

# FIT-GAME

Fit Again with Fit-Game

Gamified Fitness Experience

Project by Team - Debug-Dreams



# Team Members



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# Problem Statement

- ▶ Children nowadays are constantly engrossed in video games and usually, they use their phones for the same. Just sitting in one place and playing games for a long time restricts the physical movement of people and makes them lethargic as well.
- ▶ People nowadays, have terribly hectic schedules, they don't have time to go to the gym. Physical Inactivity can lead to both physical as well as mental diseases.
- ▶ This leads to some adverse consequences such as weakening of muscles and thus proves to be a poor resort to enjoyment. All this impacts their health negatively.



# Objective and Solution

- We have planned to create a gamified fitness platform in order to help the user enjoy games and maintain good health at the same time.
- Our project idea is to provide a fitness experience that is gamified (applying gaming principles, game design techniques, and game mechanics to applications in order to improve clinical outcomes).
- We will mainly implement our project in python using machine learning. The game would require users to run and jump as well as do physical exercises in real life in order for their avatar in the game to imitate the motion and move on the screen.
- To motivate the users, we are planning to give rewards on multiple levels. Also, the users will have to earn a fixed number of rewards each day/week to fulfil their daily and weekly goals along with some challenges mentioned in the apps.
- For example, we can activate the lives to play the game only after the user performs some fitness moves. Also some daily and weekly challenges will be given to the user.
- So, the overall motive is to combine fitness with fun.



# How Is This Different

There is no other web application that analyses live video and transforms the physical experience of exercising and working out into entertaining activities for children.

## Tackles New-Age Problems

Kids get a complete Gaming Experience through this platform. Also helps to tackle the growing problems of laziness and obesity

## Kids Friendly Interface

Easy to use interface which is Child Friendly and doesn't require extra effort to play engaging games

## Motivating through Rewards

Have multiple rewards like Points, Badges, and leaderboards to showcase Achievements with multiple challenges along the way.

# TechStack

Firstly, We will use **Python** , **Machine Learning**, **Deep Learning** for training our model and capturing real time gestures.

We will use different libraries like **TensorFlow**, **OpenCv**, **MediaPipe** for this purpose.

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CREATING THE MODEL

**STEP 1**

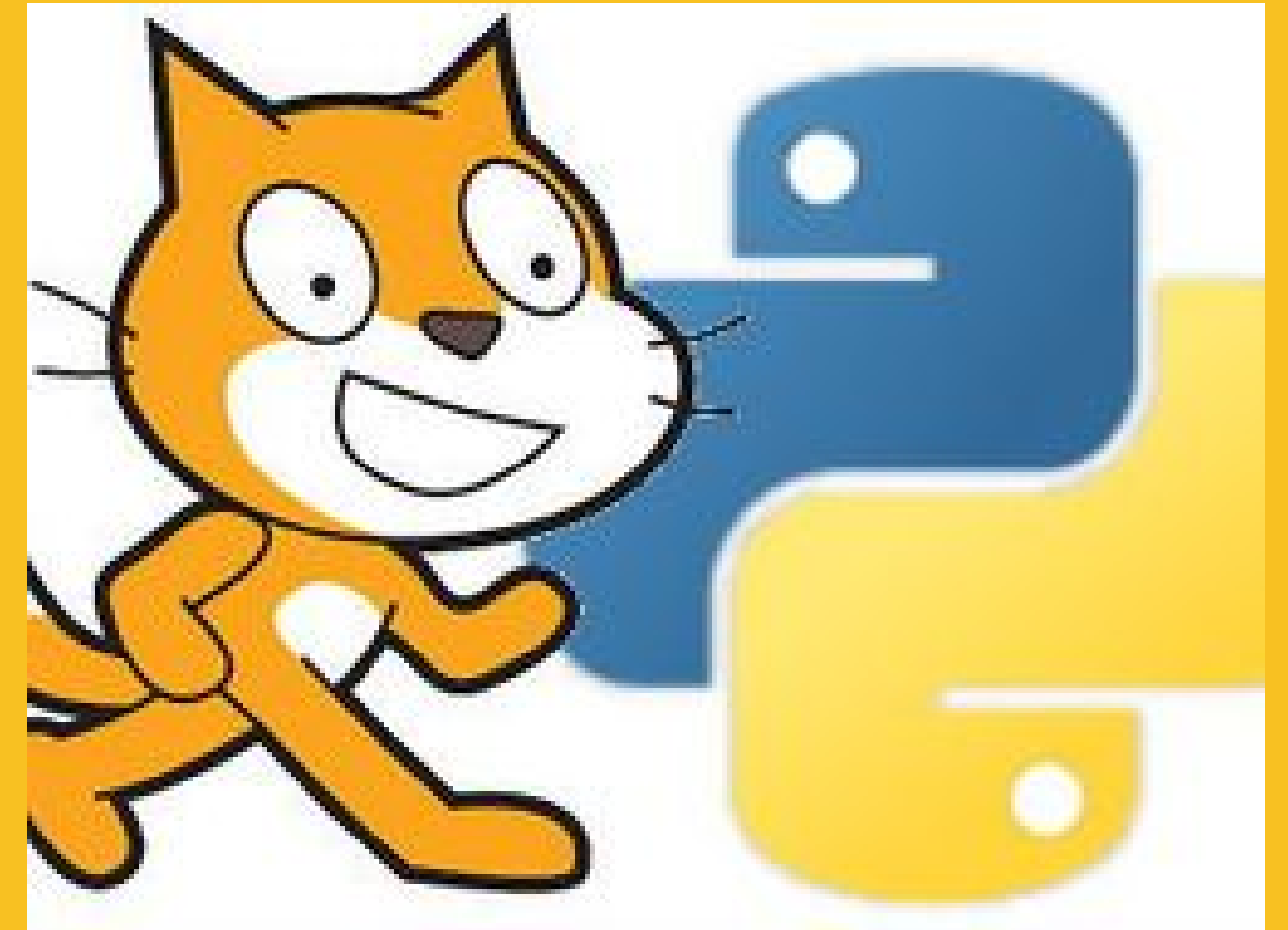
We will create a game to implement our model. We will use Scratch for creating this game and we will integrate our python model with this game.

