FitFlex: Your Personal Fitness Companion(React Application)

Introduction

Project Title: FitFlex - Your Personalized Fitness Journey

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Project Overview

Purpose:

FitFlex is a revolutionary fitness application designed to transform the user's workout experience. Our primary goal is to provide a user-friendly and comprehensive platform that empowers individuals of all fitness levels to achieve their wellness objectives. We aim to create a dynamic and engaging fitness community by offering a vast library of exercises, intuitive navigation, and a powerfull search functionality. FitFlex strives to be the go-to app for anyone seeking a personalized and effective fitness journey.

Features:

- Intuitive User Interface: FitFlex features a clean and user-friendly interface that allows for effortless navigation and a seamless workout experience.
- Dynamic Search Functionality: Users can easily discover specific exercises or workout routines through our powerful and dynamic search feature.
- Extensive Exercise Library: The app provides a vast and diverse library of exercises, catering to various fitness levels and preferences, including strength training, cardio, yoga, and more.
- Personalized Fitness Journey: FitFlex is designed to support a personalized fitness experience, allowing users to tailor their workouts to their individual goals and needs.
- Community Engagement: The app fosters a vibrant fitness community, encouraging collaboration, sharing, and motivation among users.

- Categorized Exercise Exploration: Users can easily browse and explore exercises through clearly defined categories.
- Access to Latest Fitness Trends: FitFlex provides access to the latest and most effective workouts from the fitness world.

Architecture

Component Structure:

The FitFlex frontend is built using React.js, prioritizing a user-centric approach. The UI, likely built with React Native (or React if it's a web app), ensures smooth and intuitive interactions.

- **Main App Component:** Serves as the root, managing overall layout and potentially global state.

- **API Client:** A custom-built client that communicates with the backend, leveraging Rapid API for integrating external fitness-related services.

- **Various UI Components:** React components responsible for rendering exercise lists, search bars, category filters, and user profiles.

These components interact through React's component hierarchy, passing data and event handlers as props. The API Client acts as an intermediary for data retrieval and updates from the backend and external APIs.

State Management:

The content provided doesn't explicitly mention a specific state management library. However, given the use of React, state management is likely handled using:

- **React's built-in useState and useContext hooks:** For local component state and sharing state across components.
- It is implied that some global state is managed, due to the api calls.

Routing:

The provided content doesn't explicitly state routing. If the app has multiple views, then react-router-dom is most likely being used.

- **React-router-dom (likely):** To manage navigation between different sections of the app, such as exercise lists, exercise details, and user profiles.

PRE-REQUISITES:

Here are the key prerequisites for developing a frontend application using

React.js: ✔ Node.js and npm:

Node.js is a powerful JavaScript runtime environment that allows you to run JavaScript code on the local environment. It provides a scalable and efficient platform for building network applications.

Install Node.js and npm on your development machine, as they are required to run JavaScript on the server-side.

- Download: https://nodejs.org/en/download/
- Installation instructions: https://nodejs.org/en/download/package-manager/

✔ **React.js**:

React.js is a popular JavaScript library for building user interfaces. It enables developers to create interactive and reusable UI components, making it easier to build dynamic and responsive web applications.

Install React.js, a JavaScript library for building user interfaces.

- **Create a new React app:**

```
npx create-react-app my-react-app
```

Replace my-react-app with your preferred project name.

- Navigate to the project directory:

```
cd my-react-app
```

- Running the React App:

With the React app created, you can now start the development server and see your React application in action.

- Start the development server:

```
npm start
```

This command launches the development server, and you can access your React app at http://localhost:3000 in your web browser.

✔ **HTML, CSS, and JavaScript**: Basic knowledge of HTML for creating the structure of your app, CSS for styling, and JavaScript for client-side interactivity is essential.

✔**Version Control**: Use Git for version control, enabling collaboration and tracking changes throughout the development process. Platforms like GitHub or Bitbucket can host your repository.

• Git: Download and installation instructions can be found at: https://git-scm.com/downloads

✔ **Development Environment**: Choose a code editor or Integrated Development Environment (IDE) that suits your preferences, such as Visual Studio Code, Sublime Text, or WebStorm.

