# FitFlex: Your Personal Fitness Companion(React Application)

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## Introduction :

FitFlex is a fitness web application built using React.js that allows users to explore a variety of exercises based on body parts and equipment. The app fetches exercise data from an API and displays it with detailed descriptions and video tutorials.
The goal of FitFlex is to provide a simple and interactive way for users to discover effective workouts. The application includes features such as category-based exercise selection, a dynamic search function, hover animations, and a loading animation while fetching data. FitFlex is designed to be user-friendly and responsive, ensuring a smooth experience across different devices.

## Description :

Imagine a fitness enthusiast searching for the best workouts. With FitFlex, they can easily explore exercises based on body parts or equipment. They navigate through interactive categories, view exercise details with descriptions and videos, and save favorites for quick access. The app ensures a smooth experience with animations and instant search functionality. Whether at home or the gym, FitFlex helps users stay on track with their fitness goals efficiently and conveniently.

## Project goals and objective :

✔ Provide an Intuitive User Experience – Ensure smooth navigation and interaction through a clean UI and animations.

✔ Categorized Exercise Search – Allow users to explore workouts based on body parts and equipment.

✔ Detailed Exercise Information – Display descriptions, videos, and instructions for each exercise.

✔ Favorite Exercises Feature – Enable users to save and access preferred exercises easily.

✔ Seamless API Integration – Fetch real-time exercise data efficiently.

✔ Optimized Performance – Implement loading animations and ensure fast response times.

# FitFlex: Your Personal Fitness Companion
# Ideation Phase
# Brainstorm & Idea Prioritization

| | |
|---|---|
| Date | 31 January 2025 |
| Team ID | |
| Project Name | |
| Maximum Marks | 4 Marks |

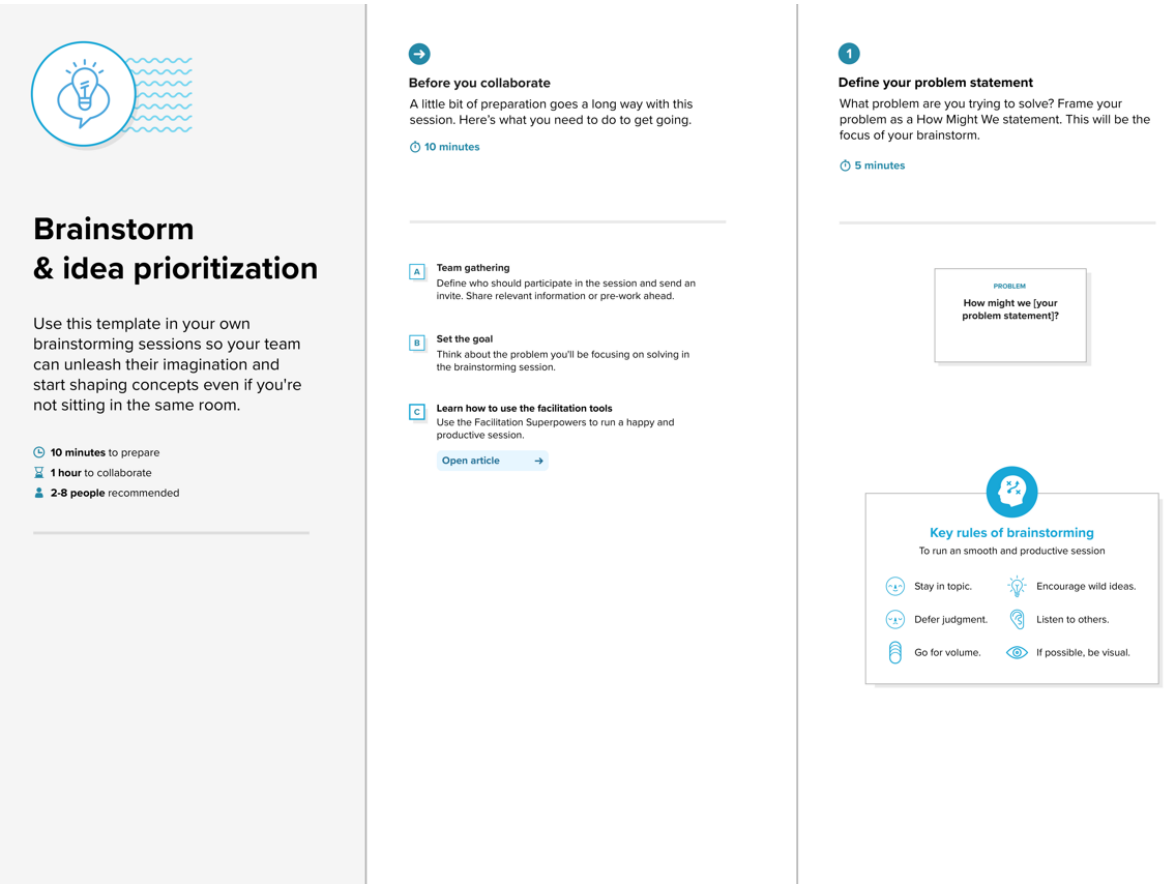
**Brainstorm & Idea Prioritization Template:**