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IMPLEMENTING THE MODEL

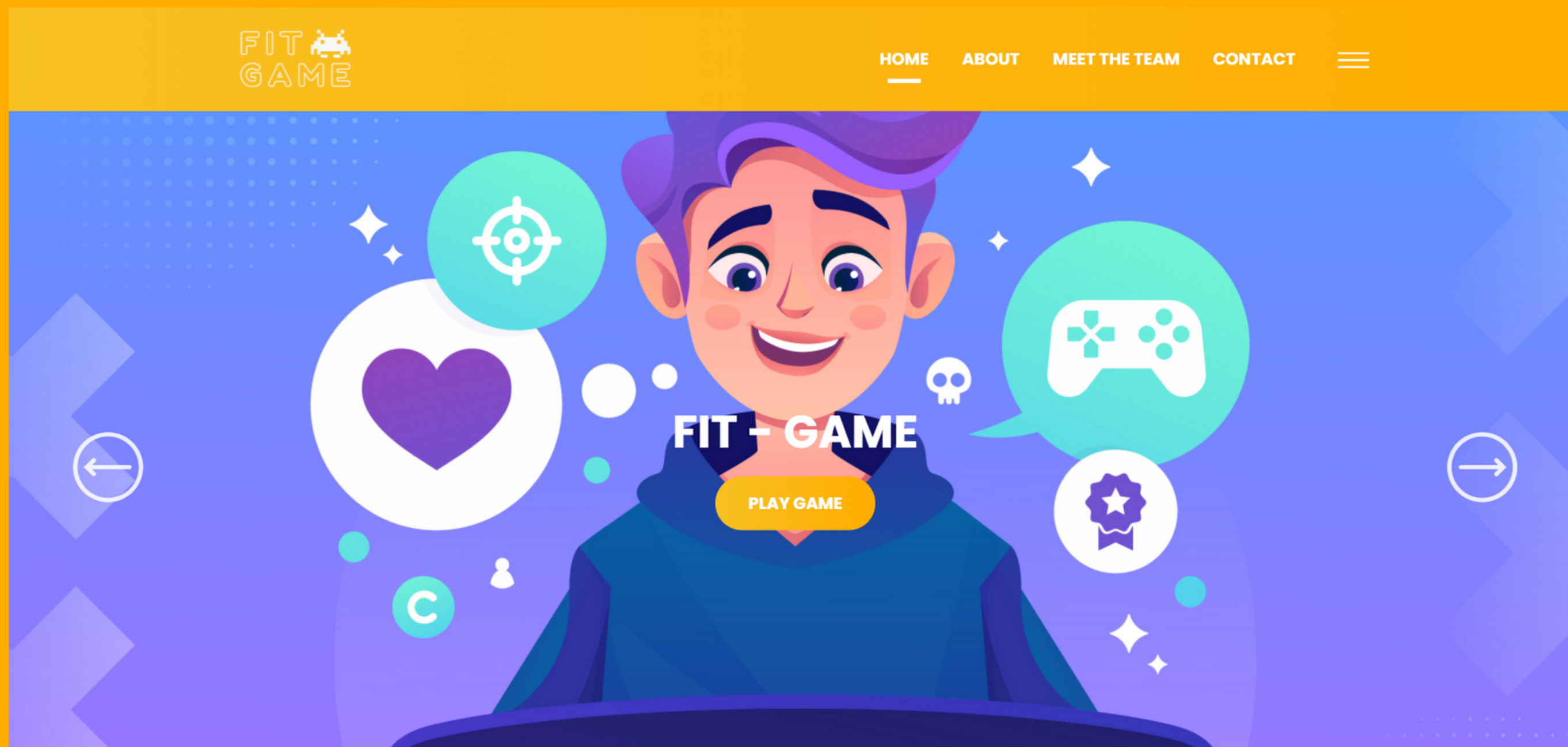
**STEP 2**

For the **webapp**, we have used node.js and express.js for the backend of the website. We plan on connecting it with flask and automating the pose detection process



# Progress on Prototype

- A website has been prepared in order to provide user an interface to understand what is to be done and to connect with us.
- The website has been deployed using Heroku.
- The user can learn about the features of the game and about the team with the help of the webpage.



# Progress on Prototype

- On clicking the play game button of the website, the user will be redirected to the Yoga page.
- After reaching this page, our Yoga pose code would come into action
- The Yoga pose detection model has been developed and trained for Warrior II Pose, Tree Pose, and T Pose.
- The Model has been connected to a voice bot and some visuals which would guide and help the user in performing the poses
- The user will have to hold on to a pose for around 5 seconds and will have to perform 2 cycles of all 3 poses.
- Only after the user is successful in performing the aforementioned actions, he/she will be able to unlock the gaming page.



# Progress on Prototype

- The gaming page would automatically open once the conditions are satisfied (a python code has been prepared for the same)
- The gaming page offers a variety of 3 games to the user and the user can start playing any game he/she wishes to.
- The games have been connected to a python code that would detect the motion of the user in real-time and make the avatar imitate the same on the screen
- The voice bot would give the instructions to the user here too.
- Each time the user would bump into an obstacle, he/she would lose one life. There are 10 lives in total and the game would end once all of the lives end.

# Progress on Prototype

- The games have been coded and designed by using scratch.
- To play a new game (a different game), the user will have to return to the main page and then perform the yoga actions again.
- A video has been embedded in the next slide to give an insight into the working of our code and the game.

# Video of Working

Debug-Dreams

Fit Game

# Existing Solutions in the Market

Most of the existing solutions in the market are:

- Not children friendly and cater only to the needs of Adults and have a tough to understand interface.
- Encourage Participation with a leaderboard to compare progress with friends where leaderboards are based on the number of calories burned and not points gained by playing a game.
- Do not have an option of actual game playing while exercising in real-time and being active.