• Visual Studio Code: Download from https://code.visualstudio.com/download

• Sublime Text: Download from https://www.sublimetext.com/download

• WebStorm: Download from https://www.jetbrains.com/webstorm/download

To get the Application project from drive:

Follow below steps:

✔ **Get the code:**

• Download the code from the drive link given below:

https://drive.google.com/drive/folders/14f9eBQ5W7VrLdPhP2W6PzOU_HCy8UMex?usp=sharing

Install Dependencies:

• Navigate into the cloned repository directory and install libraries:

```
cd fitness-app-react
npm install
```

✔ **Start the Development Server**:

• To start the development server, execute the following command:

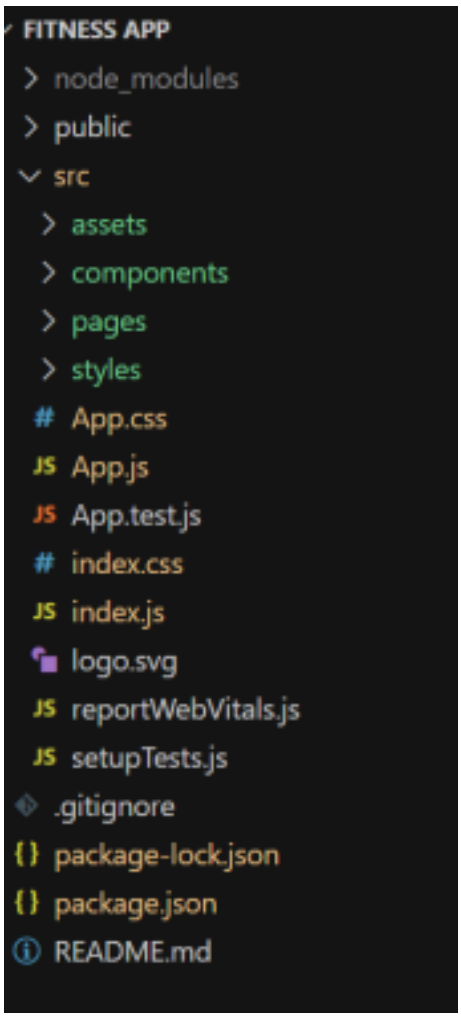
```
npm start
```

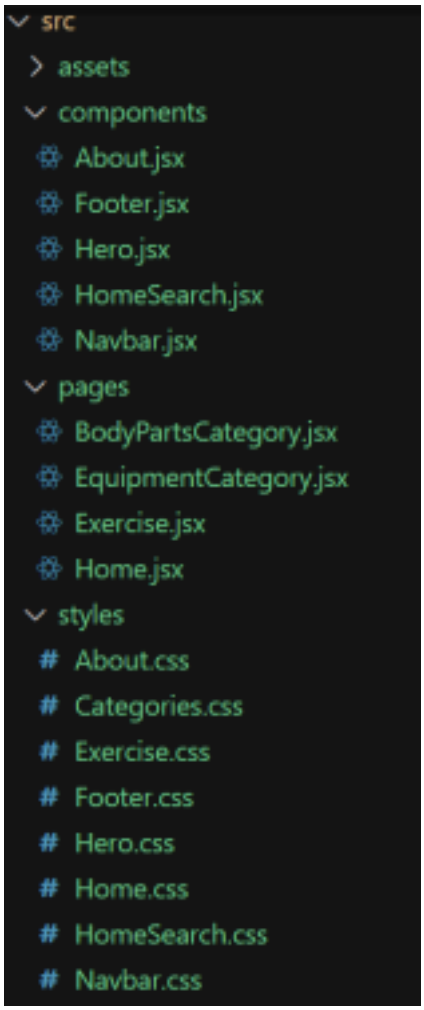
Access the App:

• Open your web browser and navigate to http://localhost:3000.

• You should see the application's homepage, indicating that the installation and setup were successful.

Project structure:





In this project, we've split the files into 3 major folders, *Components, Pages and Styles.* In the pages folder, we store the files that acts as pages at different URLs in the application. The components folder stores all the files, that returns the small components in the application. All the styling css files will be stored in the styles folder.

Project Flow:

Project demo:

Before starting to work on this project, let's see the demo

Demo link :

https://drive.google.com/file/d/1UdL6dwtVb0LxWaN2j1q0HWmyzo8uabda/view?usp=sharing

Use the code in: https://drive.google.com/drive/folders/14f9eBQ5W7VrLdPhP2W6PzOU_HCy8UMex?usp=sharing

Project setup and configuration.

- **Installation of required tools**:

To build the FitFlex app, we'll need a developer's toolkit. We'll leverage React.js for the interactive interface, React Router Dom for seamless navigation, and Axios to fetch fitness data. To style the app, we'll choose either Bootstrap or Tailwind CSS for pre-built components and a sleek look.

