THURSDAY, & SUNDAY! NEW DOBRE BRO

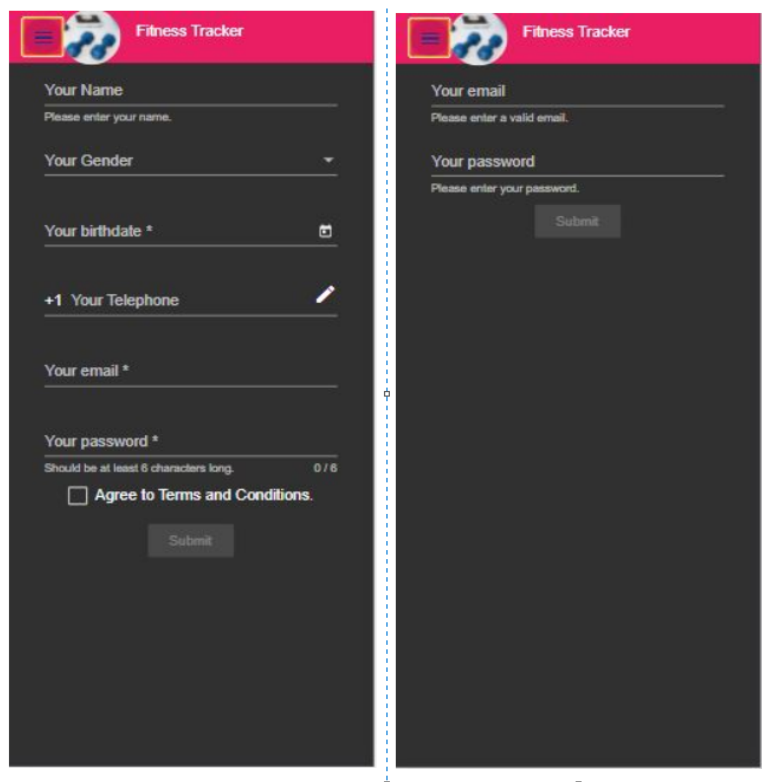
Below the grid, there are more video thumbnails, including "Fantastic Gymnastics!" and "GYMNASTICS".

Here is the contact information:

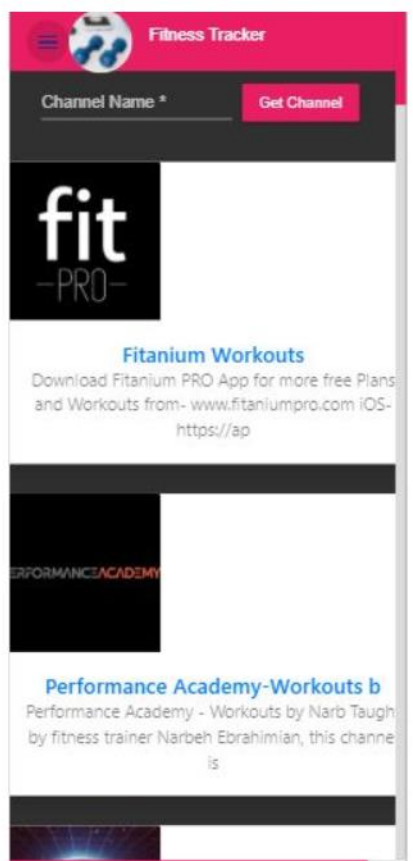
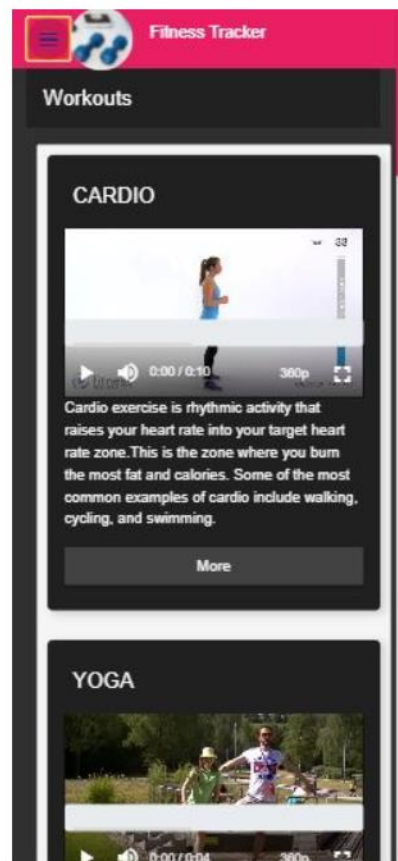
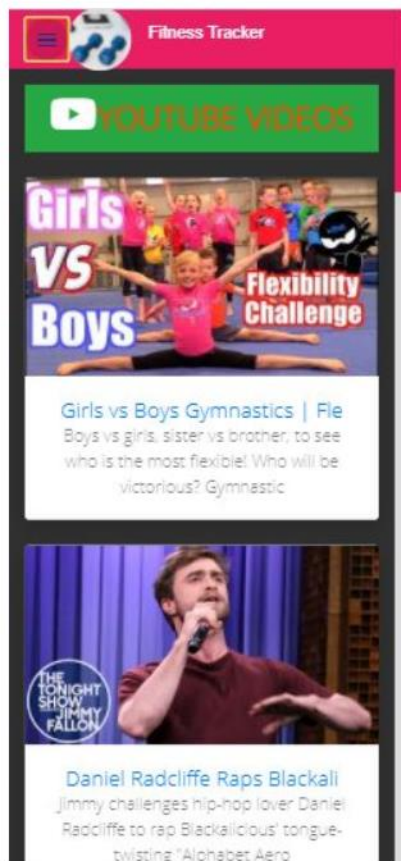
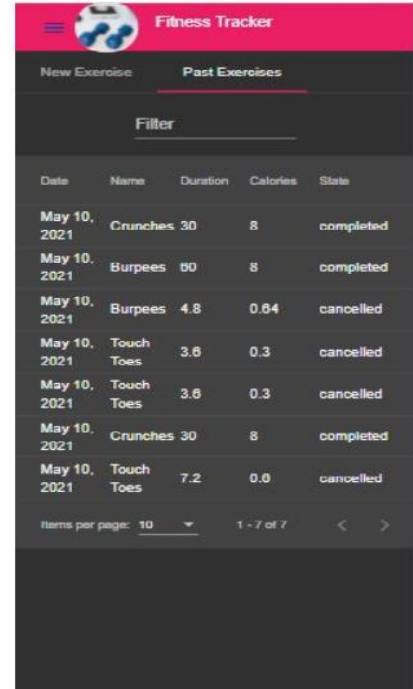
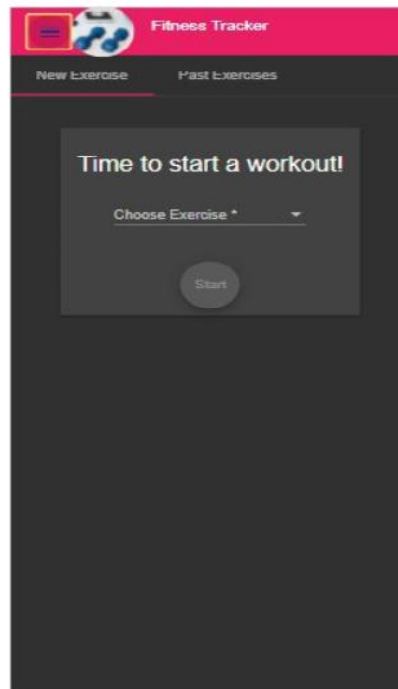
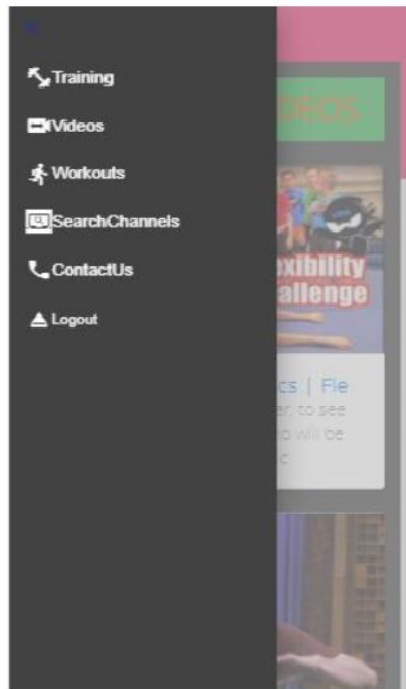


