**Macronutrients**

Macronutrients are the three main nutrients that our bodies need in large amounts: proteins, fats and carbohydrates. Each macronutrient plays a unique role in our body's functioning and getting the right balance of macronutrients is important for overall health. The balanced and varied diet that includes a mix of proteins, fats and carbohydrates is essential for good health.

When it comes to healthy eating, it's important to pay attention not only to the total amount of macronutrients you're consuming, but also to the percentages of each macronutrient in your diet. The specific macronutrient percentages that are considered "healthy" can vary depending on factors such as age, sex, activity level and health goals.

The American Heart Association recommends that adults get 15% of their daily calories from protein, 30% from fats and 55% from carbohydrates. However, someone who is trying to lose weight or build muscle may need to adjust their macronutrient percentages accordingly.

**Project:**

The code is a set of Python modules: macronutrients.py, protein.py, fat.py and carb.py, that define three classes for three types of macronutrients and an abstract base class for macronutrients. The CalculateMacronutrients class in the calculate\_macronutrients.py module uses these classes to calculate the amount of each macronutrient that someone should consume based on a daily calorie intake goal that the user provides.

When the user initializes a CalculateMacronutrients object with a daily calorie intake goal, the CalculateMacronutrients object calculates the number of calories that should come from protein, fat, and carbs based on preset percentages for each macronutrient. It then displays this information to the user.

The Protein, Fat and Carb classes are subclasses of the Macronutrients abstract base class. Each subclass has a kcal\_per\_gram method that returns the number of calories per gram for that macronutrient.

The Macronutrients abstract base class has a single abstract method called kcal\_per\_gram, which returns the number of calories per gram for a macronutrient. It also has a details method that returns a string describing the macronutrient and its calorie content per gram.

**Unit Testing**

This is a unit test code for the CalculateMacronutrients class, which was written using the Python unittest module. It contains several test methods to test the functionality of the class.