Open the project folder to install necessary tools. In this project, we use:

React Js
React Router Dom
React Icons
Bootstrap/tailwind css
Axios

- For further reference, use the following resources

https://react.dev/learn/installation
https://react-bootstrap-v4.netlify.app/getting-started/introduction/
https://reactrouter.com/en/main/start/tutorial

Project Development

❖ Setup the Routing paths

Setup the clear routing paths to access various files in the application.

- ❖ Develop the Navbar and Hero components
- ❖ Code the popular search/categories components and fetch the categories from ***rapid Api***.
- ❖ Additionally, we can add the component to subscribe for the newsletter and the footer.
- ❖ Now, develop the category page to display various exercises under the category.
- ❖ Finally, code the exercise page, where the instructions, other details along with related videos from the YouTube will be displayed.

Important Code snips:

Fetching available Equipment list & Body parts list

From the Rapid API hub, we fetch available equipment and list of body parts with an API request.

```
const bodyPartsOptions = {
  method: 'GET',
  url: 'https://exercisedb.p.rapidapi.com/exercises/bodyPartList',
  headers: {
    'X-RapidAPI-Key': 'place your api key',
    'X-RapidAPI-Host': 'exercisedb.p.rapidapi.com'
  }
};

const equipmentOptions = {
  method: 'GET',
  url: 'https://exercisedb.p.rapidapi.com/exercises/equipmentList',
  headers: {
    'X-RapidAPI-Key': 'place your api key',
    'X-RapidAPI-Host': 'exercisedb.p.rapidapi.com'
  }
};

useEffect(() => {
  fetchData();
}, [])

const fetchData = async () =>{
  try {
    const bodyPartsData = await axios.request(bodyPartsOptions);
    setBodyParts(bodyPartsData.data);

    const equipmentData = await axios.request(equipmentOptions);
    setEquipment(equipmentData.data);
  } catch (error) {
    console.error(error);
  }
}
```

Here's a breakdown of the code:

Dependencies:

The code utilizes the following libraries:

Axios: A popular promise-based HTTP client for JavaScript. You can add a link to the official documentation for Axios https://axios-http.com/

API Key:

Replace 'place your api key' with a placeholder mentioning that the user needs to replace it with their own RapidAPI key. You can mention how to acquire an API key from RapidAPI.

bodyPartsOptions and equipmentOptions:

These variables hold configuration options for fetching data from the RapidAPI exercise database.

● *method:* The HTTP method used in the request. In this case, it's set to GET as the code is fetching data from the

● *url:* The URL of the API endpoint to fetch data from. Here, it's set to https://exercisedb.p.rapidapi.com/exercises/bodyPartList for fetching a list of body parts and https://exercisedb.p.rapidapi.com/exercises/equipmentList for fetching a list of equipment.
● *headers:* This section contains headers required for making the API request. Here it includes the X-RapidAPI-Key header to provide your API key and the X-RapidAPI-Host header specifying the host of the API.

fetchData function:

This function is responsible for fetching data from the API. It makes use of async/await syntax to handle asynchronous operations. First it fetches data for body parts using axios.request(bodyPartsOptions). Then it stores the fetched data in the bodyParts state variable using setBodyParts.

Similarly, it fetches data for equipment using axios.request(equipmentOptions). Then it stores the fetched data in the equipment state variable using setEquipment. In case of any errors during the API request, the catch block logs the error to the console using console.error.

useEffect Hook:

The useEffect hook is used to call the fetchData function whenever the component mounts. This ensures that the data is fetched as soon as the component loads.

Overall, the code snippet demonstrates how to fetch data from a RapidAPI exercise database using JavaScript's Axios library.

Fetching exercises under particular category

To fetch the exercises under a particular category, we use the below code.

```
const fetchData = async (id) => {
    const options = {
        method: 'GET',
        url: `https://exercisedb.p.rapidapi.com/exercises/equipment/${id}`,
        params: {limit: '50'},
        headers: {
          'X-RapidAPI-Key': 'your api key',
          'X-RapidAPI-Host': 'exercisedb.p.rapidapi.com'
        }
    };

    try {
        const response = await axios.request(options);
        console.log(response.data);
        setExercises(response.data);
    } catch (error) {
        console.error(error);
    }

}
```

It defines a function called fetchData that fetches data from an exercise database API. Here's a breakdown of the code:

const options = {...}:

This line creates a constant variable named options and assigns it an object literal. The object literal contains properties that configure the API request, including:

