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Web-Based Health Score and Health Calculator System

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Abstract: Remaining healthy becomes increasingly difficult for people due to the changing lifestyle and health- related threats they face. Mostly, all these individuals fail to determine their health condition until they are ill. Health Score is an online solution that analyses a patient's body mass index, lifestyle, and health records to calculate their overall health level. Information will be gathered from users through the framework's easy-to-use interface and later processed using the defined health scoring logic. The initial phase involves analyzing the data, followed by normalization to determine the user's first score. The second phase will involve the use of predictive techniques to classify the users according to their health conditions.

Keywords: Health Score, Health Calculator, Web App, Machine Learning, Predictive Analysis

I. INTRODUCTION

Nowadays, with everything being so fast, it becomes very hard for people to always take care of themselves because they don't realize anything until its too late due to lack of acknowledge until its too late due to lack of knowledge about what they are doing to their own body[1,17].

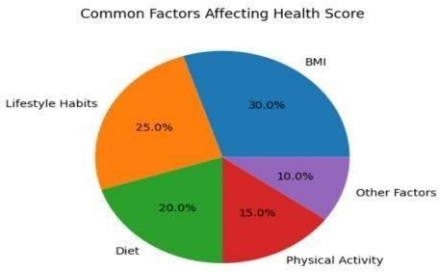

Fig. 1: Important factors that affect Health Score

The suggested Health Score mechanism attempts to address this problem through providing an easy approach to evaluating ones health[10] . individuals would be able to enter their health information into the mechanism and get evaluated into the mechanism and get evaluated with a health score accompanied by recommendations[11,21].

In modern society, there is greater focus on treatment instead of prevention in the health sector[7,8]. Here, the role is reversed since disease detection and health awareness become top priorities[1,17]. By using simple figures and projections, users can quickly understand their health situation[12,10].

Being always on the move, many people do not have time for medical examinations[1]. Thanks to this application, it becomes convenient to perform such tests without having to leave home[10]. Through the classification of the users depending on their health conditions using simple data prediction techniques, the app offers support in making appropriate decisions towards healthy living[11,21].

II. PREVIOUS WORKS

There have been a number of important research projects that have helped to make these smart systems possible. From the outset, Mehetre et al. (2020) [9] demonstrated the application of structured logic to direct web application in interpreting responses. Sonmez and Unver (2001) [10] also camp up with allocation models that take inputs into account to get the best outputs.

III. LITERATURE SURVEY

Health Monitoring Systems

Health monitoring device collects and analyses the health data of the individual. The user provides information regarding his/her weight and physical exercise along with many others[9]. By means of such devices, individuals can monitor their health without visiting a doctor frequently[1]. Nevertheless, existing models have the tendency to concentrate solely on one aspect of health[7]

What sets apart the Health Score program from past health management programs is the attempt to incorporate different aspects of health into one all-inclusive system[2,3]. Apart from managing aspects such as exercising and measuring weight, it also takes care of other aspects of health,aspects[9,1]. This is extremely crucial in ensuring that the analysis of one's health status is objective[12].

In addition, it is also meant to be user-friendly, which means that everyone will find it easy to use the software program. This also ensures that using its scoring system, all responses collected from the users are graded individually[10]. Not only does it save time for the user, but it will also ensure that the users value the significance of their health status[11].

Predictive Health Analysis:

Predictive health technology integrates machines learning with conventional data analysis to predict probable future health problems[10]. Predictive health technology takes information provided by the users, categorizes it based on their health risks while encouraging them to take preventive measures[11]. The effectiveness of predictive health depends on its inputs and algorithms because erroneous data or inaccurate predictions[7]. To ensure prompt and accurate calculations, many internet – based applications use simplistic algorithms[10].