Responsive Mobile View of our application from developer tools:

Sign up and Login Page of the Application

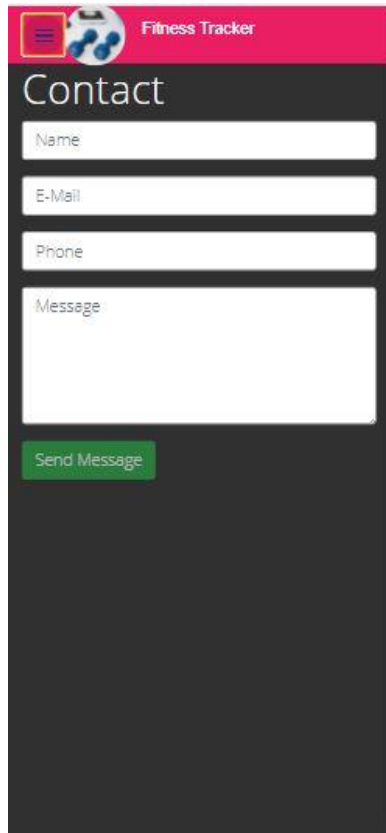


## Exercises pages in the Application:





Contact information of our Application:



The image shows a mobile application interface for 'Fitness Tracker'. At the top, there is a pink header bar containing a menu icon, a profile picture, and the app name 'Fitness Tracker'. Below the header, the title 'Contact' is displayed in a large, white font. The contact form consists of four white input fields stacked vertically: 'Name', 'E-Mail', 'Phone', and a larger 'Message' field. At the bottom of the form is a green button labeled 'Send Message'. The entire form is set against a dark grey background.

**Fitness Tracker**

## Contact

Name

E-Mail

Phone

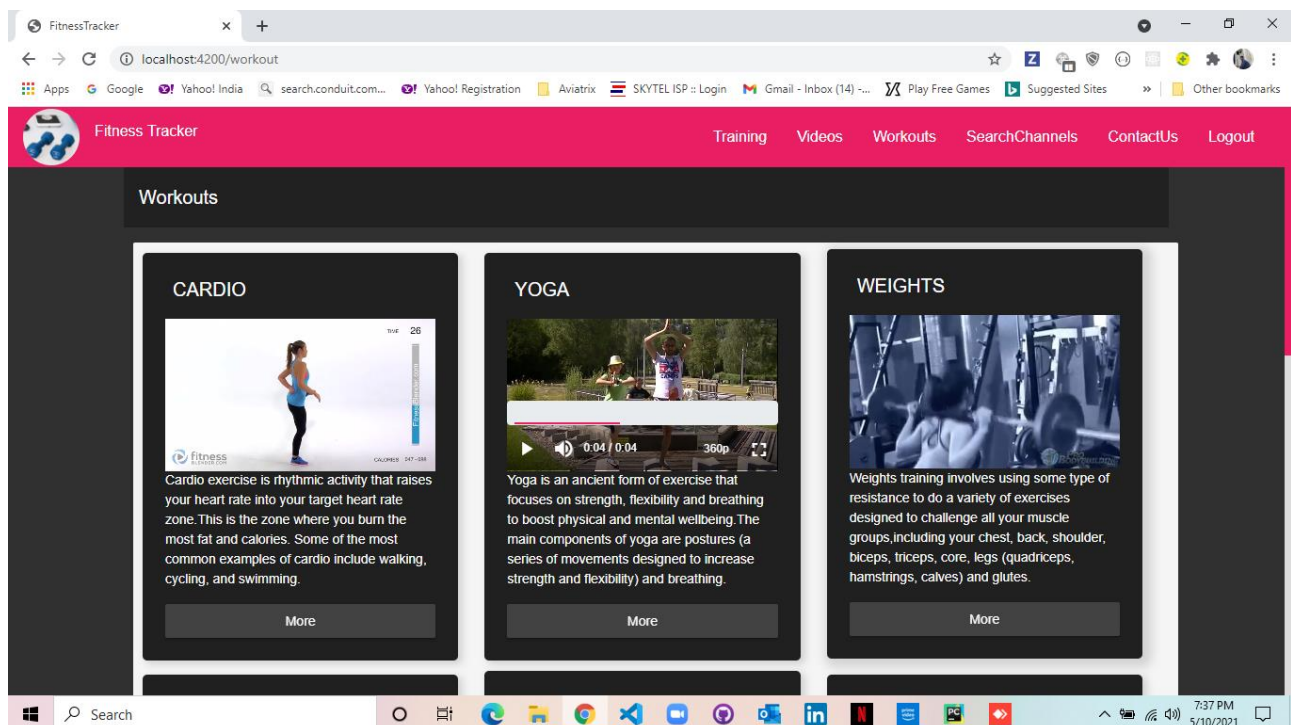
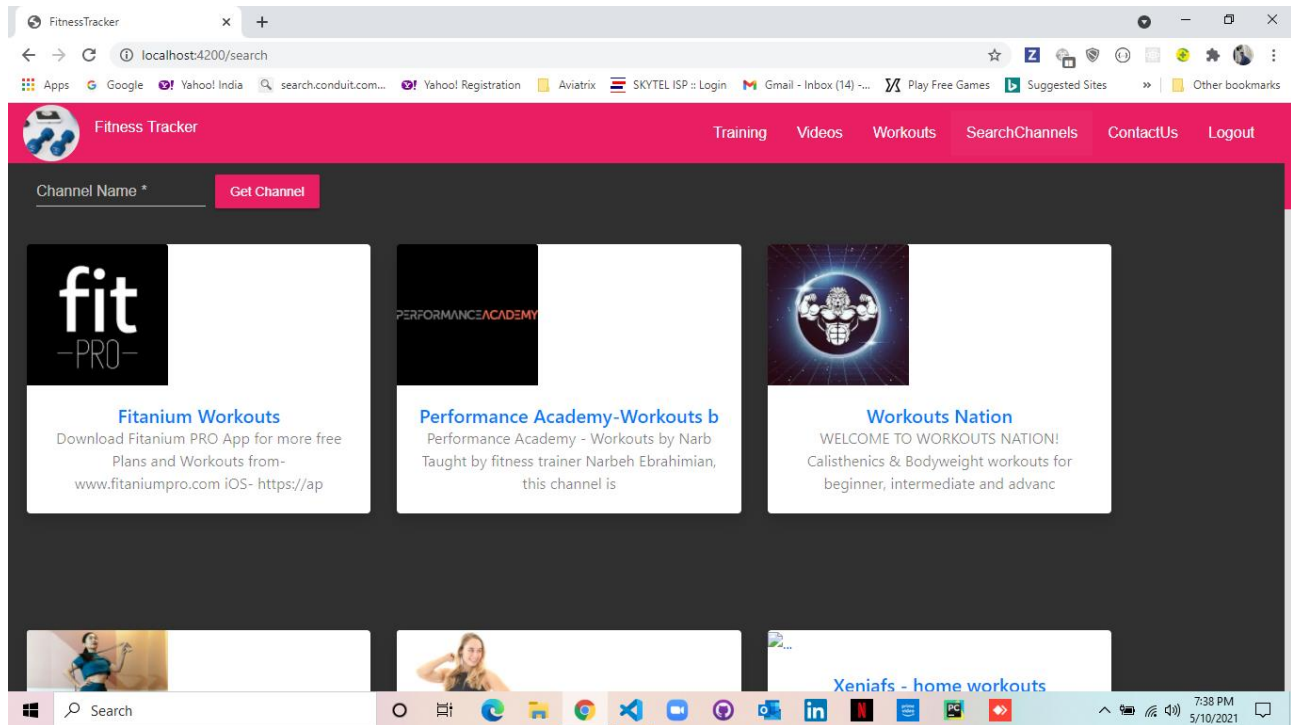
Message

