THE REVIEW PAPER ON BODY MASS INDEX (BMI) CALCULATOR OF CHILD MALNUTRITION SYSTEM

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Abstract:
The body mass index (BMI) is that the metric currently in use for outlining anthropometric height and weight characteristics in adults and for classifying them into groups. The common interpretation is that it represents an index of an individual's fatness. It is also widely used as a risk factor for the event of or the prevalence of several health issues. The Body Mass Index (BMI) Calculator App is a software programme that eliminates the need for more manual hours to calculate and locate the BMI for a specific person with a single click. This application incorporates both American and Indian standards. This app provides all of the information in both standards that is not available in any other app. The major goal is to keep one's health in good shape. The BMI App provides us with all of the necessary information, such as health recommendations and advice on what to eat and what to avoid.

Keywords: **- Body mass index, Android, Calculator, Application, and Smartphones.**

1. INTRODUCTION

The overweight (Body mass index [BMI] for age and sex from the 85th percentile to the 95th percentile) and obesity (BMI for age and sex greater than or adequate to the 95th percentile) are related to the present and future health of youth also as their academic success. Youth classified as overweight or obese are more likely to be diagnosed with prediabetes (impaired fasting glucose or impaired glucose tolerance) and have more cardio metabolic risk factors than normal weight youth. Various methods for assessing body composition, used for children and adolescents in research settings (for example, hydrodensitometry, plethysmography of air displacement, isotope dilution, two-energy X-ray absorptiometry). The use of these methods in a community setting is limited. As a result, measuring height and weight to calculate body mass index is recommended for overweight/obese people in screening for the younger generation. (BMI? body weight (kg) / height (square meters).

Android is used in over 190 countries and powers hundreds of millions of mobile devices. It has the largest installed base of any mobile platform and is rapidly expanding—every day, a million new Android users turn on their devices for the first time and begin searching for apps, games, and other digital content. Android provides you with a world-class platform for developing apps and games for Android users around the world, as well as an open marketplace for quickly distributing them. This Android application has handy tools for arithmetic, scientific, and converting calculations. It would be particularly useful for students, as they account for the bulk of smartphone users in today's world, and they require tools to help them with the lengthy calculations they must perform in their studies.

2. EXISTING SYSTEM:-

The existing system is very time-consuming and complex to calculate. Calculators are small electrical devices that can perform basic and advanced calculations in a fraction of a second. The concept of a unit is created using a Franchise, which was first used in 2000 BC; after a number of inventions and mechanical counting machines were developed. The scientific calculators were created to assist in performing scientific calculations. However, in the 21th century, when people started using with personal computers, tablets, mobile phones and other electronic devices, so what to wear such as calculators?

2.1 DISADVANTAGES:

The existing system has the following disadvantages:

- It takes a long time.
- A great deal of time and effort is squandered.
- There is a waste of pages.
- It's difficult to keep outdated records up to date.
- Queries are difficult to implement.

3. PROPOSED SYSTEM

The BMI Calculator Application is a software programme that eliminates the need for more manual hours to calculate and locate the BMI for a specific person with a single click. This application incorporates both American and Indian standards. This application provides all of the information in both standards that is not available in any other application.
BMI is calculated the same way for both adults and children. The calculation is based on the following formulas.

Measurement Units	Formula and Calculation
Kilograms and meters (or centimetres)	**Formula**: weight (kg) / [height (m)]^2 With the metric system, the formula for BMI is weight in kilograms divided by height in meters squared. Because height is commonly measured in centimetres, divide height in centimetres by 100 to obtain height in meters. **Example:** Weight = 68 kg, Height = 165 cm (1.65 m) **Calculation:** 68 ÷ (1.65)^2 = 24.98
Pounds and inches	**Formula:** weight (lb) / [height (in)]2 x 703 Calculate BMI by dividing weight in pounds (lbs) by height in inches (in) squared and multiplying by a conversion factor of 703. **Example:** Weight = 150 lbs, Height = 5'5″ (65″) **Calculation:** [150 ÷ (65)^2] x 703 = 24.96

Table 1. BMI calculation formula

- **BMI table for adults:** This is the World Health Organization's (WHO) recommended body weight based on BMI values for adults. It is used for both men and women, age 18 or older.

Category	BMI range - kg/m^2
Severe Thinness	< 16
Moderate Thinness	16 - 17
Mild Thinness	17 - 18.5
Normal	18.5 - 25
Overweight	25 - 30
Obese Class I	30 - 35
Obese Class II	35 - 40
Obese Class III	> 40

Table 2. BMI table for adults

- **BMI table for children and teens, age 2-20:** The Centres for Disease Control and Prevention (CDC) recommends BMI categorization for children and teens between age 2 and 20.

Category	Percentile Range
Underweight	<5%
Healthy weight	5% - 85%
At risk of overweight	85% - 95%
Overweight	>95%

Table 3. BMI table for children and teens

3.1 SCOPE OF THE SYSTEM

The major goal is to keep one's health in good shape. The BMI App provides us with all of the necessary information, such as health recommendations and advice on what to eat and what to avoid. When we enter our height and weight, we are given all relevant information, such as if we are overweight or underweight.

3.2 A FEASIBILITY STUDY

The proposed system should be focus on three primary areas:

1. Technical Feasibility
2. Economic Feasibility
3. Environmental Feasibility
4. Feasibility in Operation

1. Technical Feasibility:

This research shows all of the technical details as well as the outcomes. Because of the below-mentioned feature, the project "BMI Calculator" is theoretically viable. The project was created in Android utilising the JAVA programming language, with a graphical user interface.