The availability of health technology applications is ubiquitous today[1]. However, most of these technologies are rudimentary and do not provide detailed information about different health aspects[7]. The innovative aspect of Health Score is that it integrates several health metrics and provides one comprehensive result[2,3]

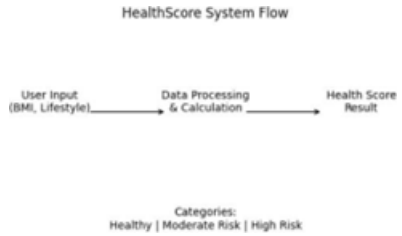

Fig. 2: Health Score system flow for user data processing

it can be clearly seen from the diagram given above how the computation of the score in this case takes place, that is ,how the output is derived from the input data[4 10]. The first thing to do in this case is to collect data about health conditions in connection with parameters like the body Mass Index[9]. The second steps entails doing calculations and making decisions regarding the health condition of the patient , which may range from good health condition to moderate health condition or even high – risk patients[1,2,3].

The table below represents some of the variables used in the online system for the classification of individual in accordance with their scores[11,13]:

Table- 1: Major variables for Health Score evaluation

Variable	Meaning
Body Mass Index (BMI)	Finds the weight class based on height and weight
Lifestyle Score (LS)	Shows daily habits like sleep, diet, and exercise
Health Risk Score (HRS)	Looks at the overall risk based on all the factors together

The table above shows important that help figure out a persons health .which plays very important role in human lives Persons health identify using From the table above, one can easily identify the important variables that help in assessing an individual's health condition. These parameters include BMI, lifestyle score, and health risk score[9,11].Every parameter has its own significance in assessing the different areas of an individual's health. Together, they give a holistic view of the person without concentrating only on one health factor[13,14].

In order to obtain proper results, the use of a systematic approach in assessing the parameters mentioned above becomes very essential[4,6,15]. Unlike the method where estimates can be made randomly, it is always better to analyses each variable first before incorporating it into the final health score assessment[10,7]. One example of a systematic approach adopted in this system is shown below.

Apart from this, the use of such a technology will be very helpful as it will ensure clarity in understanding the difficult information regarding healthcare[12,18]. Instead of providing the user with complex information in numbers, the user will receive just one number based on the data that is inputted by him or her[10,16]. It is only through this way that they learn about their actual standing in the field[19,21].

The Health Score Calculation Approach looks at a number of health-related factors and combines them to come up with a single score[13,11]. The importance of each parameter is based on how it affects overall health[17,12]. The system makes sure that all inputs are taken into account fairly, so that the final result isn't skewed[4,6]. In simple terms, it works by taking user data and making a stable and trustworthy result that is not biased[10].

Step-wise Evaluation: First of all, the system gathers all the required details from the user like BMI, life style choices, etc[9,1]. After collecting all the necessary details, they are structured and processed so that all the values make sense[10,4]. Then, each of the parameters is analyzed individually through a set process that helps analyze the parameter individually[15,11].

During the next step, the integration of the parameters takes place via the process of scoring where each parameter is given the respective weightage according to its influence on body well- being[13,11]. In this way, correct scores are achieved[6]. Ultimately, based on the output from the analysis, users are divided into healthy, moderate, and high health risks[11,14,18].

IV. PROPOSED SOLUTION

The suggested system includes a web-based Health Score app that is meant to quickly and easily check a user's overall health[10,1]. The system gathers important health information like BMI, lifestyle choices, and basic medical information through a simple interface[12]. Then, these inputs are run through a set of rules to come up with a health score[4].

The program works in a structured way, looking at each parameter separately and then putting them all

together to get a final result[13]. To make sure the output is correct and useful, different ways of calculating are used[15]. The system is easy to use for all types of users because it focuses on giving a clear picture of health status instead of complicated medical data[12,18].

After the health score is made, the system puts users into groups based on their health, such as healthy, moderate risk[11,14,19], or high risk. This classification helps users figure out what their current state is and what steps they need to take to avoid getting worse[17,21]. The system also wants to raise awareness by getting people to check their health basis[1,20].

The main focus of the proposed solution is on making things simple, efficient, and easy to use[16]. The Health Score app combines many health metrics into one platform, making it a quick and reliable way to check and improve your health[11,13].

First of all, it should be noted that there are several suggestions that should be taken into account. Firstly, it should be mentioned that the first step in carrying out this calculation consists in calculating the Basal Metabolic Rate[9]. According to the definition of this term, it is evident that it can be viewed as an energy expenditure at rest.

Thus, such a consideration will facilitate making the measurements more accurate in terms of physical activity[15].

