FitFlex: Your Personal Fitness Companion
Ideation Phase
Empathize & Discover

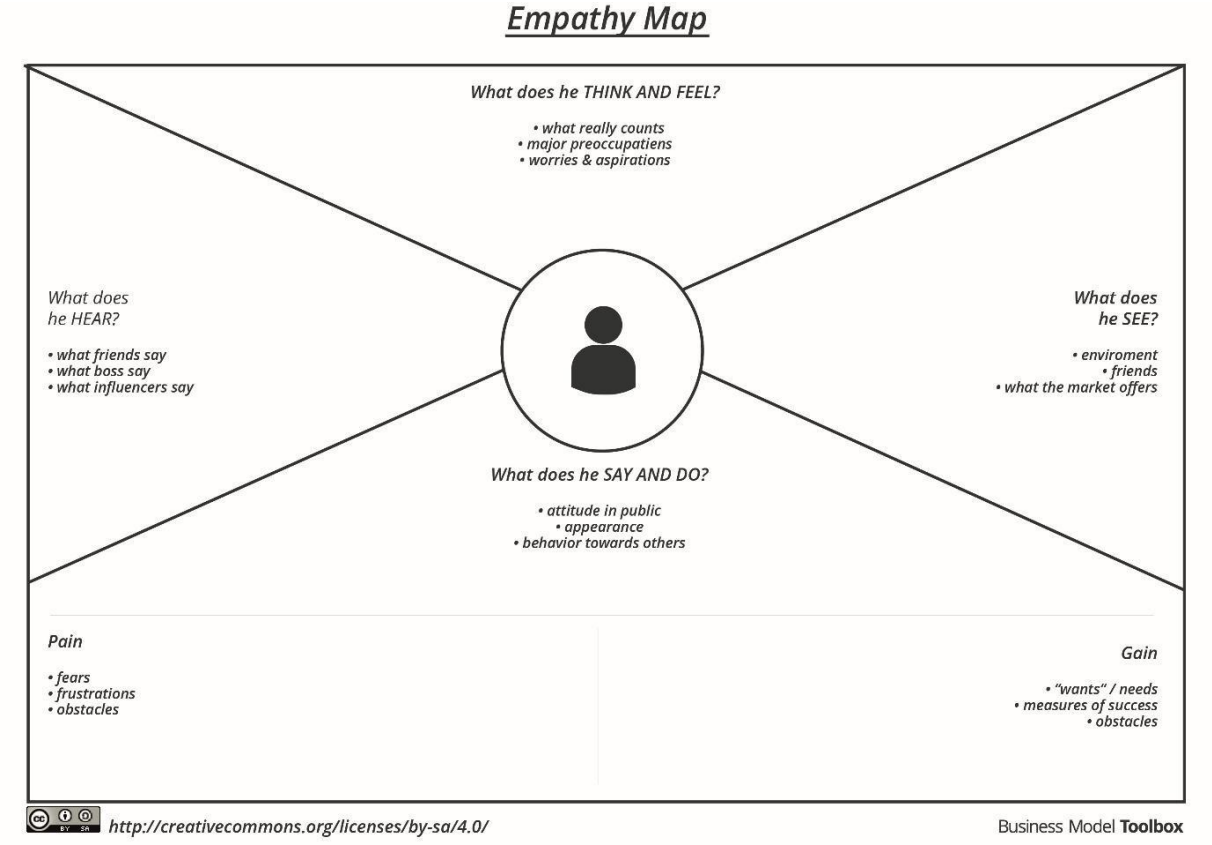
Date	31 January 2025
Team ID	148837
Project Name	FitFlex:Your Personal Fitness Companion
Maximum Marks	4 Marks

Empathy Map Canvas:

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.

It is a useful tool to helps teams better understand their users.
Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.

Example:



Reference: https://www.mural.co/templates/empathy-map-canvas

Says
What have we heard them say?
What can we imagine them saying?

I want to track my workouts easily.