Send Message

## Improvement from the previous increment:

Since increment 3, we have enhanced our user interface by adding more information on fitness tracker, Adding App features like Training, Videos, Workouts, Search Channels and Contact Us.

Below are the output screenshots that we did post last increment 3.



FitnessTracker



localhost:4200

AppsGoogleYahoo! Indiasearch.conduit.com...Yahoo! RegistrationAviatrixSKYTEL ISP :: LoginGmail - Inbox (14) ~...Play Free GamesSuggested SitesOther bookmarks


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Search



7:34 PM  
5/10/2021

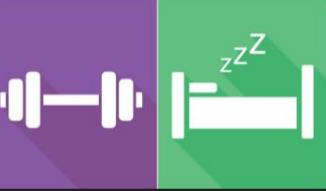
FitnessTracker

localhost:4200

AppsGoogleYahoo! Indiasearch.conduit.com...Yahoo! RegistrationAviatrixSKYTEL ISP :: LoginGmail - Inbox (14) ~...Play Free GamesSuggested SitesOther bookmarks

## App Features

### Purpose of Fitness App




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### Key Features

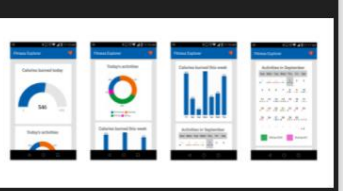


Easy to Use Workout videos, Workout Timer, Exercise Database, Workout planner with pre-built routines, fetching youtube channels and videos

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### Powerful Dashboard



The fitness app is a very good workout app, exercise planner, and fitness tracker. Workout schedule that works for most daily routines.