● method: Set to 'GET', indicating that the API request is a GET request to retrieve data from the server.
● url: Set to https://exercisedb.p.rapidapi.com/exercises/equipment/${id}, which is the URL of the API endpoint for fetching exercise equipment data. The ${id} placeholder will likely be replaced with a specific equipment ID when the function is called.
● params: An object literal with a property limit: '50'. This specifies that you want to retrieve a maximum of 50 exercise equipment results. ● headers: An object literal containing two headers required for making the API request:
● 'X-RapidAPI-Key': Your RapidAPI key, which is used for authentication. You should replace 'your api key' with a placeholder instructing users to replace it with their own API key.
● 'X-RapidAPI-Host': The host of the API, which is 'exercisedb.p.rapidapi.com' in this case.

const fetchData = async (id) => {...}:
This line defines an asynchronous function named fetchData that takes an id parameter. This id parameter is likely used to specify the equipment ID for which data needs to be fetched from the API.

try...catch block:

● The try...catch block is used to handle the API request.

● The try block contains the code that attempts to fetch data from the API using axios.request(options).

● The await keyword is used before axios.request(options) because the function is asynchronous and waits for the API request to complete before proceeding. ● If the API request is successful, the response data is stored in the response constant variable.

● The console.log(response.data) line logs the fetched data to the console. ● The .then method (not shown in the image) is likely used to process the fetched data after a successful API request.

● The catch block handles any errors that might occur during the API request. If there's an error, it's logged to the console using console.error(error).

Fetching Exercise details

Now, with the help of the Exercise ID, we fetch the details of a particular exercise with API request.

```
useEffect(()=>{
    if (id){
        fetchData(id)
    }
},[])

const fetchData = async (id) => {
    const options = {
      method: 'GET',
      url: `https://exercisedb.p.rapidapi.com/exercises/exercise/${id}`,
      headers: {
        'X-RapidAPI-Key': 'ae40549393msh0c35372c617b281p103ddcjsn0f4a9ee43ff0',
        'X-RapidAPI-Host': 'exercisedb.p.rapidapi.com'
    }
  };

    try {
        const response = await axios.request(options);
        console.log(response.data);
        setExercise(response.data);

        fetchRelatedVideos(response.data.name)
    } catch (error) {
        console.error(error);
    }

}
```

The code snippet demonstrates how to fetch exercise data from an exercise database API using JavaScript's fetch API. Here's a breakdown of the code:

API Endpoint and Key:

● Replace 'https://example.com/exercise' with the actual URL of the API endpoint you want to use.

● Replace 'YOUR_API_KEY' with a placeholder instructing users to replace it with their own API key obtained from the API provider.

async function:
The code defines an asynchronous function named fetchData that likely takes an id parameter as input. This id parameter might be used to specify the ID of a particular exercise or category of exercises to fetch.

fetch request:

Inside the fetchData function, the fetch API is used to make an HTTP GET request to the API endpoint. The function creates a fetch request with the following details:
● Method: GET (to retrieve data from the server)
● URL: The API endpoint URL where exercise data resides.

Handling the Response:

● The then method is used to handle the response from the API request. If the request is successful (i.e., status code is 200), the response is converted to JSON format using response.json().
● The .then method then likely processes the fetched exercise data, which might involve storing it in a state variable or using it to populate a user interface.

Error Handling:
The .catch method is used to handle any errors that might occur during the API request. If there's an error, it's logged to the console using console.error.

Fetching related videos from YouTube
Now, with the API, we also fetch the videos related to a particular exercise with code given below.

```
const fetchRelatedVideos = async (name)=>{
  console.log(name)
  const options = {
    method: 'GET',
    url: 'https://youtube-search-and-download.p.rapidapi.com/search',
    params: {
      query: `${name}`,
      hl: 'en',
      upload_date: 't',
      duration: 'l',
      type: 'v',
      sort: 'r'
    },
    headers: {
      'X-RapidAPI-Key': 'ae4054939jmsh0c35372c617b281p103ddcjsn0f4a9ee43ff0',
      'X-RapidAPI-Host': 'youtube-search-and-download.p.rapidapi.com'
    }
  };

  try {
    const response = await axios.request(options);
    console.log(response.data.contents);
    setRelatedVideos(response.data.contents);
  } catch (error) {
    console.error(error);
  }
}
```

The code snippet shows a function called *fetchRelatedVideos* that fetches data from YouTube using the RapidAPI service. Here's a breakdown of the code:

fetchRelatedVideos function:

This function takes a name parameter as input, which is likely the name of a video or a search query.