Thinks
What are their wants, needs, hopes, and dreams?
What other thoughts might influence their behavior?

Am I making progress?

Shivani Kapoor
Fitness Enthusiast

Logs workouts, checks trends, looks for motivation.

Excited when progress is visible, discouraged if not.

Does
What behavior have we observed?
What can we imagine them doing?

Feels
What are their fears, frustrations, and anxieties?
What other feelings might influence their behavior?

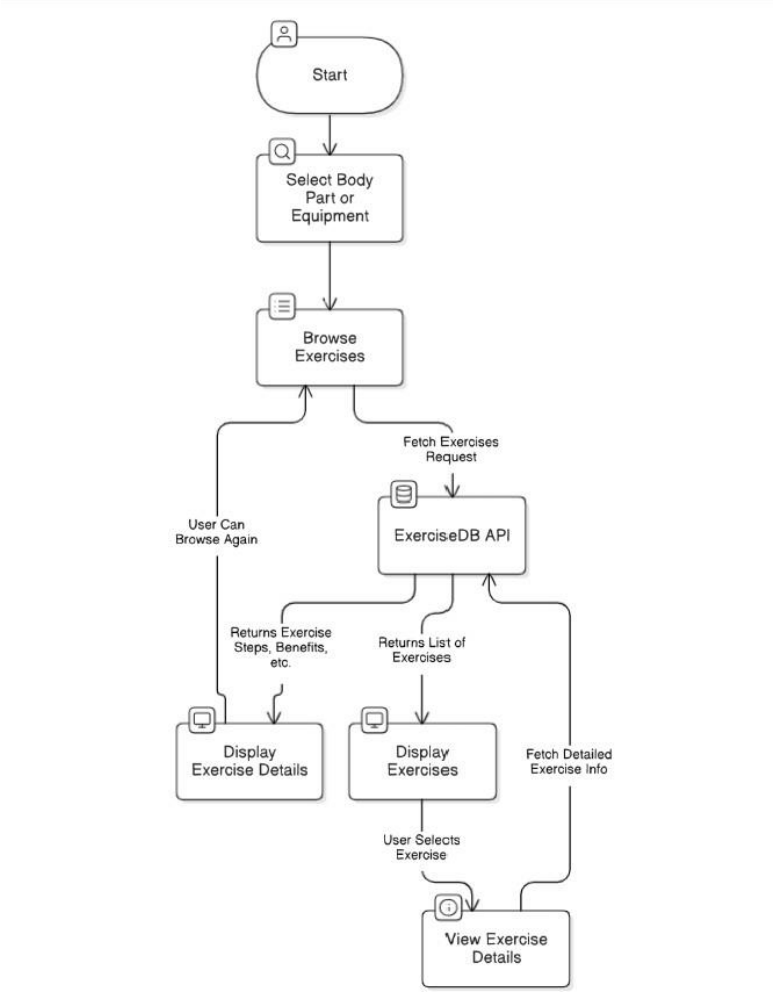
See an example

Project Design Phase II
Data Flow Diagram & User Stories

Date	6 March 2025
Team ID	148837
Project Name	FitFlex
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.



1. The User selects a body part or equipment.
2. The request is sent to Browse Exercises, which fetches relevant data from ExerciseDB API.
3. The API returns a list of exercises, which is displayed to the User.
4. The User selects a specific exercise, triggering the View Exercise Details process.
5. The ExerciseDB API provides detailed exercise information.
6. The app displays the details, and the User can either browse more exercises or select another one.