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### Exercise Module

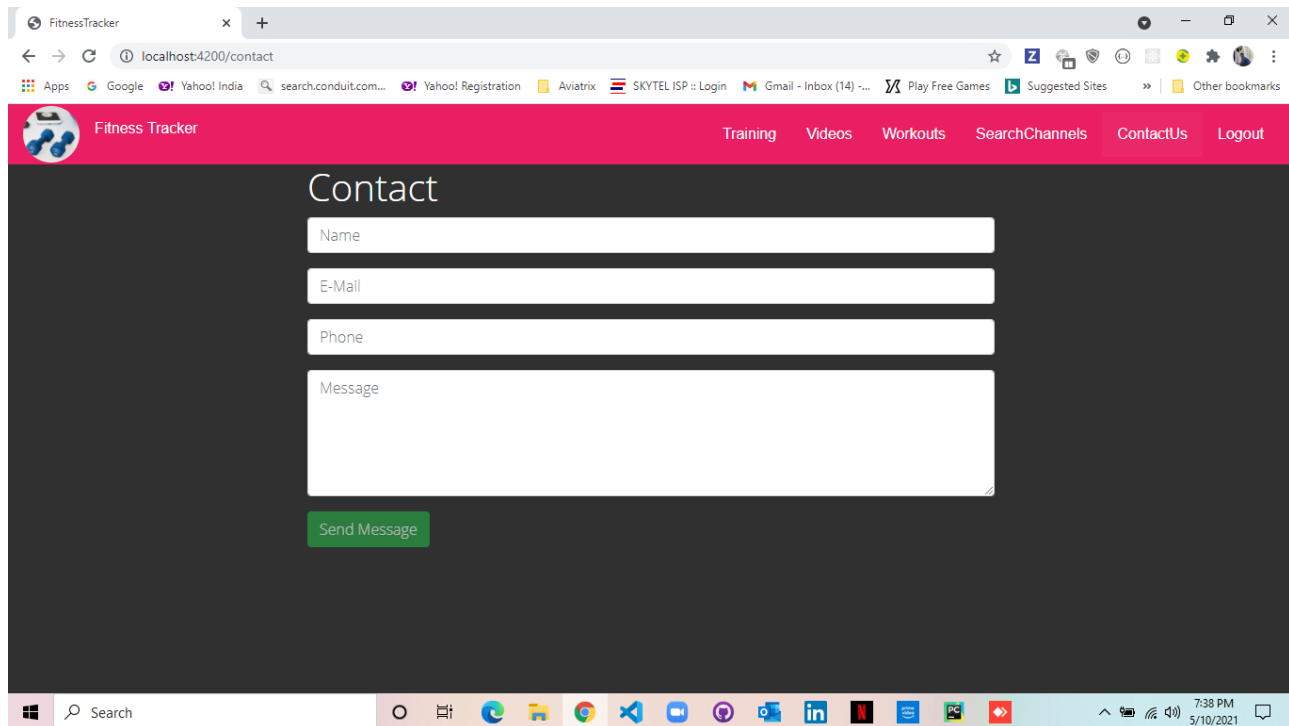
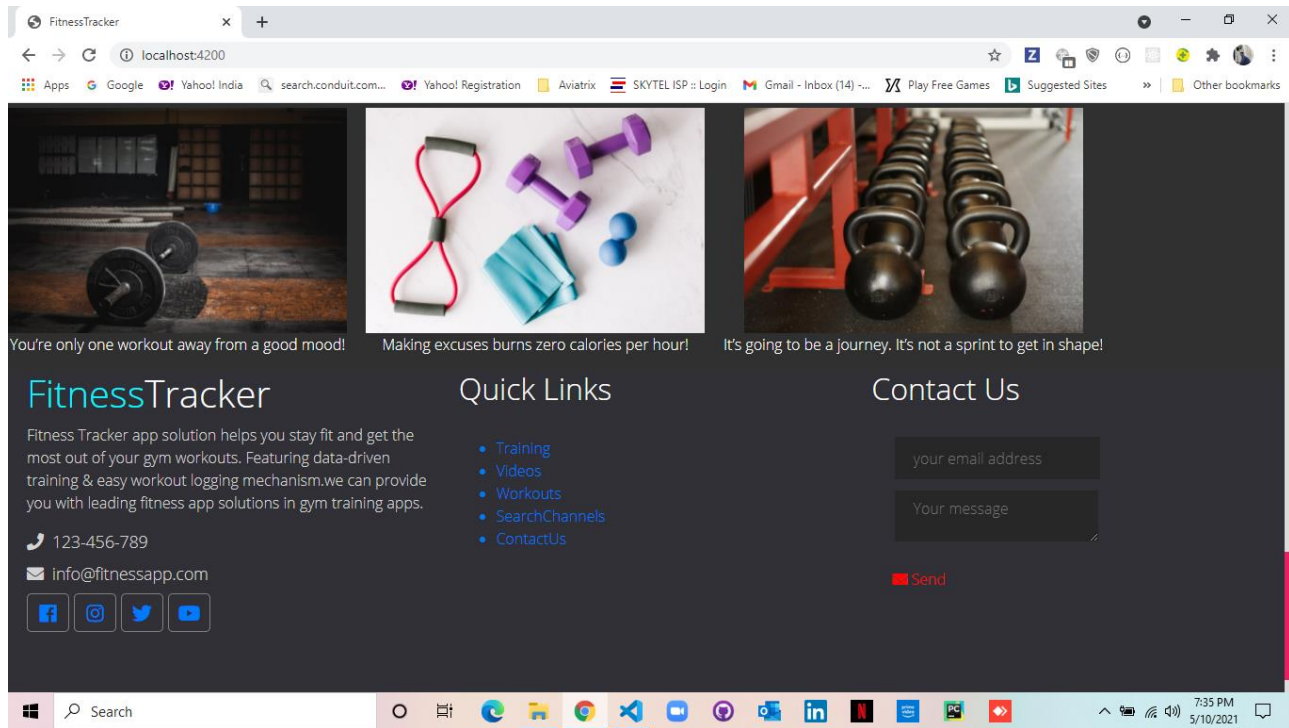
### Customizable Workouts

