

Fit AI - Your Pythonic way to wellness

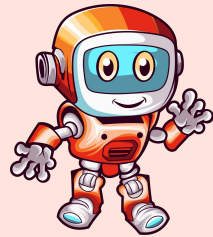


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FIT AI



Interactive User Dashboard



- ★ Interactive user dashboard linking all the features in a SPA (Single Page Application)
- ★ Retaining the programming power of Python while maintaining the UI(User Interface) like React.js or Next.js

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Welcome to FitAI

Your personal fitness companion helping you stay healthy and active.

[Go to Dashboard](#)

About FitAI

FitAI provides personalized fitness plans, tracks your progress, and adapts based on your goals. Discover how FitAI can transform your daily routine into a path to better health.

[Learn More](#)



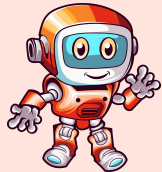
FitAI: End-to-end working

- ★ The user registers, and starts recording logs(exercise, weight, food).
Note: At Least one calorie log must be recorded to generate fitness plans.
- ★ Based on the user's activity level, his/her calorie budget is calculated.
- ★ When generating plans, the calorie deficit needed to lose the required amount of weight in the given number of days is calculated.
- ★ Based on this deficit per day and the weight of the user, the polynomial regression model calculates the distance the user needs to walk/run each day.
- ★ Given the number of minutes the user is willing to spend each day, if the required speed is too high, the plan is adjusted. If the user has a serious illness, that is also taken into account.
- ★ There is a limit on the distance a user will be asked to walk each day. If the ML(Machine Learning) model recommends walking a larger distance, then the number of days to lose the weight is adjusted, by calling the ML model with a lower calorie deficit per day. This is done until the recommended plan is reasonable.
- ★ If the user is having too many calories, he/she will be instructed to reduce that first, as the fitness plan cannot be generated in such a scenario.

Exercise Data Visualisation

★ Interactive plots are generated based on daily logs

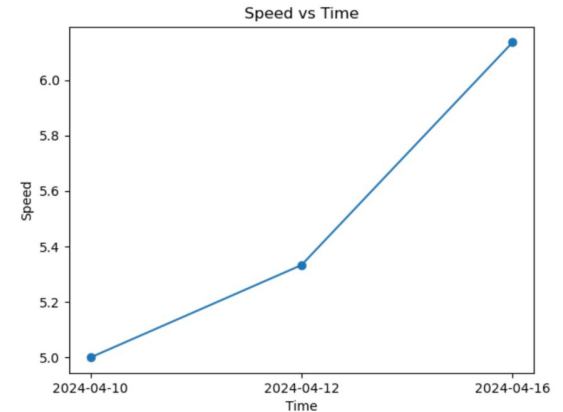
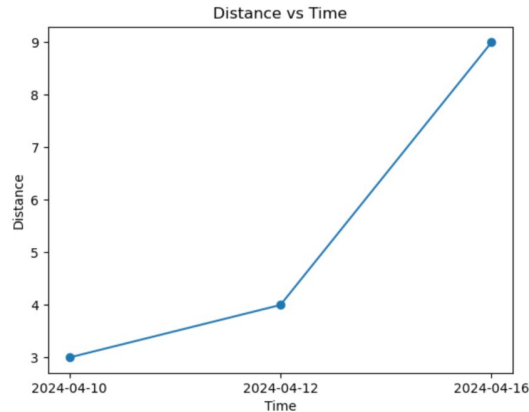
★ Various dimensions are plotted with respect to time for a complete data visualisation



FIT AI

Exercise Details

Date	Distance covered (km)	Time taken (minutes)	Speed (km/h)
2024-04-10	3	36	5.00
2024-04-12	4	45	5.33
2024-04-16	9	88	6.14

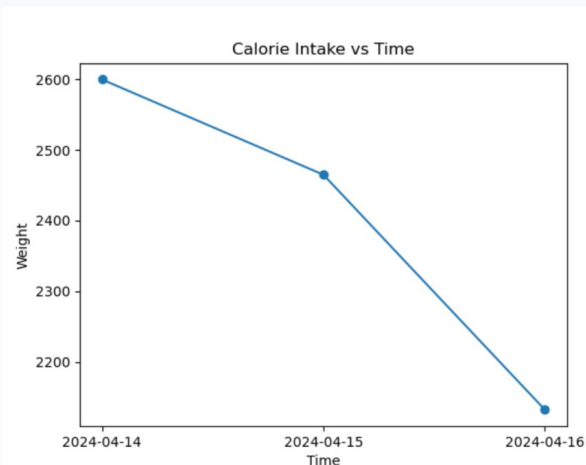


Calories Data Visualisation

- ★ Interactive plots are generated based on regular logs
- ★ User can track their intake over time
- ★ This is a key part of the plan.
If the user is eating less, the generated plan will be less challenging, as it will be easier to lose weight.