In addition, when it comes to calculations of this indicator, it is crucial to point out the fact that there are special coefficients that should be considered[20]. Such importance of the above- mentioned coefficients is due to the fact that they refer to a person's weight. Besides, they vary depending on the individual's age and height[20]. Finally, basal metabolic rate differs for men and women[20]
When dealing with the problem in question, all mentioned criteria will be supported by additional indicators that show health conditions of an individual person[22,19]. In such a way, there will be the opportunity to obtain highly accurate indicators that describe health conditions of a particular individual according to one criterion[23]. Another aspect that requires emphasis when discussing the suggested method refers to the number of health criteria. In this case, it will be much higher than currently[16,21].

The next point worth paying attention to while analyzing the discussed method refers to its simplicity[12,18]. When talking about it, it can be said that all needed information will be inserted into the system automatically. The only thing that will be required is inputting particular figures[10]

Based on the provided discussion, it is possible to conclude that the developed solution will be highly efficient[15].

As evident from the above discussion, it can be stated that the proposed technique would be dependent upon including more health parameters in order to increase the degree of accuracy of the output values[21,22].

BMR Calculation (Mifflin-St Jeor Equation)

$$\begin{aligned} BMR_{male} &= (10 \times weight_{kg}) \\ &+ (6.25 \times height_{cm}) \\ &- (5 \times ag \\ BMR_{female} &= (10 \times weight_{kg}) \\ &+ (6.25 \times height_{cm}) \\ &- (5 \times age) - 161 \end{aligned}$$

V. IMPLEMENTATION

The Health Score web app is made up of several modules that work together to make sure ev4erything runs smoothly, works better, and is easy for users to use[10,4]. Each module is made to do a certain job, which helps keep the system clear, scalable, and easy to manage[6,15]. Making the application into smaller parts makes it easier to work on, test, and improve different

parts of the system without changing how the whole thing works[23]. Below are the main parts of the implementation:

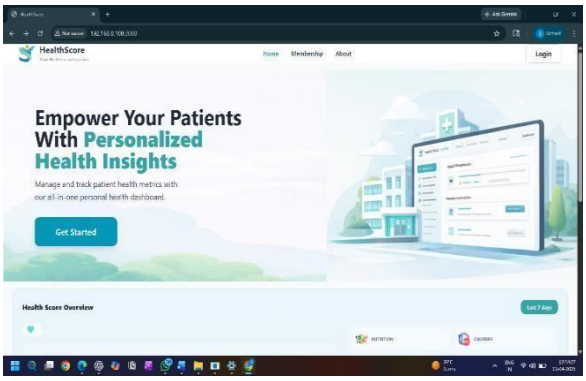

Fig. 3: Home page of Health Score

It is necessary to emphasize that the homepage of the web application Health Score is designed in such a manner that the users can learn more about the application[12,18]. In this connection, it is important to note that the functionalities offered by the site are described on the homepage, because one of the main purposes of the site is to familiarize people with their health condition[1,17]. It is also worth noting that the homepage is properly designed in terms of navigation and login bars. It is also possible to point out that the homepage includes another element motivating people to use the web application[21,20].

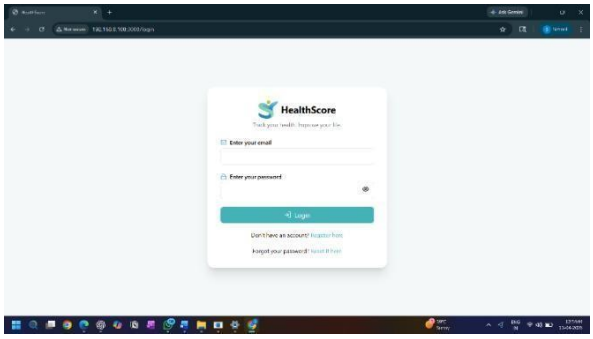

Fig. 4: Login page of Health Score

Apart from the Health Score application, there is also the Login page, which has been created for you to have an easy time logging in your account[12,18]. This is mainly because the login page, provided here, comes with an interface that makes it very easy for you to gain access to your account, as all the relevant information needed for login is contained therein[23]. Notably, this page is free of anything complex that can make things difficult for you[21,15].