API configuration:

The code creates a constant variable named options and assigns it an object literal containing configuration details for the API request:

● method: Set to 'GET', indicating a GET request to retrieve data from the server.
● url: Set to 'https://youtube-search-and-download.p.rapidapi.com/search', which is the base URL of the RapidAPI endpoint for YouTube search. ● params: An object literal containing parameters for the YouTube search query:
● query: Set to \${name}, a template literal that likely gets replaced with the actual name argument passed to the function at runtime. This specifies the search query for YouTube videos.

● Other parameters like hl (language), sort (sorting criteria), and type (video type) are included but their values are not shown in the snippet.
● headers: An object literal containing headers required for making the API request:
● 'X-RapidAPI-Key': Your RapidAPI key, which is used for authentication. You should replace 'YOUR_API_KEY' with a placeholder instructing users to replace it with their own API key.
● 'X-RapidAPI-Host': The host of the API, which is 'youtube-search-and-download.p.rapidapi.com' in this case.

Fetching Data (try...catch block):

● The try...catch block is used to handle the API request.
● The try block contains the code that attempts to fetch data from the API using axios.request(options).
● axios is an external JavaScript library for making HTTP requests. If you don't already use Axios in your project, you'll need to install it using a package manager like npm or yarn.
● The .then method (not shown in the code snippet) is likely used to process the fetched data after a successful API request.
● The catch block handles any errors that might occur during the API request. If there's an error, it's logged to the console using console.error(error).

Project Execution:

After completing the code, run the react application by using the command “npm start” or “npm run dev” if you are using vite.js

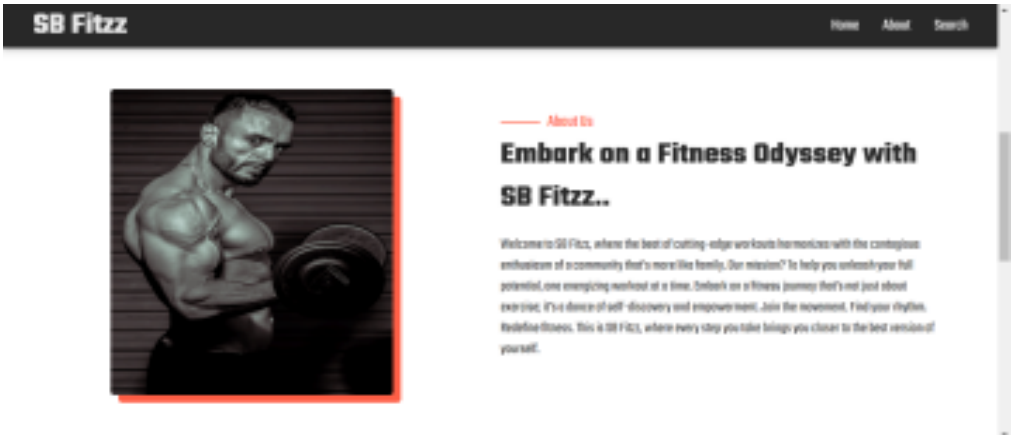
Here are some of the screenshots of the application.

Hero component

This section would showcase trending workouts or fitness challenges to grab users' attention.

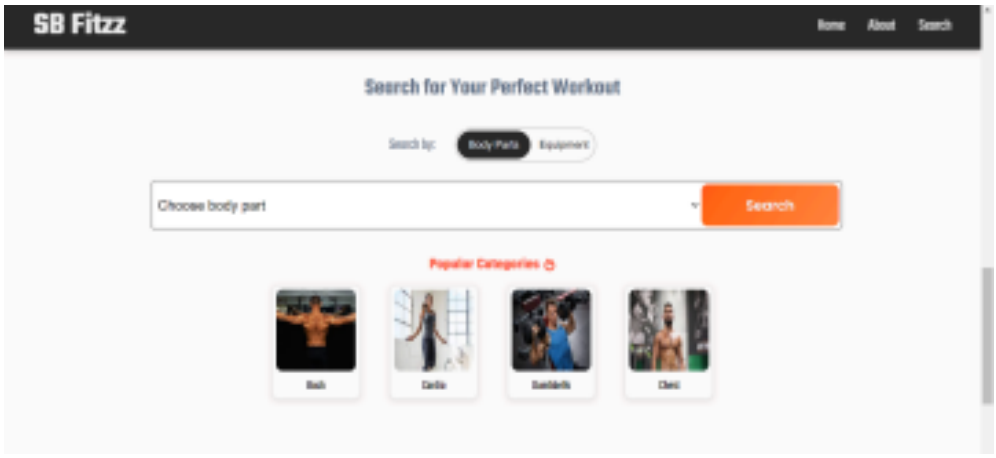
About

FitFlex isn't just another fitness app. We're meticulously designed to transform your workout experience, no matter your fitness background or goals.