Calorie Details

Date	Calories
2024-04-14	2600
2024-04-15	2465
2024-04-16	2132

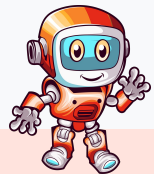
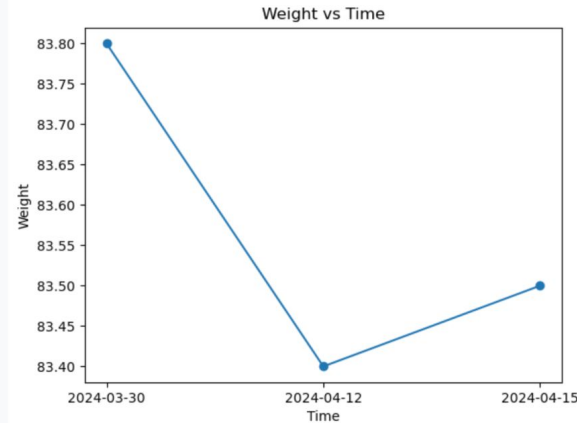


Weight Progress Visualisation

- ★ Plots are generated based on regular weight logs
- ★ User can track their weight loss progress over time
- ★ The current weight of the user is also updated, it is set to the latest weight given- so the fitness plans are dynamic

Weight Details

Date	Weight (kg)
2024-03-30	83.8
2024-04-12	83.4
2024-04-15	83.5



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Integrating the GenAI model

★ Integrated Google Gemini Pro Vision to detect the total calories consumed in a day from an image

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Calorie Intake Log (Automated for today)

Just Provide the menu of the mess that you took meal

Mess Menu

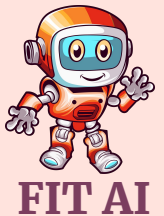
Choose file dhansiri

Submit

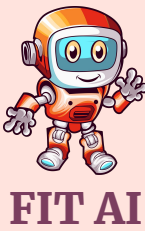
★ Automation of manual logging was done but without any confidential data exposure to LLMs

Calorie Details

Date	Calories
2024-04-12	2180



Add and view illness history



★ User can add his illness history
This history will be taken into account when generating fitness plans

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Add an Illness to Your History

Select an Illness:

Cardiovascular Disease

Severity (1-5):

1 (Mild)

Add Illness

★ User can view their history and also update the severity of their illness

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Your Illness History

Illness	Severity
Asthma	3

Generating and viewing Fitness plan

- ★ Generate your very own fitness plan based on number of days and time you exercise every day.
- ★ View fitness plans, designed to ensure that if you are too ambitious, the plan is altered to make it more appropriate.

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Generate Your Fitness Plan

Time to Lose Weight (days)

50

Daily Activity (minutes)

50

Generate

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Fitness plan generated successfully! The required speed in your fitness plan is too high(> 10 km/h), hence it has been lowered to near 10 km/h and your activity time has been adjusted accordingly!

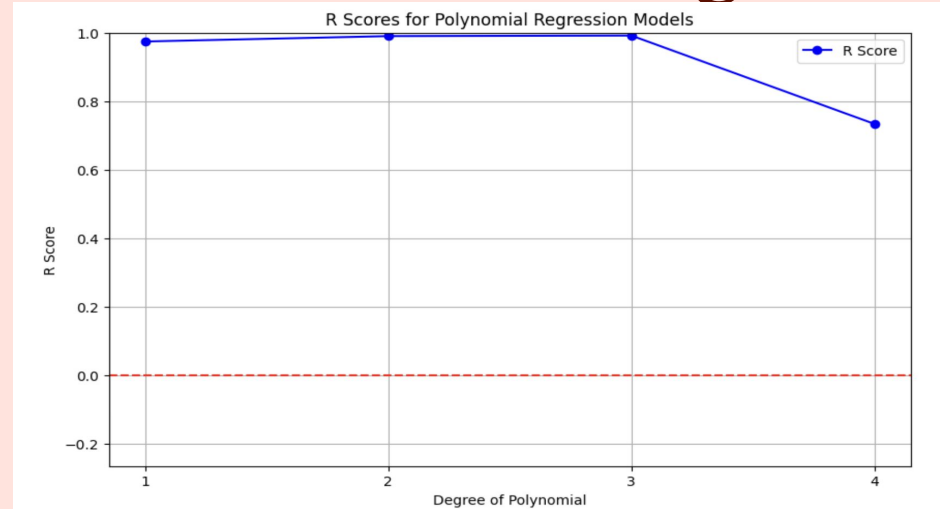
Your Fitness Plans

Date of Generating Plan	Number of days of plan	Distance (km)	Time (min)	Speed (km/h)
2024-04-16	120	4.36	45	5.82
2024-04-16	50	9.49	56	10.17

Discussion on the Machine Learning model

★ Several polynomial regression models were tried, and we found that the model with degree 2 has the best and most stable performance.

★ The variance of the prediction for each degree can be seen in the table- which suggests that degree 2 model makes stable predictions.



Degree	Variance
1	2.372
2	0.726
3	2.552