Brainstorming provides a free and open environment that encourages everyone within a team to participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome and built upon, and all participants are encouraged to collaborate, helping each other develop a rich amount of creative solutions.

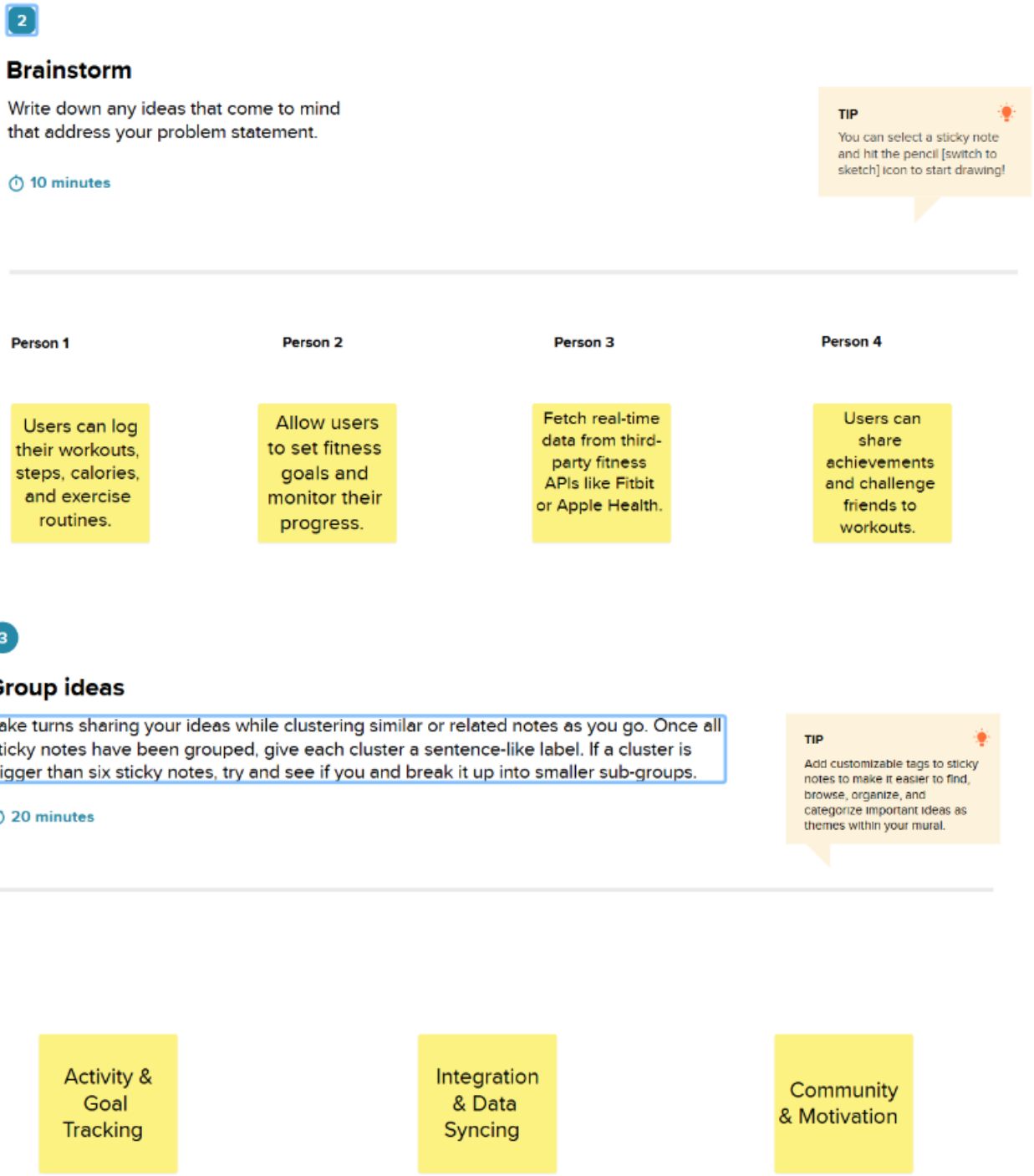
Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