### Easy to use platform

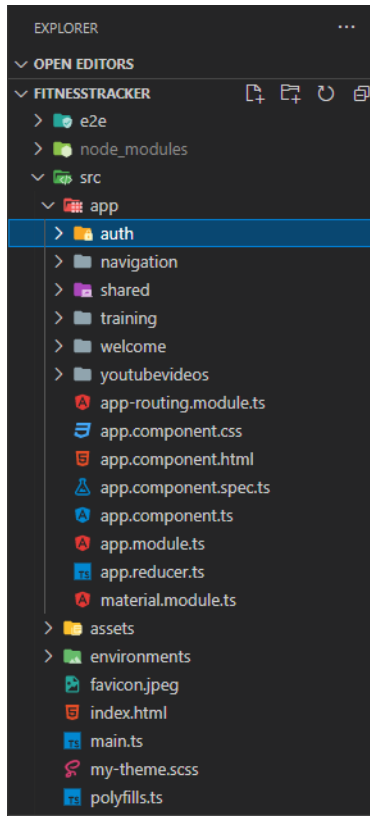
Search



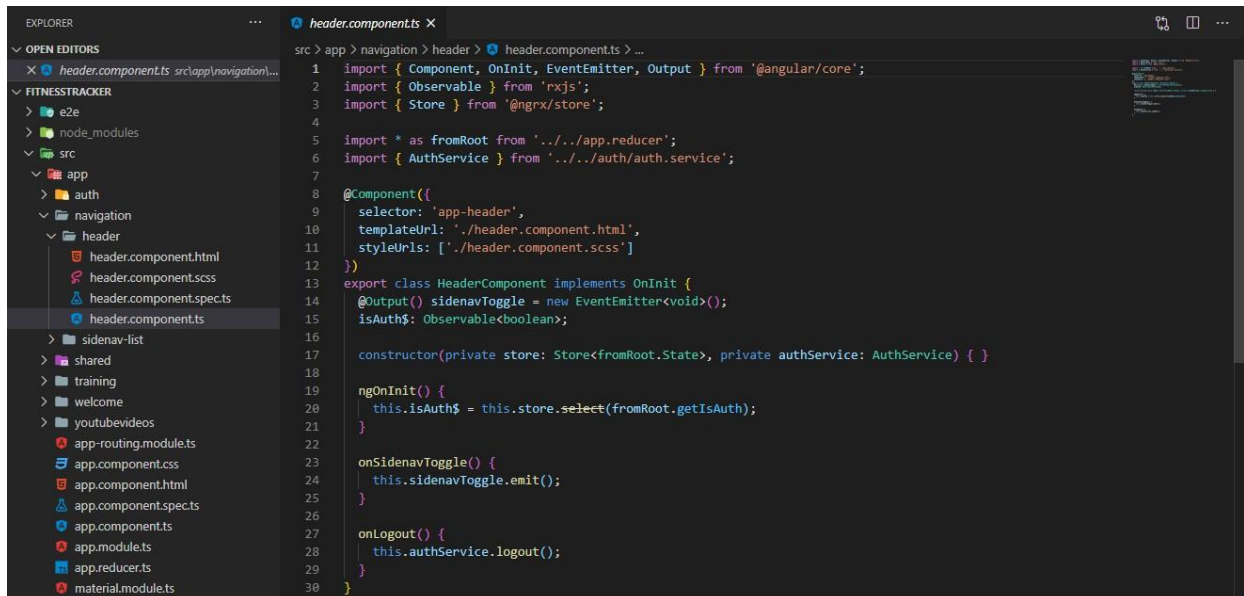
7:34 PM  
5/10/2021



## Important Code Snippets:

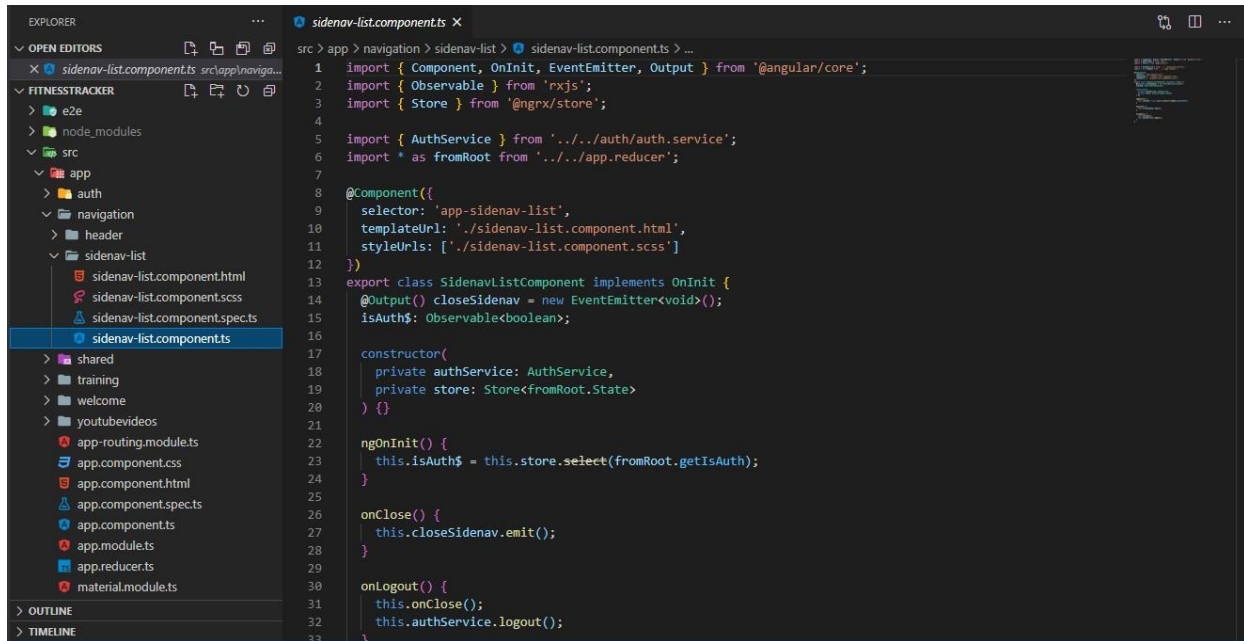


## Navigation Header





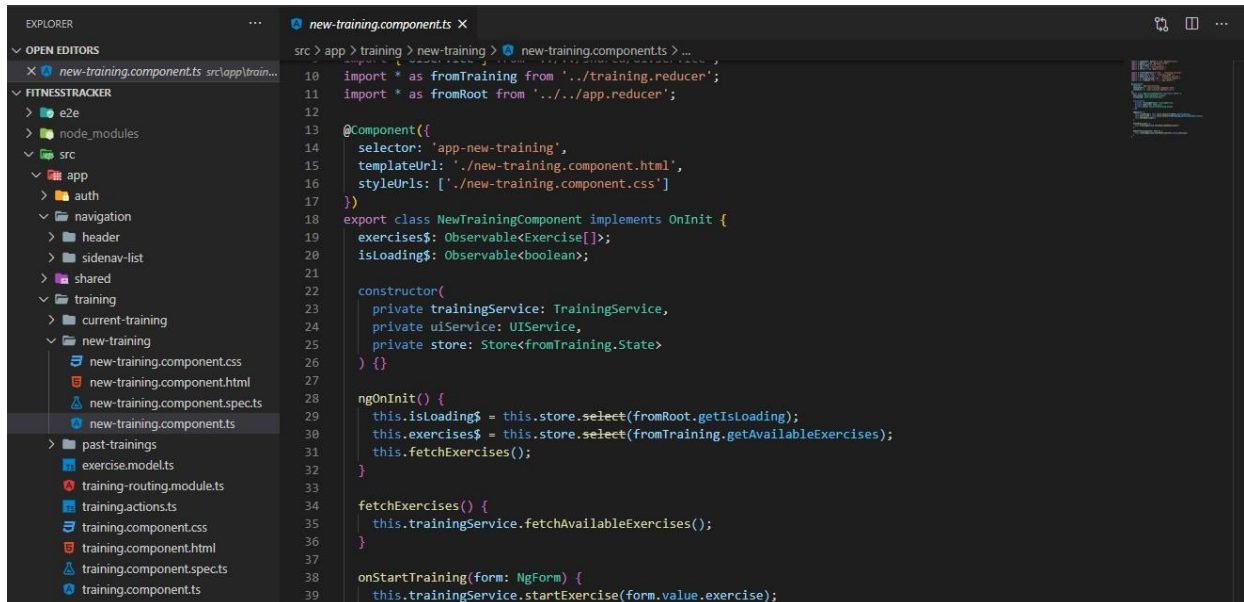
## Sidenav component



The screenshot shows the VS Code editor with the Explorer sidebar on the left and the Editor window on the right. The Explorer sidebar shows the project structure with the 'sidenav-list' folder selected. The Editor window displays the code for 'sidenav-list.component.ts'.

```
src > app > navigation > sidenav-list > sidenav-list.component.ts > ...
1 import { Component, OnInit, EventEmitter, Output } from '@angular/core';
2 import { Observable } from 'rxjs';
3 import { Store } from '@ngrx/store';
4
5 import { AuthService } from '../../auth/auth.service';
6 import * as fromRoot from '../../app.reducer';
7
8 @Component({
9   selector: 'app-sidenav-list',
10  templateUrl: './sidenav-list.component.html',
11  styleUrls: ['./sidenav-list.component.scss']
12 })
13 export class SidenavListComponent implements OnInit {
14   @Output() closeSidenav = new EventEmitter<void>();
15   isAuthenticated$: Observable<boolean>;
16
17   constructor(
18     private authService: AuthService,
19     private store: Store<fromRoot.State>
20   ) {}
21
22   ngOnInit() {
23     this.isAuthenticated$ = this.store.select(fromRoot.getIsAuth);
24   }
25
26   onClose() {
27     this.closeSidenav.emit();
28   }
29
30   onLogout() {
31     this.onClose();
32     this.authService.logout();
33   }
34 }
```