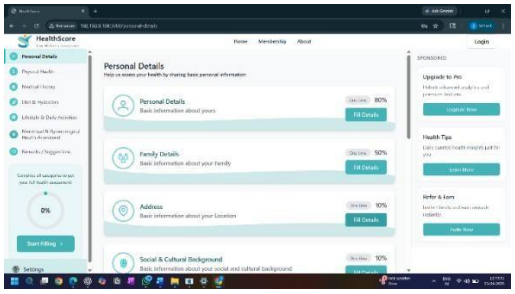

Fig. 5: Form modules

The design module of the Health Score application is used to obtain information from the user in a coherent way and avoid misunderstandings that may arise when the users are filling out forms with their personal details[18]. This application contains various sections that include personal information, family history, address information, and social aspects, all shown in a different page to allow more coherent understanding of each section[4,23]. The design of the form is user friendly, which makes it easy to fill out as well as provides progress tracking to guide users through the application process[21,15].

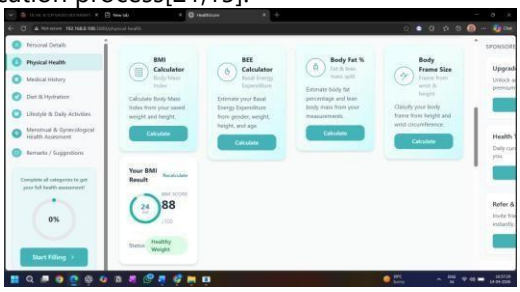

Fig. 5: Calculators

The Health Score software application package consists of various calculators doing different types of calculations[15].

Different calculations that are performed by use of this software application include such things as Body Mass Index, Basal Metabolic Rate, Body Fat, and Body Frame[9,20]. The interface for this particular software application has been designed in an extremely neat manner such that all the calculators have been assigned their own individual cards along with information about the function of each individual calculator[12,18].

health indicators. Then, it looks at each parameter one at a time and slowly puts them together[6,8]. The system can put users into the right health levels after looking at all the factors and coming up with a final result[11,22].

VI. LIMITATIONS

All the information from the program is dependent completely on the data fed by the user into the program. The accuracy of the data fed into the program[10,7].

The whole process depends on the users body mass index calculations and the type of exercise the user engages in without taking into account any other consideration regarding the users health status[9,8].
It facilitates easy generation of health information but does not include all the components required for making the data credible by other means[5,16].

This software should not be used as a substitute for health professionals since it does not incorporate some vital data needed[17].
Genetics, environment, and psychology of the user cannot be incorporated in this system[14,13].
Access to this software can only be gained through the internet[23].

It should not be possible to modify any of these equations at any point regardless of the period of time during which this decision can be made because in this case, it would be wrong to focus too much on all the mentioned approaches[4,16].
saying that while evaluating the state of health of certain individuals according to a number of variables, there is no need to take into account potential mistakes that may occur in the course of the evaluation process[7,5].

There is also a mistake associated with the very population that has been analysed; however, this factor has not been paid any attention whatsoever during the whole process16,19]
As was already said, it should be impossible not to think about the necessity of modification since there will always be numerous errors regardless of anything else[4,6].

VII. CONCLUSION

The Health Score web app is a quick and easy way to check someone's overall health[10,1]. The system makes a single health score that is easy to understand by combining several health factors, such as BMI, lifestyle habits, and basic inputs[9,13]. This helps people quickly learn about their health without having to do complicated medical tests[12,18].

The app's main goal is to raise awareness and stop disease by putting users into groups based on their health status such as healthy, moderate risk, and high risk[11,14]. This and classification helps users spot possible risks early on and make changes to their lives that will make them healthier[21].

The system is easy to use and has a clear structure, which makes it available to a lot of people[16].
In general, the project shows how web-based tools can help people keep track of their health and make decisions[10,4]. The Health Score system makes it easier to check your Health and also encourages people to live

a healthier and more balanced life[20,22]. More accurate results could come from using more advanced prediction methods and combining them with real-time health data[15,6].

Thus, one can assert that the Health Score approach can be taken into account when evaluating the health status, as it takes into consideration several aspects[13]. However, to claim that the Health Score approach does not take into account the impact of the physician's judgment about the health status will undoubtedly be incorrect it will provide further insight into issues[17].

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