Reference: https://www.mural.co/templates/brainstorm-and-idea-prioritization

**Step-1: Team Gathering, Collaboration and Select the Problem Statement**



**Step-2: Brainstorm, Idea Listing and Grouping**



## Step-3: Idea Prioritization

4

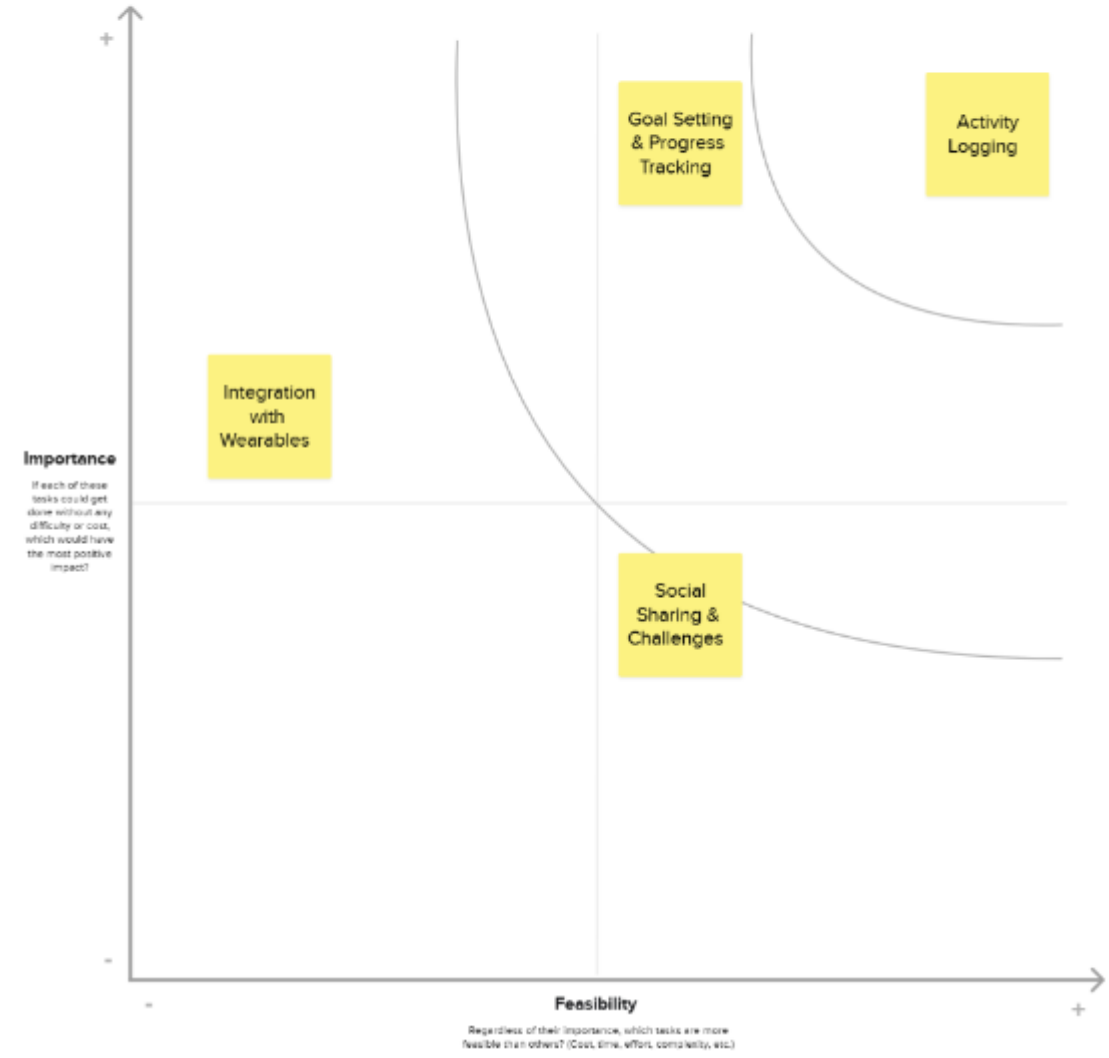
### Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

**TIP**

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H key** on the keyboard.