User Stories:

User Type	User Story	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web User)	USN-1	As a User, I can browse exercises by selecting a body	I can see a list of exercises related to the selected body parts.	High	Sprint-1
Customer (Web User)	USN-2	As a user, I can browse exercise by selecting equipment.	I can see a list of exercises related to the selected equipment.	High	Sprint-1
Customer (Web User)	USN-3	As a user, I view detailed explanations about exercise.	I can see exercise images, steps and target muscles	High	Sprint-1
Customer (Web User)	USN-4	As a user, I can see related Youtube	I can navigate to the related videos on	Low	Sprint-2
Customer (Web User)	USN-5	As a user, I can easily navigate to the home page.	I can click the home button and return to the home page.	High	Sprint-1

Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	6 March 2025
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Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

S.No	Component	Description	Technology
	User Interface	How user interacts with application	ReactJS, CSS, React Fa icons
	Application Logic-1	Logic for fetching and displaying data	JavaScript, ReactJS
	Application Logic-2	API requests handling and error handling	Axios for HTTP requests
	External API-1	Fetching ExerciseDB data	ExerciseDB API (via RapidAPI)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
	Open-Source Frameworks	List the open-source frameworks used	ReactJS, Axios
	Security Implementations	Securing API calls and access controls	HTTPS, API key authentication

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	6 March 2025
Team ID	148837
Project Name	FitFlex
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Browsing Exercises	Browse Exercise by Body Parts Browse Exercise by Equipment Browse Exercise by Popular
FR-2	Exercise Details	View exercise GIF, Target muscles, secondary muscles. Confirmation via OTP
FR-3	User Experience	Navigate Back to Home page.

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The User Interface (UI) should be easy to navigate for all users of all skill levels.
NFR-2	**Security**	API requests must be secure.
NFR-3	**Reliability**	The system should handle API failures gracefully.
NFR-4	**Performance**	The application should load data quickly.
NFR-5	**Availability**	The system should maintain an uptime of at least 99.9%, ensuring accessibility across different time zones.
NFR-6	**Scalability**	The app should handle increasing numbers of users and concurrent streams efficiently without performance degradation. The architecture should support future feature expansion.

Project Planning Phase

Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Date	6 March 2025
Team ID	148837
Project Name	FitFlex
Maximum Marks	5 Marks

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	UI Setup	USN-1	Set up React.js project structure with necessary dependencies	7	High	Bhanu
Sprint-1	Home Page & Navigation	USN-2	Create a homepage where users can browse by body part or	7	High	Bhanu
Sprint-1	API Integration	USN-3	Fetch exercise data from ExerciseDB API & display body parts	6	High	Bhanu
Sprint-2	Exercise Listing	USN-4	List exercises dynamically based on	7	High	Bhanu
Sprint-2	Exercise Details Page	USN-5	Create a detailed page for each selected	7	High	Bhanu
Sprint-2	Filtering Feature	USN-6	Enable filtering of exercises based on	6	High	Bhanu
Sprint-3	UI Enhancement	USN-7	Improve UI/UX with React Icons and better	10	Medium	Bhanu
Sprint-3	Error Handling	USN-8	Implement error handling for failed API requests	10	Medium	Bhanu
Sprint-4	Search Feature	USN-9	Allow users to search exercises by keyword	10	High	Bhanu
Sprint-4	Responsive Design	USN-10	Ensure responsiveness for mobile & tablet views	10	Medium	Bhanu

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End	Sprint Release Date (Actual)
Sprint-1	20	6 Days	1 Mar 2025	2 Mar 2025	20	2 Mar 2025
Sprint-2	20	6 Days	3 Mar 2025	4 Mar 2025	20	4 Mar 2025
Sprint-3	20	6 Days	5 Mar 2025	6 Mar 2025	20	6 Mar 2025
Sprint-4	20	6 Days	7 Mar 2025	8 Apr 2025	20	8 Apr 2025

Project Design Phase
Problem – Solution Fit Template

Date	6 March 2025
Team ID	148837
Project Name	FitFlex
Maximum Marks	2 Marks

Problem – Solution Fit Overview:

The **Problem-Solution Fit** ensures that the identified problem aligns with the needs of users and that the proposed solution effectively addresses it. This concept helps developers, marketers, and business strategists validate the **necessity and effectiveness** of their solution before further development.