## New Training Component:

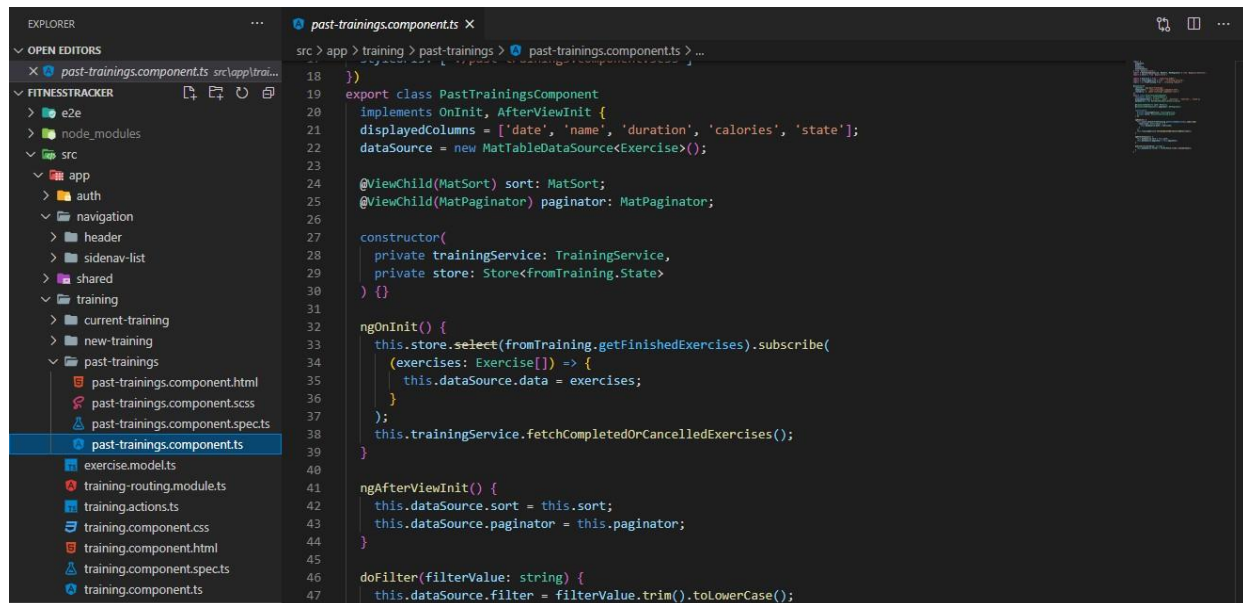


The screenshot shows the VS Code editor with the Explorer sidebar on the left and the Editor window on the right. The Explorer sidebar shows the project structure with the 'new-training' folder selected. The Editor window displays the code for 'new-training.component.ts'.

```
src > app > training > new-training > new-training.component.ts > ...
10 import * as fromTraining from '../training.reducer';
11 import * as fromRoot from '../../app.reducer';
12
13 @Component({
14   selector: 'app-new-training',
15   templateUrl: './new-training.component.html',
16   styleUrls: ['./new-training.component.css']
17 })
18 export class NewTrainingComponent implements OnInit {
19   exercises$: Observable<Exercise[]>;
20   isLoading$: Observable<boolean>;
21
22   constructor(
23     private trainingService: TrainingService,
24     private uiService: UIService,
25     private store: Store<fromTraining.State>
26   ) {}
27
28   ngOnInit() {
29     this.isLoading$ = this.store.select(fromRoot.getIsLoading);
30     this.exercises$ = this.store.select(fromTraining.getAvailableExercises);
31     this.fetchExercises();
32   }
33
34   fetchExercises() {
35     this.trainingService.fetchAvailableExercises();
36   }
37
38   onStartTraining(form: NgForm) {
39     this.trainingService.startExercise(form.value.exercise);
40   }
41 }
```