2. Economic Feasibility:

The organisation must determine its overall financial status based on the estimates acquired in the previous portions of the study. There are financial benefits to the project as a result of better information reliability and accuracy. The system has little hardware requirements, which reduces the cost of hardware acquisition.

3. Environmental Feasibility:

The method is simpler to use and does not necessitate any specific training. Any special events are alerted to the user through appropriate notifications and messages. The user will have little trouble adapting to the system. The system preserves exceptionally accurate records, and information may be accessible in a matter of seconds.

4. Feasibility in Operation:

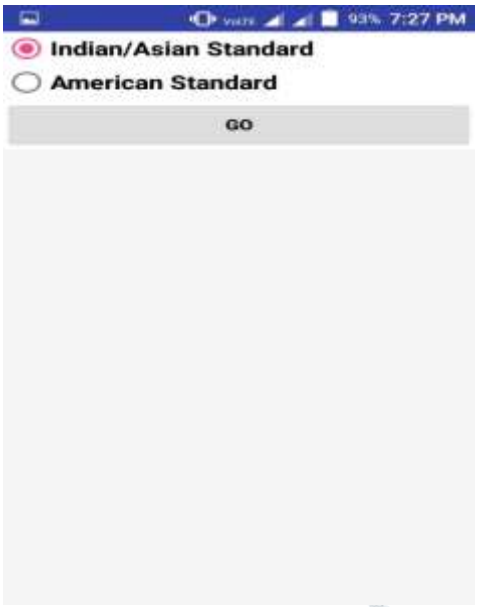

Fig. 1 Screenshot 1.

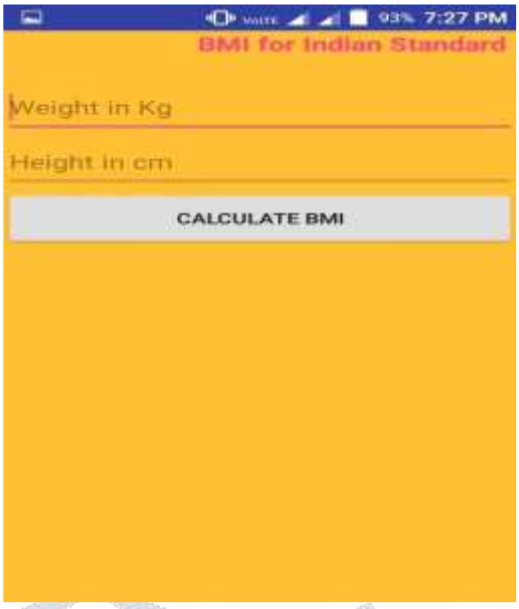

Fig. 2 Screenshot 2.

When you want to calculate BMI then you have to click on the application and open it. After opening the application then you have two options, first option is Indian / Asian standard and second is American standard. As your requirement you have to select respective standard, after that it will show the Enter weight and height screen, enter it accordingly and press calculate BMI button. (Refer fig. 1 and fig. 2).

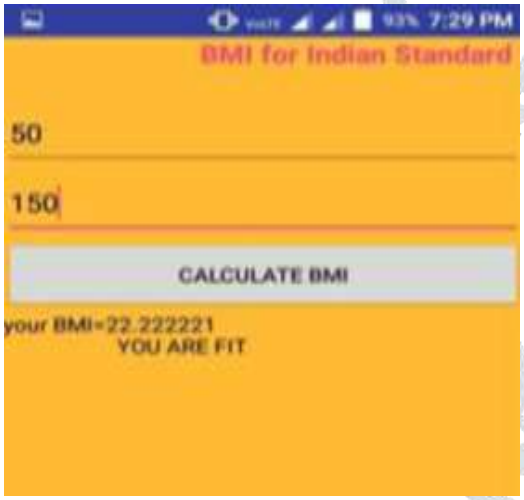

Fig. 3 Screenshot 3.

Fig. 4 Screenshot 4.

In above Fig. 3 & 4 it show that when we enter weight and height, it will calculate respective BMI and it show if that person is fit or obese.

Fig. 5 Screenshot 5.

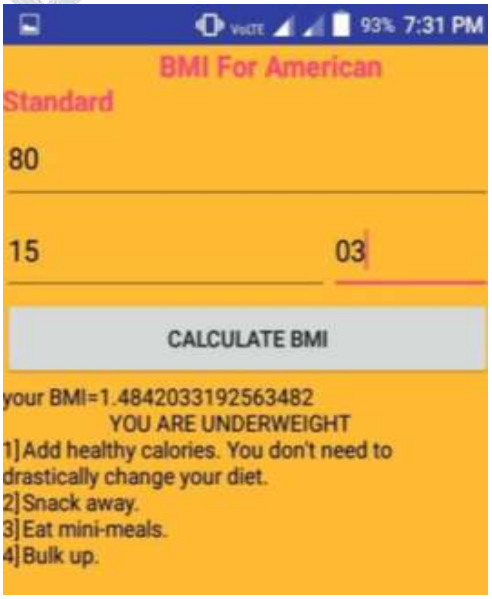

Fig. 6 Screenshot 6.

In above Fig. 5 it show that when we enter weight and height, it will calculate respective BMI and it show the person is underweight. Similarly in fig. 6 you have calculate BMI as per American standard.

4. RESULT & CONCLUSION:

The package was created in such a way that future changes are simple to implement. The following conclusions can be drawn from the project's progress. The efficiency of the entire system is improved by automating it. It has a user-friendly graphical user interface that outperforms the current system. It grants authorised users appropriate access based on their permissions. It effectively solves the problem of time complexity. It has never been easier to keep information up to date. The most notable features are system security, data security, and dependability. If necessary, the System has enough flexibility to be modified in the future.

5. REFERENCES

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