Purpose:

- Address the **lack of a structured and interactive fitness guidance platform** for users who seek customized exercises based on body parts or equipment.
- Provide an intuitive and engaging experience for users to **discover exercises quickly** without the need for manual research.
- Offer seamless navigation and **real-time data retrieval** from **ExerciseDB API** to enhance user experience.
- Improve accessibility and engagement through an **interactive UI, responsive design, and well-structured data flow**.

Problem Statement:

Many users struggle to find **relevant and structured exercise information** online, leading to frustration and inconsistency in their fitness journey. Most available platforms either require paid memberships or provide unstructured exercise listings without filtering options based on equipment or body parts.

Solution:

- A **React.js-based Fitness Web Application** that provides users with an easy-to-navigate interface to explore exercises by **body parts and equipment**.
- Integration with **ExerciseDB API** ensures users get **up-to-date and detailed exercise information** with images and descriptions.
- **Axios-powered API requests** ensure smooth data retrieval with minimal delays.
- **Categorization and search functionalities** improve accessibility and user engagement.
- A scalable and **responsive UI design** ensures seamless experience across different devices.

Project Design Phase
Proposed Solution Template

Date	6 March 2025
Team ID	148837
Project Name	FitFlex:Your Personal Fitness Companion
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
	Problem Statement (Problem to be solved)	Many users struggle to find structured, easy-to-follow workout plans tailored to their needs (body parts, available equipment). Existing resources are either scattered, unstructured, or behind paywalls.
	Idea / Solution description	A React.js-based fitness web application that allows users to discover exercises categorized by body parts and equipment. The application integrates with ExerciseDB API to provide real-time workout information, images, and descriptions.
	Novelty / Uniqueness	Free and structured access to categorized workouts.

Project Design Phase
Solution Architecture

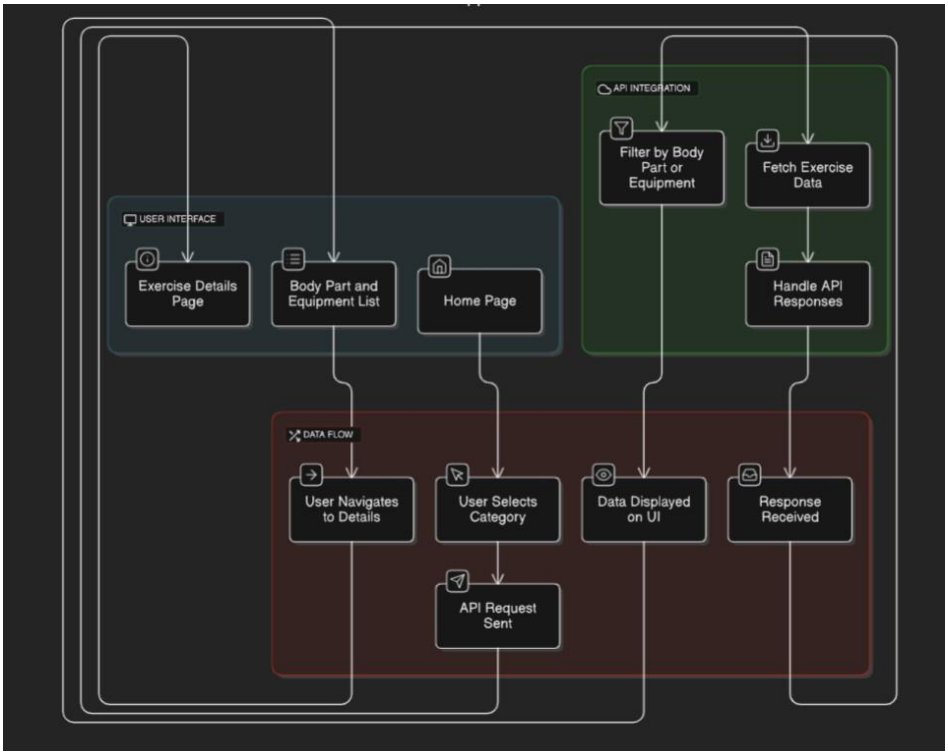
Date	6 March 2025
Team ID	148837
Project Name	FitFlex
Maximum Marks	4 Marks

Solution Architecture:

The solution architecture for the Fitness Web Application ensures a scalable, efficient, and user-friendly platform for discovering and accessing exercise routines based on body parts and equipment.