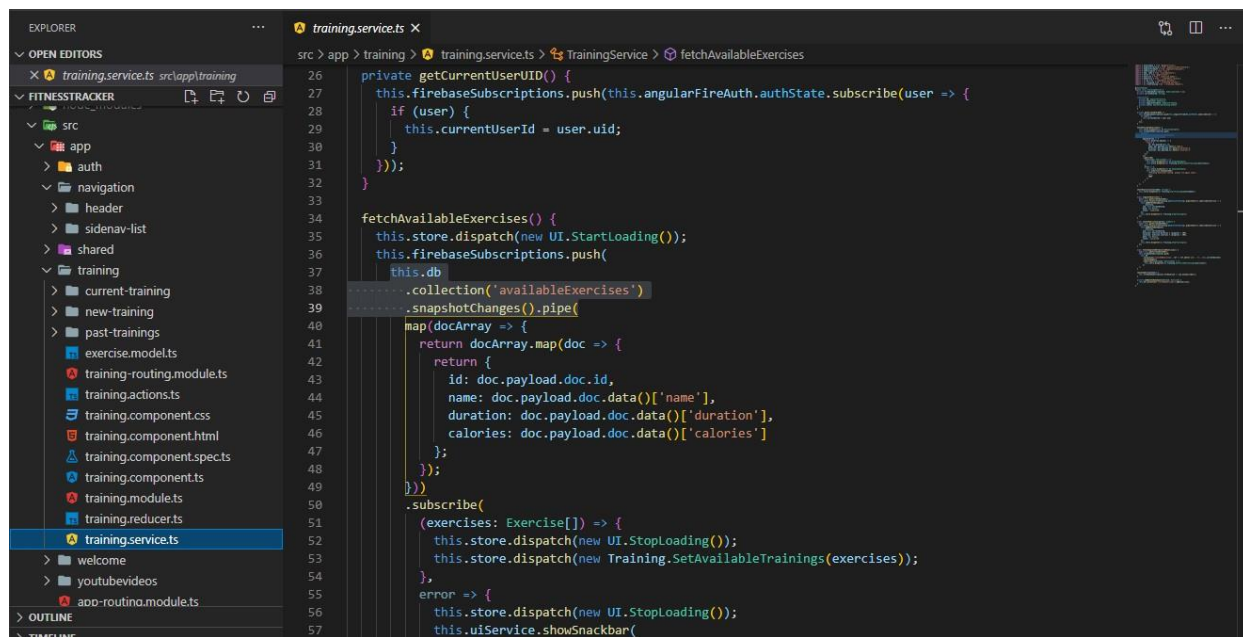


## Past Training Component:

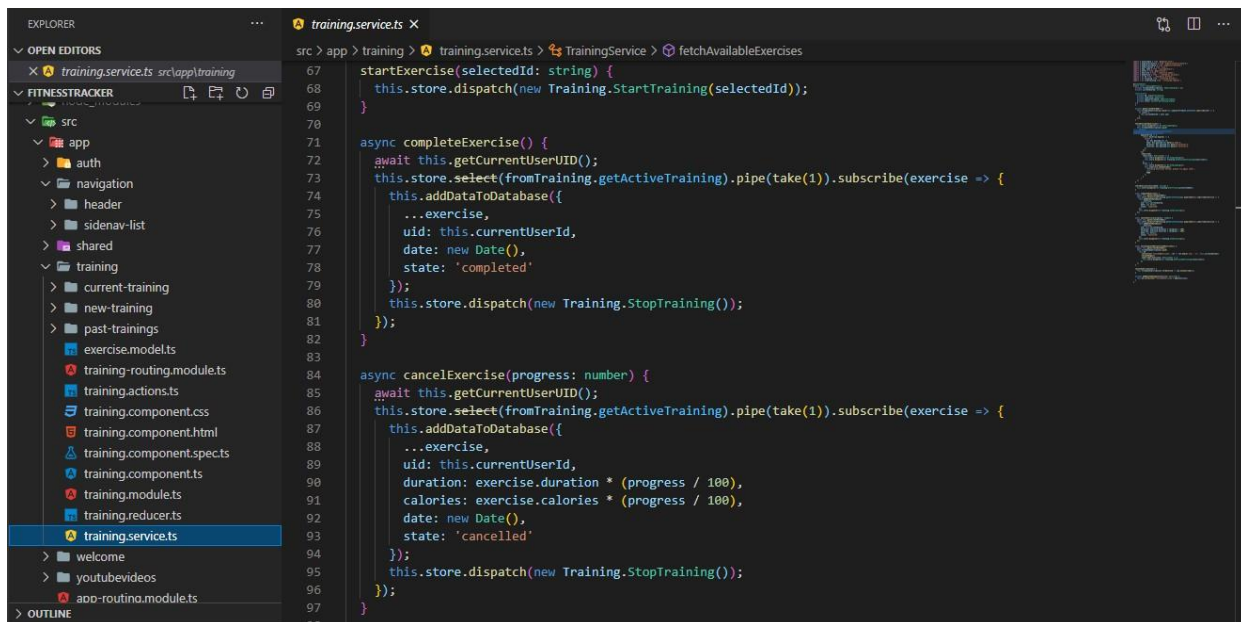


```
18  })
19  export class PastTrainingsComponent
20  implements OnInit, AfterViewInit {
21    displayedColumns = ['date', 'name', 'duration', 'calories', 'state'];
22    dataSource = new MatTableDataSource<Exercise>();
23
24    @ViewChild(MatSort) sort: MatSort;
25    @ViewChild(MatPaginator) paginator: MatPaginator;
26
27    constructor(
28      private trainingService: TrainingService,
29      private store: Store<fromTraining.State>
30    ) {}
31
32    ngOnInit() {
33      this.store.select(fromTraining.getFinishedExercises).subscribe(
34        (exercises: Exercise[]) => {
35          this.dataSource.data = exercises;
36        }
37      );
38      this.trainingService.fetchCompletedOrCancelledExercises();
39    }
40
41    ngAfterViewInit() {
42      this.dataSource.sort = this.sort;
43      this.dataSource.paginator = this.paginator;
44    }
45
46    doFilter(filterValue: string) {
47      this.dataSource.filter = filterValue.trim().toLowerCase();
48    }
49  }
```

## Training service model:



```
26  private getCurrentUserID() {
27    this.firebaseSubscriptions.push(this.angularFireAuth.authState.subscribe(user => {
28      if (user) {
29        this.currentUserId = user.uid;
30      }
31    }));
32  }
33
34  fetchAvailableExercises() {
35    this.store.dispatch(new UI.StartLoading());
36    this.firebaseSubscriptions.push(
37      this.db
38        .collection('availableExercises')
39        .snapshotChanges().pipe(
40          map(docArray => {
41            return docArray.map(doc => {
42              return {
43                id: doc.payload.doc.id,
44                name: doc.payload.doc.data()['name'],
45                duration: doc.payload.doc.data()['duration'],
46                calories: doc.payload.doc.data()['calories']
47              };
48            });
49          })
50        ).subscribe(
51          (exercises: Exercise[]) => {
52            this.store.dispatch(new UI.StopLoading());
53            this.store.dispatch(new Training.SetAvailableTrainings(exercises));
54          },
55          error => {
56            this.store.dispatch(new UI.StopLoading());
57            this.uiService.showSnackBar(
58              'Error fetching available exercises',
59              { duration: 3000 }
60            );
61          }
62        )
63    );
64  }
```



## YouTube Component:

- We are calling Youtube API in the below code by passing the key , Keyword and order is given as viewCount so that it gets the list based on highest views
- In the query, Keyword is passed to the API based on exercise chosen by user
- Max Results parameter is given to get number of videos

```
export class YoutubeService {

  apiKey : string = 'AIzaSyDlQGyzrnECYCf0ZNgtY903PSXGHSt5NS4';

  constructor(public http: HttpClient) {}

  getVideosForChanel(keyword, maxResults): Observable<Object> {
    let url = 'https://www.googleapis.com/youtube/v3/search?key=' + this.apiKey +
    '&q=' + keyword + '&order=viewCount&part=snippet &type=video,id&maxResults=' + m
    axResults
    return this.http.get(url)
      .pipe(map((res) => {
        return res;
      })))
  }
}
```