# FitFlex: Your Personal Fitness Companion
## Ideation Phase
## Define the Problem Statements

| | |
|---|---|
| Date | 5 March 2025 |
| Team ID | |
| Project Name | |
| Maximum Marks | 2 Marks |

**Customer Problem Statement Template:**

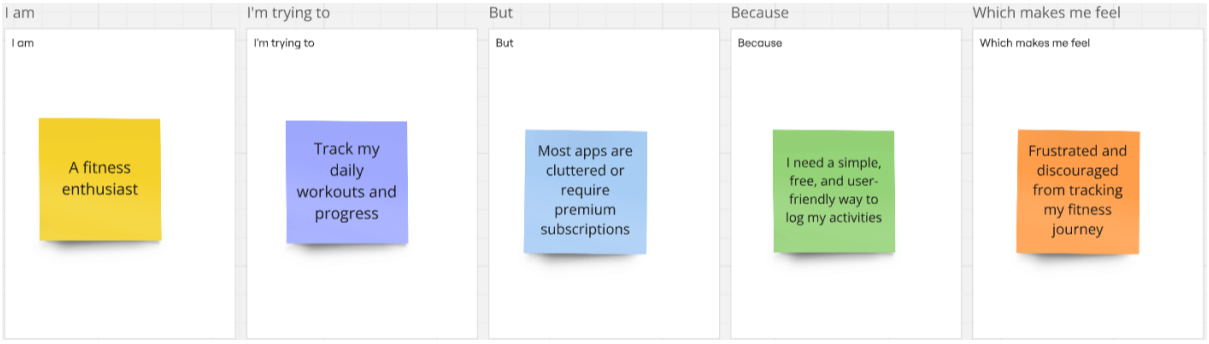
Create a problem statement to understand your customer's point of view. The Customer Problem Statement template helps you focus on what matters to create experiences people will love.

A well-articulated customer problem statement allows you and your team to find the ideal solution for the challenges your customers face. Throughout the process, you'll also be able to empathize with your customers, which helps you better understand how they perceive your product or service.

| | | |
|---|---|---|
| **I am** | Describe customer with 3-4 key characteristics - *who are they?* | Describe the customer and their attributes here |
| **I'm trying to** | *List their outcome or "job" the care about - what are they trying to achieve?* | List the thing they are trying to achieve here |
| **but** | Describe what problems or barriers stand in the way – *what bothers them most?* | Describe the problems or barriers that get in the way here |
| **because** | Enter the "root cause" of why the problem or barrier exists – *what needs to be solved?* | Describe the reason the problems or barriers exist |
| **which makes me feel** | Describe the emotions from the customer's point of view – *how does it impact them emotionally?* | Describe the emotions the result from experiencing the problems or barriers |

Reference: https://miro.com/templates/customer-problem-statement/

**Example:**



| Problem Statement (PS) | I am (Customer) | I'm trying to | But | Because | Which makes me feel |
|---|---|---|---|---|---|
| **PS-1** | A fitness enthusiast | Track my daily workouts and progress | Most apps are cluttered or require premium subscriptions | I need a simple, free, and user-friendly way to log my activities | Frustrated and discouraged from tracking my fitness journey |
| **PS-2** | A beginner in fitness | Start a workout routine and stay consistent | Existing fitness apps are too complicated or overwhelming | I need an easy-to-use interface with basic tracking features | Confused and unmotivated to continue |
| **PS-3** | A busy professional | Monitor my steps and calories without manual input | Some fitness apps require too much manual data entry | I need automatic tracking with minimal effort | Annoyed and less likely to maintain consistency |
| **PS-4** | A goal-oriented user | Set fitness goals and measure my progress | Most apps lack personalized goal tracking | I want a dashboard that visualizes my improvements over time | Uncertain about my progress and less motivated |