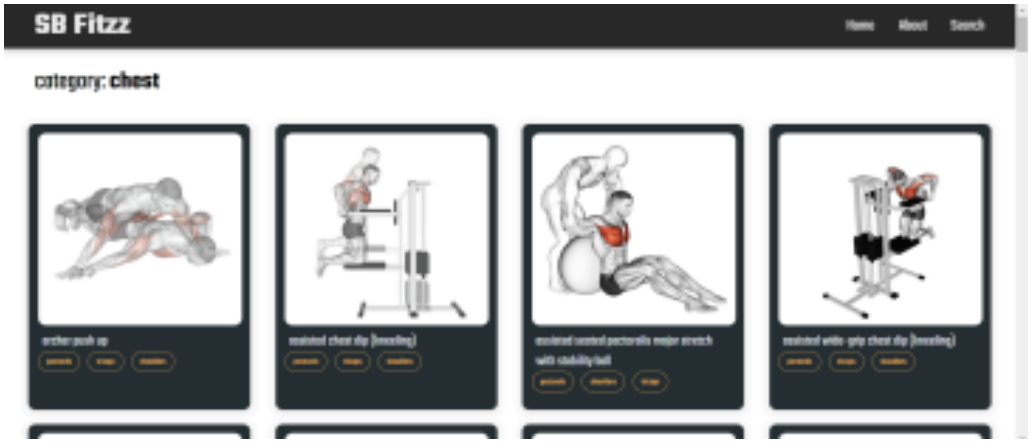
Search

B Fitzz makes finding your perfect workout effortless. Our prominent search bar empowers you to explore exercises by keyword, targeted muscle group, fitness level, equipment needs, or any other relevant criteria you have in mind. Simply type in your search term and let FitFlex guide you to the ideal workout for your goals.



Category page

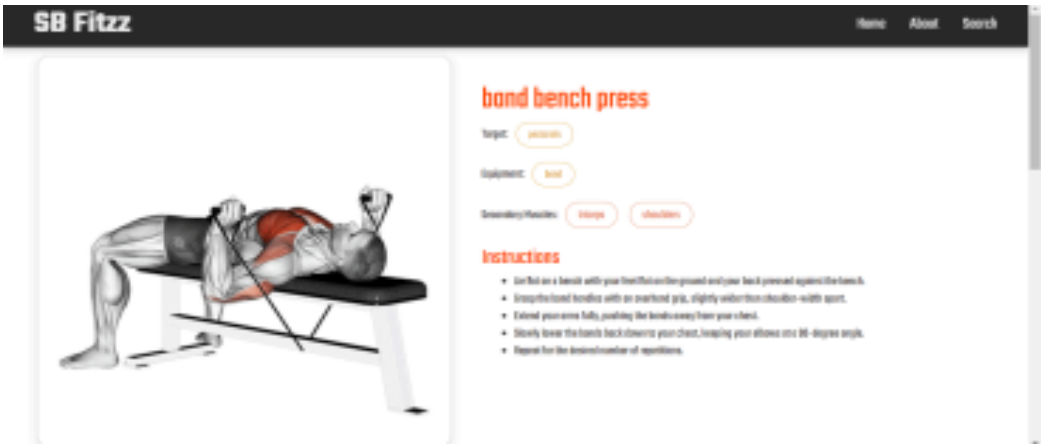
FitFlex would offer a dedicated section for browsing various workout categories. This could be a grid layout with tiles showcasing different exercise types (e.g., cardio, strength training, yoga) with icons or short descriptions for easy identification.



Exercise page

This is where the magic happens! Each exercise page on FitFlex provides a comprehensive overview of the chosen workout. Expect clear and concise instructions, accompanied by high-quality visuals like photos or videos demonstrating proper form. Additional details like targeted muscle groups, difficulty level, and equipment requirements (if any) will ensure you have all the information needed for a safe and effective workout.

:



Demo link
:https://drive.google.com/file/d/1UdL6dwtVb0LxWaN2j1q0HWmyzo8uabda/view?usp=sharing

Thank you!!