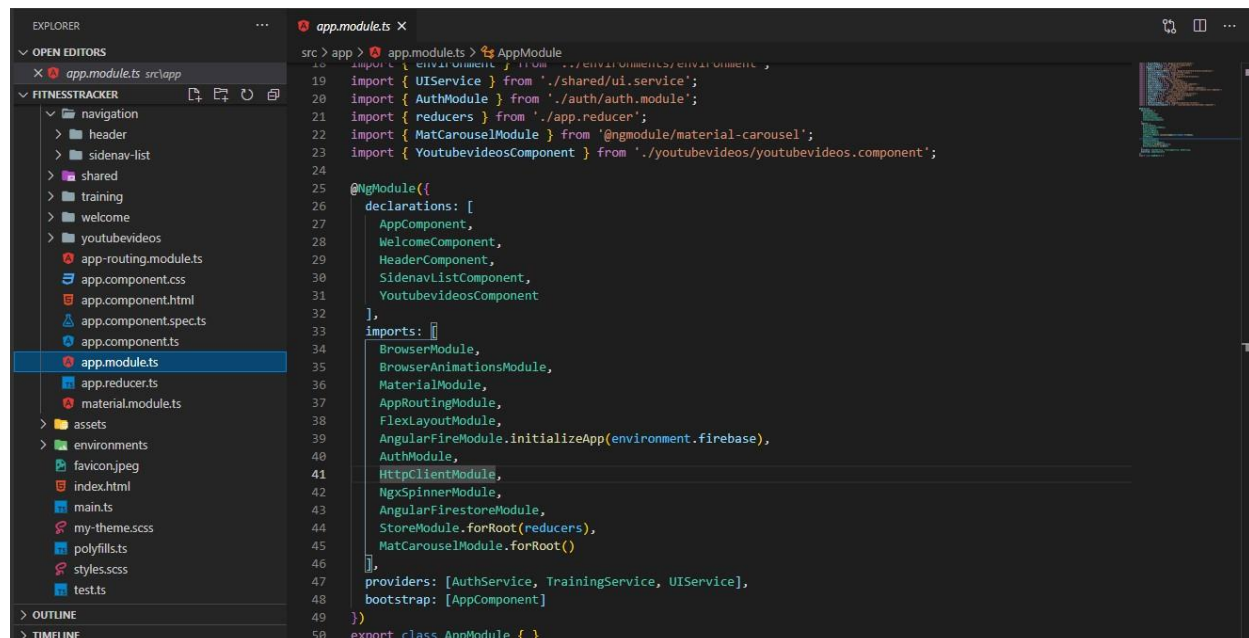
- Below code we can getting list of videos based on keyword given “aerobics|gymnastics” and saving the results in this.videos list

```

this.videos = [];
this.youtubeService
  .getVideosForChanel('aerobics|gymnastics', 10)
  .pipe(takeUntil(this.unsubscribe$))
  .subscribe(lista => {
    for (let element of lista["items"]) {
      this.videos.push(element)
      console.log(element)
    }
  });

```

## App. Module file:



## Work sharing/Module sharing between teammates:

**Harika Gurram:** Worked on Database connection, backend part and Signin/signup screens along with authentication. Involved in project planning, execution, Documentation.

**Sandeep Reddy Salkuti:** Worked on building UI components for different components like search channels, workouts etc. Involved in project planning and codebase maintenance

**Sumanth Medavarapu:** Worked on fetching videos by view count using youtube API and responsible for building youTube component. Involved in project planning, execution.

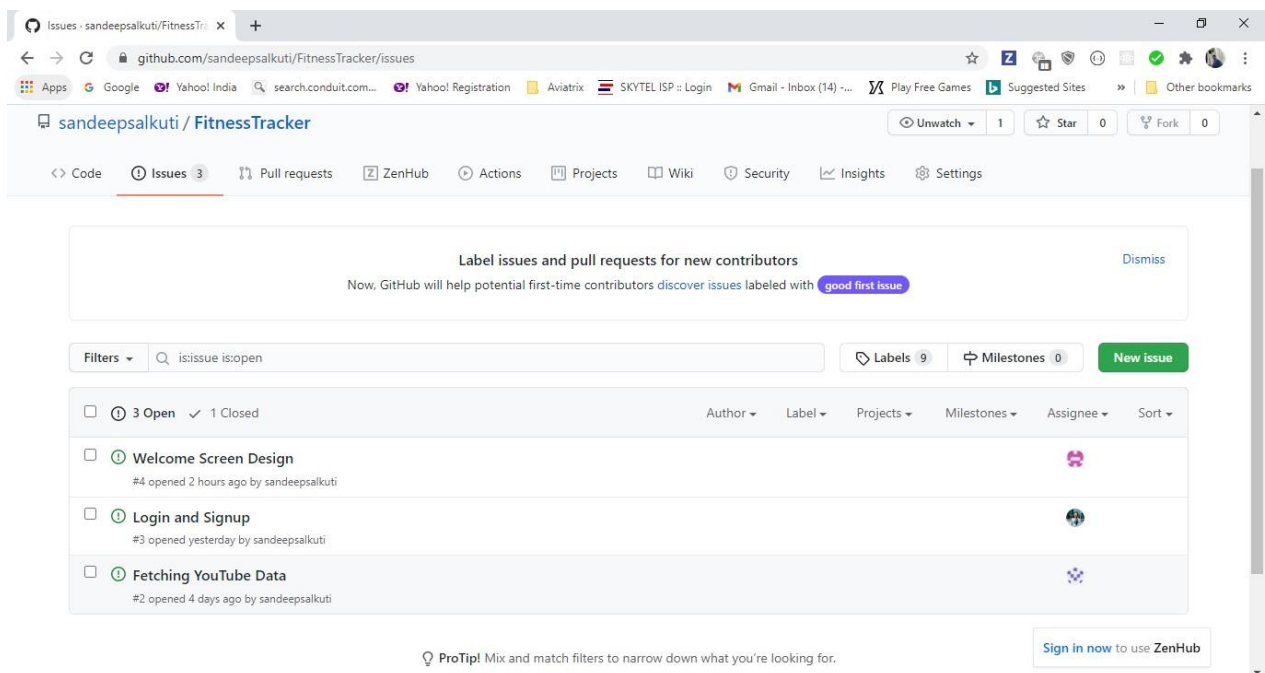
**Navya Yarlagadda:** Worked on welcome page, contact page and different UI components. Involved in project planning and project closure.

### Any issues, blockages with the project:

- In Signup component need to store all details in firebase instead of only email and password.
- In Videos component need to re-design UI categorizing different fitness topics and upon clicking them need to fetch them.
- In Welcome component need to design the page as per planned.
- Planning to add discussion or contact page further.

Above are the blockages in previous increment and now we are able to achieve all the tasks as planned.

Below is the image of issues assigning among ourselves:



**GitHub link for your project:**

<https://github.com/sandeepsalkuti/FitnessTracker>

**Video link for your project:** <https://youtu.be/3Do9C5fcu5c>

**Technologies Used:** Angular, ngx, firebase, Angular Material, Angular Fire, Firestore, Firebase hosting.

### **Advantages by using our application:**

- 1) They can maintain fitness by tracking their exercises done and to be done in upcoming time i.e. keeping track of all actions at a place.
- 2) They can learn more about each exercise by going through deck of cards available i.e. all information is available at one place.
- 3) FAQ section is available with general information and health related discussions.
- 4) Discussion form is available to discuss on issues everyone can interact each other by this feature.
- 5) Overall, this application is available or hosted online with easy access to everyone and at every corner of the world with simple navigation to go through application.

### **References:**

- <https://developers.google.com/youtube/v3/guides/implementation/videos>
- <https://fortune.com/2020/10/05/covid-fitness-gyms-health-trump/>
- <https://www.nuvancehealth.org/coronavirus/exercise-is-essential-for-well-being-during-covid-19-pandemic/>
- <https://developers-dot-devsite-v2-prod.appspot.com/youtube/v3/docs/search/list#type>
- <https://kheronn-machado.medium.com/youtube-angular-en-2ed98f07e0f9>