# FitFlex: Your Personal Fitness Companion
## Ideation Phase
## Empathize & Discover

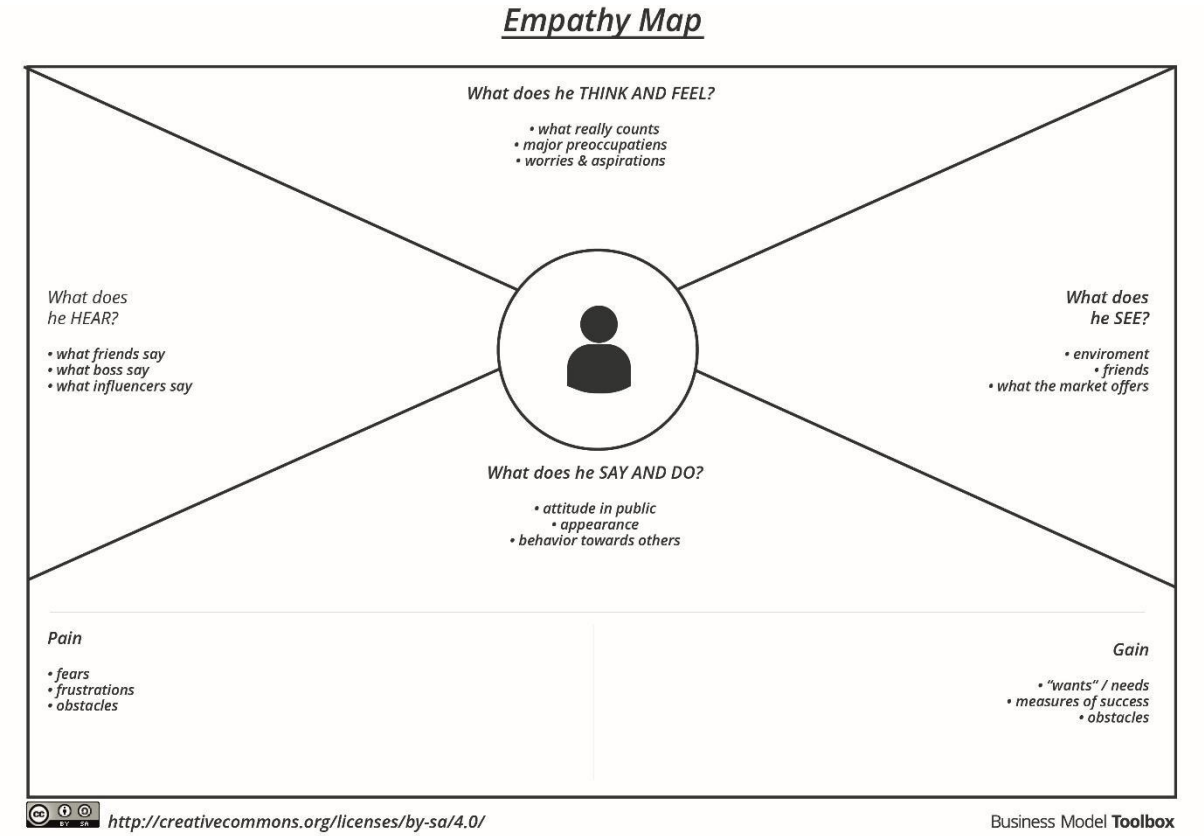
| | |
|---|---|
| Date | 31 January 2025 |
| Team ID | |
| Project Name | |
| Maximum Marks | 4 Marks |

**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**
**Problem – Solution Fit Template**

| | |
|---|---|
| Date | 6 March 2025 |
| Team ID | |
| 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 Planning Phase

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

| | |
|---|---|
| Date | 6 March 2025 |
| Team ID | |
| 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 equipment | 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 body part selection | 7 | High | Bhanu |
| Sprint-2 | Exercise Details Page | USN-5 | Create a detailed page for each selected exercise | 7 | High | Bhanu |
| Sprint-2 | Filtering Feature | USN-6 | Enable filtering of exercises based on equipment used | 6 | High | Bhanu |
| Sprint-3 | UI Enhancement | USN-7 | Improve UI/UX with React Icons and better styling | 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)

