**User Input**:

* Target weight.
* Duration (in days) to reach the target weight.
* Initial weight.
* Average daily activity level.
* Frequency of cheat meals (e.g., once a week, biweekly, or monthly).
* Age
* Gender
* Calorie Intakes

**Daily Maintenance and Active Calories**:

* **Maintenance Calories**: This is the number of calories the user needs to maintain their current weight. (For this Basal metabolic rate need to be calculated)
* **Active Calories**: These are calories burned through physical activities such as walking, running, or working out.

**BMR**:

Integration of Basal Metabolic Rate (BMR) calculator based on user data to estimate daily calorie needs.

**BMR Calculation**: Use a formula like the Mifflin-St Jeor equation to calculate the user's BMR:

**For men**: BMR=10×weight (kg)+6.25×height (cm)−5×age+5

**For women:** BMR=10×weight (kg)+6.25×height (cm)−5×age−161

We need to calculate BMR to keep track of the number of calories your body needs to perform basic functions, such as breathing, digesting food, and maintaining body temperature. It doesn't include strenuous physical activity like running or strength training.

**Activity Factor**:

Adjust the BMR using an activity multiplier to account for the user’s daily activity level:

* Sedentary: BMR × 1.2
* Lightly active: BMR × 1.375
* Moderately active: BMR × 1.55
* Very active: BMR × 1.725
* Super active: BMR × 1.9

**Weight Goal Calculation:**

If a user sets a target to lose X kg in Y days:

* Calculate the total required calorie deficit: X × 7700 (since 1 kg ≈ 7700 kcal).
* Break this down into a daily deficit:

**Daily Deficit=**

**Caloric Deficit Calculation**:

* Computes the daily caloric deficit, which is the difference between maintenance calories and actual caloric intake.
* Uses the user’s input for the frequency of cheat meals to adjust the average daily caloric deficit.

**Weight Loss Prediction**:

* Estimates daily weight loss based on the caloric deficit.
* Predicts target weight over time with and without cheat meals.
* Provides a comparison between real weight and predicted weight based on the user’s actual caloric intake and activity.

**Performance Analysis**:

* Tracks the difference between real weight and predicted weight.
* Indicates whether the user is on track (ahead or delayed) with respect to their weight loss goals.
* Provides feedback on progress (e.g., "Very Good," "Amazing").

### **Meal Tracking**

Users will log their meals daily, including:

* **Time of Day**: Morning, Noon, Afternoon (Pre-Workout), Night (Post-Workout).
* **Meal Description**: Detailed name of the meal.
* **Nutritional Breakdown**: Protein, carbs, fats, and total calories.

### **Performance Tracking**

Calculate performance metrics for each entry, including:

* **Real Weight vs. Actual Weight**: Comparing logged weights to predicted targets.
* **Weight Performance**: Evaluating progress against targets.
* **Days Ahead/Delayed**: Understanding weight loss timeline effectiveness.

**Analytics**

* **Progress Visualization**: Use charts and graphs to show users their weight loss trend, caloric intake versus expenditure, and progress towards their goal.
* **Suggestions and Notifications**: Provide daily reminders for users to log meals and exercise. Send suggestions if they’re over or under their daily calorie target.
* **Plateau Management**: Educate users about weight loss plateaus and adjust calorie targets if the user’s progress slows down over time.