# Marketing Pitch

## Go to Market Plan

- We will develop our prototype at TRL Level 5 (Technology development level)
- Then, we would approach a set of users to try our prototype and perform some market research. This would help us figure out our target audience and incorporate their needs accordingly.
- We will work on improving our application on the basis of user feedback.
- Next, we would approach some gaming companies and market our idea.
- We will keep on developing new and interesting games and add them to the set of games to provide the user with a huge variety.
- We will also popularize our application using social media platforms

# Marketing Pitch

## Return on Investment

To be explained to a potential investor

- Firstly, we will launch the app as a free app on the play store/other portals
- After some time we may provide a set of free challenges to the user whereas charge for some others.
- Later we might charge some monthly subscriptions to use our application.  
This might be around Rs. 100/person.
- If we happen to have around 10000 users at the end of one year, the ROI (Return on investment) will then become 10,00,000 per month, which implies a business of 1.2 crores per year.
- The ROI would improve with the business becoming successful over time.
- Since this is a gamified fitness model and would take care of both health and fitness at the same time, we expect to have a big user base for this application.

# Future Prospects for our Model

We plan on adding a lot many features to our current prototype to make it market-ready. Some modifications we are working on right now include:

- Connect the pose detection model to our web application through Flask. Currently, we have to run that separately.
- Add a leaderboard option so that people can play and compete with their friends and have fun and fitness in a group.
- We also plan on keep making and adding more games with time.
- We will be adding the condition over games. So that a person can play only one game of a particular type (with 10 lives) only once and will have to perform all the yoga poses again in order to unlock a game.
- We are planning of adding more yoga poses to our model as well.
- Will also be working more on the presentation of the website and integrating all the features at the same place.

# Future Scope

With growing concerns about children's health and the addictive nature of video games, we need a solution that incorporates both enjoyment and health.

Following the Covid-19 pandemic, the use of video and mobile games has skyrocketed, wreaking havoc on people's health.

So we can confidently state that this application has a bright future ahead of it and a noble goal of getting children back in shape.





*Thank you!*

