FITFINITY

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Abstract – Fitness is a broad term that can mean a lot of different things to different people. For some, it can mean a fitness program and for others, it can refer to their fitness level. But regardless of whether you are considering improving your personal fitness level or looking for an effective fitness program, the key is that fitness is a vital part of an active, healthy, and balanced lifestyle. Fitfinity will suggest workouts for user based on their body conditions. There are also other features which a user can use to attain healthy lifestyle. The features include a user friendly Chatbot which provides health and nutritional tips.

Keywords – Workout, Health, Fitness, Exercise, Physical activity.

1. INTRODUCTION

Staying physically active is a very important thing. User should know about their current health status and workout regularly. Our project aims to recommend workouts for users based on their lifestyle, health conditions and several other factors.

The main objective of the project is to recommend workouts to users accurately in order to lead a healthy life. Using fitfinity, we can find workouts based on our needs, lifestyle, and health condition. Our project concentrated mainly on recommending workouts for a particular user over a specific period. we used Random Forest algorithm. Further, we have BMI, BFP, WHR Calculator for users to analyse and understand more about their body. We also have a chatbot, which can give health tips, nutritional tips and so on.

1.1. PURPOSE

Thus, we created our website for the user convenience purpose. They can share their input in the form and know their results. we also included additional features in our website like BMI, BFP, WHR calculator to help the user to know their normal health condition status. This website will provide workouts and based on their health conditions. People will get to know lots of information about health and fitness. By using this website, the user can lead a healthy lifestyle.

2. PROBLEM STATEMENT

Not getting enough physical activity can lead to heart disease even for people who have no other risk factors. It can also increase the likelihood of developing other heart disease risk factors, including obesity, high blood pressure, high blood cholesterol, and type 2 diabetes Aerobic and cardio exercises done regularly are linked to a good heart rate and a lower risk of heart ailments. However, if you do not exercise or go a long time without any form of physical activity, you will start to experience your heart functioning poorly and have it impact everyday tasks. The heart rate can get disturbed, you can encounter shortness of breath and coupled with poor dietary habits, you will be vulnerable to facing heightened heart issues and cholesterol levels as well.

3. PROPOSED SOLUTION

The proposed solution aims to recommend workouts for users based on their lifestyle, health conditions and several other factors. We use Random Forest classifier algorithm for developing model and collect 20 parameters from user for prediction. For diet and exercise Recommendation, C4.5 Decision trees algorithm is used. BMI, BFP, WHR calculator also included so that users can have a detailed report about their health.
4. DATA FLOW DIAGRAM (DFD)

Figure 4.1 Data Flow Diagram

5. SOLUTION ARCHITECTURE

System architecture is the process that satisfies certain specifications across a collection of device specifications identified to a specification. The method fills the distance between the issue region and the current structure in a safe manner. In the cycle the design of the device is split into many smaller sub-activities, operating together to accomplish the key purpose of the program.

6. TECHNICAL ARCHITECTURE

Technical architecture is the need of hardware and software, which are needed to implement the proposed system in the organization. Technical requirements are to be fulfilled to make the proposed system work. This should be necessarily predetermined to make the system more competent.

Technical architecture is the most difficult area to assess at the stage of the system development process. Because objectives, functions and performance are somewhat hazy, anything seems possible if the right assumptions are made.

In this project, the hardware and software that we use are open source and provide flexibility and agility for enterprise.

7. FEATURES

7.1 FEATURE 1 – BMI Calculator

Body Mass Index (BMI) is a person’s weight in kilograms divided by the square of height in Centimetres. Body mass index (BMI) estimates body fat. Your BMI is based on your height and weight. When you enter your height and weight into a BMI calculator, you’ll get a number. That number is one way to gauge if you have a healthy or unhealthy weight.
7.2 FEATURE 2 – BFP Calculator

Body fat percentage (BFP) in humans or other organisms is total fat mass divided by total body weight multiplied by 100. Body fat includes essential body fat and depot fat. Critical body fat is necessary to maintain vital and reproductive function. Body Fat Calculator helps you to find out your body fat percentage, your body type and the number of calories you have to burn, to lose 1% of your body fat.

7.3 FEATURE 3 – WHR Calculator

Waist-to-height ratio (WHR) is the dimensionless ratio of waist circumference to height circumference. This is calculated as the waist measurement divided by the height measurement. WHR has been used as an index or measure of health and as a risk factor for developing serious health conditions. WHR is used as a measure of obesity, which in turn may be an indicator of other more serious health conditions.

7.4 FEATURE 4 - Chatbot

A chatbot is a software application intended to mimic human conversation, usually through text or voice interactions online.
8. ALGORITHM USED

8.1 RANDOM FOREST ALGORITHM

The Random Forest algorithm is a supervised machine learning algorithm that is very popular and used for machine learning classification and regression problems. It focuses on optimizing for the node split at hand, rather than taking into account how that split impacts the entire tree.

9. PERFORMANCE METRICS

Performance metrics measure the behaviour, activities, and performance of a business. It measures the data that is required within a range that is in the form of data. This measures the performance which is the key target to check. The SVM is a classification problem in which the data is identified based on the category or classes of the data.

The given dataset is used by the model for training. The model learns from the dataset and then branches it to different classifiers. An important evaluation metric for the classification problem is the confusion matrix which is in the form of a table that contains the binary classifiers of the outcome from model prediction. Which describes the performance of the model trained.

<table>
<thead>
<tr>
<th>S.No</th>
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<tbody>
<tr>
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<td>Metrics</td>
<td>Classification Model: Confusion Matrix – [115,15,15,92]</td>
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<tr>
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<td>Accuracy Score-87.34</td>
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<td>Classification Report – 89.85</td>
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<tr>
<td>2</td>
<td>Tune the Model</td>
<td>Hyperparameter Tuning - 88.22</td>
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</tbody>
</table>

Table 9.1 Performance Metrics

10. CONCLUSION

Thus, we created our website for the user convenience purpose. They can share their input in the form and know their results. we also included additional features in our website like BMI, BFP, WHR calculator to help the user to know their normal health condition status. This website will provide workouts and based on their health conditions. People will get to know lots of information about health and fitness. By using this website, the user can lead a healthy lifestyle.

11. FUTURE ENHANCEMENT

In the future, we will provide nutritional coach connects. Notifications will be sent to the user for continuous workouts so that they can lead a healthy lifestyle. We will collect the feedback form and ratings from the user to know their thoughts about our website and the betterments will be included in our website based on the feedback given in the form.
12. SAMPLE OUTPUT

Figure 12.1 Users Login Page

Figure 12.2 Fitfinity Home Page

Figure 12.3 Body Mass Index Calculation

Figure 12.4 Body Fat Percentage Calculator
Figure 12.5 Scheduling Workouts

Figure 12.6 Chatbot Interaction

REFERENCES