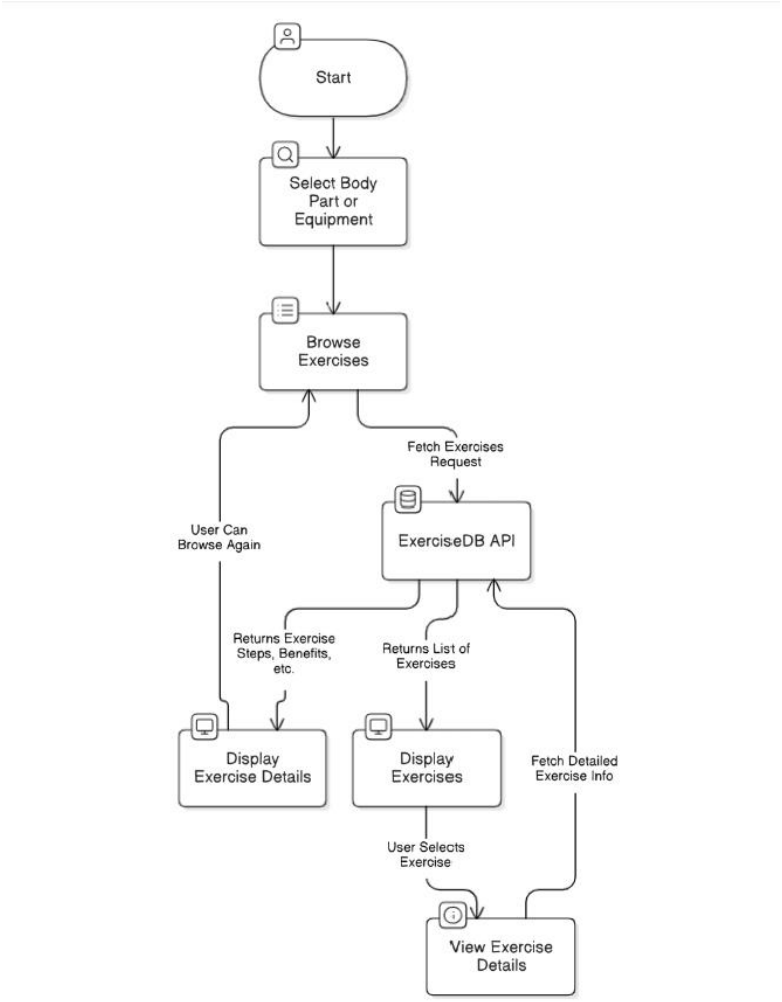
| Sprint | Total Story Points | Duration | Sprint Start Date | Sprint End Date (Planned) | Story Points Completed (as on Planned End Date) | Sprint Release Date (Actual) |
|---|---|---|---|---|---|---|
| Sprint-1 | 20 | 6 Days | 1 Mar 2025 | 2 Mar 2025 | 20 | 2 Mar 2025 |
| Sprint-2 | 20 | 6 Days | 3 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 II**
**Data Flow Diagram & User Stories**

| | |
|---|---|
| Date | 6 March 2025 |
| Team ID | |
| 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 Number | User Story / Task | Acceptance criteria | Priority | Release |
|---|---|---|---|---|---|
| Customer (Web User) | USN-1 | As a User, I can browse exercises by selecting a body part. | 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 videos. | I can navigate to the related videos on Youtube. | 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**
**Solution Requirements (Functional & Non-functional)**

| | |
|---|---|
| Date | 6 March 2025 |
| Team ID | |
| 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<br>Browse Exercise by Equipment<br>Browse Exercise by Popular |
| FR-2 | Exercise Details | View exercise GIF, Target muscles, secondary muscles.<br>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 Design Phase-II**
**Technology Stack (Architecture & Stack)**

| | |
|---|---|
| Date | 6 March 2025 |
| Team ID | |
| Project Name | |
| Maximum Marks | 4 Marks |

**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 |
|---|---|---|---|
| 1. | User Interface | How user interacts with application | ReactJS, CSS, React Fa icons |
| 2. | Application Logic-1 | Logic for fetching and displaying data | JavaScript, ReactJS |
| 3. | Application Logic-2 | API requests handling and error handling | Axios for HTTP requests |
| 4. | External API-1 | Fetching ExerciseDB data | ExerciseDB API (via RapidAPI) |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | List the open-source frameworks used | ReactJS, Axios |
| 2. | Security Implementations | Securing API calls and access controls | HTTPS, API key authentication (RapidAPI) |

# User Acceptance Testing (UAT) Template

| | |
|---|---|
| Date | 6 March 2025 |
| Team ID | |
| 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**

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**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**

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**Test Cases**

| Test Case ID | Test Scenario | Test Steps | Expected Result | Actual Result | Pass/Fail |
|---|---|---|---|---|---|
| **TC-001** | Load Homepage | 1. Open the application<br>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<br>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 | 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] |

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**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<br>2. Observe slow | High | Open | Need API response optimization |

| | | | | | |
|---|---|---|---|---|---|
| | | loading | | | |
| **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)<br>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]

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**Notes**

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