Goals of the Solution Architecture:

- Identify the Best Tech Solution: Utilize modern front-end frameworks and APIs to provide a seamless fitness discovery experience.
- Define Structure & Characteristics: Ensure modular, scalable, and maintainable software architecture for future enhancements.
- Outline Features & Development Phases: Clearly structure project milestones for effective development and deployment.
- Establish Specifications for Development & Delivery: Provide well-defined guidelines for the system's architecture, API integration, and data flow.



User Acceptance Testing (UAT) Template

Date	6 March 2025
Team ID	148837
Project Name	FitFlex
Maximum Marks	

Project Overview

Project Name: FitFlex
Project Description: A React-based music streaming application that allows users to search, play, and manage music using a third-party API. Features include user authentication, search, playback, playlists, and profile management.
Project Version: v1.0
Testing Period: March 1, 2025 - March 8, 2025

Testing Scope

Features and Functionalities to be Tested

✅ **Home Page & Navigation**

✅ **Exercise Search & Discovery**

✅ **API Integration for Exercise Data**

✅ **Filtering Exercises by Body Part & Equipment**

✅ **Viewing Exercise Details**

✅ **UI/UX Testing (Responsiveness, Icons, Styling)**

✅ **Error Handling & Performance Testing**

User Stories or Requirements to be Tested

📌 **Searching & Viewing Exercises**

📌 **Filtering Exercises by Body Part & Equipment**

📌 **Displaying Exercise Details with Instructions**

📌 **Responsive UI across Mobile, Tablet, and Desktop**

📌 **Handling API Errors Gracefully**

Test Cases

Test Case ID	Test Scenario	Test Steps	Expected Result	Actual Result	Pass/Fail
TC-001	Load Homepage	1. Open the application 2. Homepage loads	Homepage should display the Navbar, About, Hero, Search components	[Actual Result]	[Pass/ Fail]
TC-002	Search for an Exercise	1. Browse and choose from the options in the search bar 2. Click search	Matching exercises should be displayed	[Actual Result]	[Pass/ Fail]
TC-003	Filter by Body Part	1. Select a body part from the filter 2. View filtered	Exercises should be displayed for the selected body part	[Actual Result]	[Pass/ Fail]
TC-004	Filter by Equipment	1. Select an equipment type 2. View filtered exercises	Exercises should be displayed based on selected equipment	[Actual Result]	[Pass/ Fail]
TC-005	View Exercise Details	1. Click on an exercise 2. View details (GIF, instructions, muscles targeted)	Playlist should be created successfully	[Actual Result]	[Pass/ Fail]
TC-006	Mobile Responsiveness	1. Open the app on a mobile device 2. Navigate through pages	UI should be responsive and properly displayed	[Actual Result]	[Pass/ Fail]

Bug Tracking

Bug ID	Bug Description	Steps to Reproduce	Severity	Status	Additional Feedback
BG-001	Search results take too long to load	1. Search for exercises 2. Observe slow loading	High	Open	Need API response optimization
BG-002	Filtering feature not working correctly	1. Observe incorrect results	Medium	In Progress	Filtering logic needs debugging
BG-003	UI overlaps on small screen devices	1. Open app on small devices (iPhone SE) 2. Observe UI distortion	Low	Open	Adjust CSS for better responsiveness

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Sign-off

Tester Name: [Enter Name]
Date: [Enter Date of Completion]
Signature: [Enter Signature]

Notes

- **Ensure testing covers both positive & negative cases**
- **Bug tracking should include severity levels & reproduction steps**
- **Final sign-off required before deployment**