IDEAL BODY WEIGHT

CALCULATOR

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INTRODUCTION

PURPOSE

To develop a tool that calculates ideal body weight using the Devine Formula.

FEATURES

- Inputs: Name, Gender, Height, Actual Weight.
- Outputs: Ideal Weight, Healthy Range, Status (Underweight, Healthy, Overweight).
- GUI using Java Swing and Database Storage in MySQL.
- Personalized Health Tips Based on Weight Status.

ADAPTATION TO REQUIREMENTS ANALYSIS

- **Problem Identified**: Need for a quick and accurate way to calculate ideal body weight.
- **Solution Proposed**: A Java-based calculator with a user-friendly interface.

Key Functional Requirements

- Weight calculation using Devine Formula.
- 10% tolerance range for health status categorization.
- Data storage in MySQL for record-keeping.
- Health Tips for Users Based on Their Weight Status.

UNDERSTANDING OF SOFTWARE DEVELOPMENT METHODOLOGIES

- **Development Model Used**: Waterfall Model
- Requirement Analysis → Design → Implementation → Testing → Deployment.

- **OOP Concepts**: Used modular functions for calculation, input validation, and database handling.

Technology Stack

- **Java (Swing) for GUI.**
- **MySQL for data storage.**
- **NetBeans IDE for development.**

IMPLEMENTATION OF PROCESS CONCEPTS

Modular Implementation

- calculateIdealWeight → Computes ideal weight.
- saveToDatabase → Saves data to MySQL.
- fetchUserData → Retrieves stored records (if implemented).
- provideHealthTips → Suggests health tips based on weight category.

- **User Validation**: Ensures valid numeric inputs and gender selection.
- **Error Handling**: Managed database connectivity errors with try-catch.

APPLICATION OF QUALITY STANDARDS

- Coding Standards Followed: Clean code with meaningful variable names.
- Error Handling: Alerts for invalid input using JOptionPane.
- Database Integrity: Ensured secure data entry and retrieval.
- GUI Usability: Simple, clear layout with intuitive buttons.
- Health Recommendations: Tips provided based on weight category.

PROJECT PLANNING AND RESOURCE MANAGEMENT

Tools Used:

- NetBeans IDE for Java development.
- MySQL for database storage.

Project Timeline:

- Week 1: Requirement Analysis & UI Design.
- Week 2: Java Logic & Formula Implementation.
- Week 3: Database Integration.
- Week 4: Testing & Debugging.

TECHNICAL IMPLEMENTATION

- **Programming Language :** Java (Swing for GUI).
- **Database :** MySQL (JDBC for connection).

Key Functionalities Implemented:

- Calculates Ideal Body Weight using Devine Formula.
- Displays Health Range & Status.
- Stores User Data in MySQL.
- Provides Personalized Health Tips Based on Weight Status.

HEALTH TIPS BASED ON WEIGHT CATEGORY

Underweight

- Increase calorie intake with nutrient-dense foods.
- Eat more frequent meals rich in proteins and healthy fats.
- Strength training to gain healthy muscle mass.

Healthy Weight

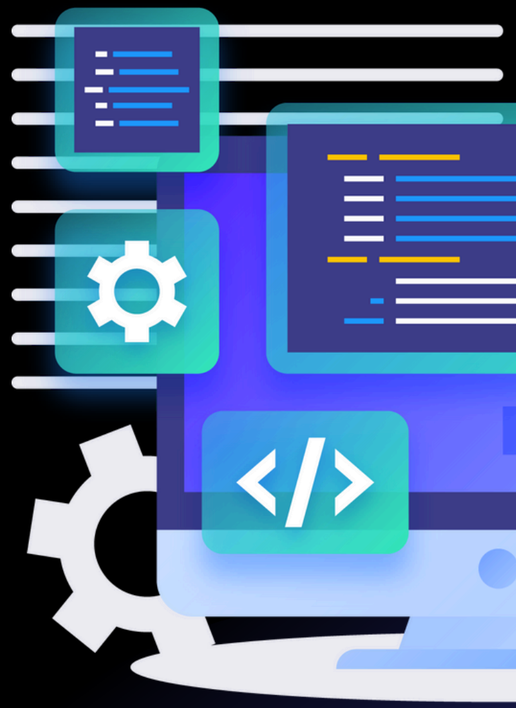
- Maintain a balanced diet with proper portions.
- Continue regular exercise and hydration.
- Get adequate sleep and stress management.

Overweight

- Reduce processed and high-fat foods.
- Increase fiber-rich and protein-based meals.
- Engage in cardio and strength training exercises regularly.

TEAMWORK AND INDIVIDUAL CONTRIBUTIONS

Team Member	Contribution
23ug1-0152 Akindu Randira	Gui design and implementation and database design and implementation
23ug1-0015 Malindu kanishka	Gui design and implementation and database design and implementation
23ug1-0162 isuru udayanga	presentation creation and Gui design

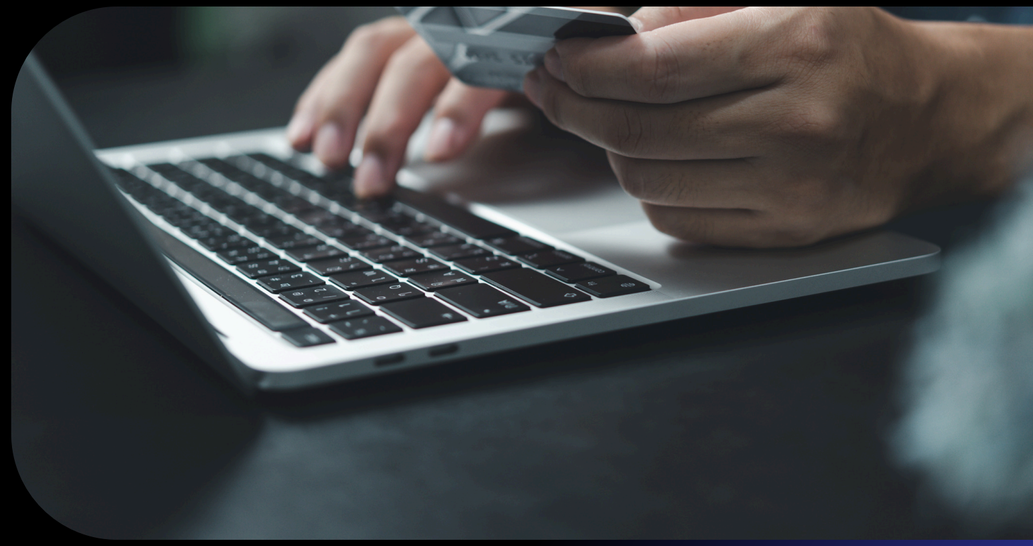


CONCLUSION & FUTURE ENHANCEMENTS

- Successfully developed a functional, user-friendly body weight calculator.
- Accurate calculations and database storage implemented.
- Health tips provided for better weight management.

Future Improvements

- Weight History Tracking (Graphical representation).
- BMI Calculation & Health Advice Integration.
- Mobile App Version for wider accessibility.



Thank **You**