Meal Planner Requirements Specification v1.0

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Contents

Abstract

This document contains the identified requirements for the meal planner system. This document is subject to change as the project progresses. A minor version number change (e.g. 1.1 to 1.2) indicates the refinement of requirements. A major change (e.g. 1.2 to 2.0) indicates the addition or removal of requirements after they are identified through requirements elicitation.

For some use cases there are missing entries; this may be because further info is required to complete them, or it may be because the work flow is already obvious or dictated by the chosen framework (login is an example of such).

1 Domain Model & Users

There are three key user types identified in the domain. These are represented in Figure 1.

1.1 Personal Users

As the name suggest, a personal user is anyone who uses the app for managing their own nutrition. They track their own goals and requirements only. This group can be further subdivided into two groups, dubbed Average Dieter and Athletes. These two groups will have very similar (possibly identical) interaction with the system. What differentiates the two is their domain knowledge and commitment.

1.1.1 Average Dieter

The Average Dieter group represents the average person looking to lose/gain weight or eat healthily. They will have fairly loose fitness goals, such as to simply lose some weight. As such for this user the exact distribution of nutrients in a meal is likely to be of lower importance compared to the total calories, the ease of preparing the meal and the palatability of the meal. They will likely have little to no knowledge of what constitutes good nutrition, so the app needs to support this by making some decisions for them by default to ensure their diet is 'healthy'.

1.1.2 Athlete

In this context, the term athlete encompasses any user with very specific goals or users for whom correct nutrition is essential in supporting other activities. This could include runners, bodybuilders, footballers, etc. In contrast to the Average Dieter, the Athlete has specific goals and is likely to already have some understanding of nutrition.

1.2 Dieticians

Dieticians do not generate meal plans for themselves: they do it for clients. As such they have a need to manage the evital statistics and nutritional requirements of multiple clients. This could be achieved by giving them

access to the accounts of their clients (who are one of the two personal user groups) in order to generate meals for them.

2 User Management

2.1 Login & Logout

Create New Account	
Use Case Diagram(s)	Figure 2
Description	User creates a new account, registering an email account and choosing a unique username and password.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	User has no account.
Post Conditions	User has an account registered.
Rationale	

Login	
Use Case Diagram(s)	Figure 2
Description	User logs in to system, giving them access to their account.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	User is not logged in.
Post Conditions	User is logged in, denied access, or quits.
Rationale	

Logout	
Use Case Diagram(s)	Figure 2
Description	User logs out of system manually, or is logged out automatically after being inactive for a period of 15 minutes.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	User is logged in.
Post Conditions	User is logged out.
Rationale	

2.2 Personal Statistics & Goals

Enter current vital statistics	
Use Case Diagram(s)	Figure 3
Description	User enters the following vital statistics : height, weight , age and gender. They may also optionally enter body fat percentage.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	Vital statistics are unknown.
Post Conditions	New vital statistics are saved.
Rationale	These statistics are used to calculate their requirements and track their progress towards weight loss/gain goals.

Login	
Use Case Diagram(s)	Figure 3
Description	Users updates their vital statistics to reflect changes over time.
Process	
Scenarios	
Includes	Enter Vital Statistics.
Extends	
Pre Conditions	User's vital statistics are known but out of date.
Post Conditions	New statistics are saved.
Rationale	Vital statistics change over time.

Calculate Body Mass Index	
Use Case Diagram(s)	Figure 3
Description	Calculate the Body Mass Index of the user.
Process	
Scenarios	
Includes	
Extends	Enter Vital Statistics.
Pre Conditions	
Post Conditions	
Rationale	BMI is an indicator of being over/underweight. Though flawed, it can be used as an indicator of progress in weight loss/gain.

Calculate Body Fat	
Use Case Diagram(s)	Figure 3
Description	Calculate the users body fat from user provided measurements. (Note a formula must be chosen for this). Formulae used contain a mix of the already entered statistics (such as height and weight) plus other, more specific measurements.
Process	
Scenarios	
Includes	
Extends	Enter Vital Statistics
Pre Conditions	Users vital statistics have been entered and/or saved.
Post Conditions	
Rationale	

Calculate Nutritional Requirements	
Use Case Diagram(s)	Figure 3
Description	Calculate the users nutritional requirements for the day. This should at the very lest encompass the "big 4" : calories, protein, carbohydrate and fat. It should ideally also include saturated fat, sugar, fibre and salt. These 8 are the minimum required information which must legally be printed on food labelling.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	Users vital statistics have been entered and/or saved.
Post Conditions	Users nutritional requirements are known.
Rationale	Nutritional requirements are needed to generate satisfactory meals.

Calculate Nutritional Requirements	
Use Case Diagram(s)	Figure 3
Description	Calculate the users nutritional requirements for the day. This should at the very lest encompass the "big 4" : calories, protein, carbohydrate and fat. It should ideally also include saturated fat, sugar, fibre and salt. These 8 are the minimum required information which must legally be printed on food labelling.
Process	
Scenarios	
Includes	Tailor Nutritional Requirements; Save Nutritional Requirements
Extends	
Pre Conditions	Users vital statistics have been entered and/or saved.
Post Conditions	Users nutritional requirements are known.
Rationale	Nutritional requirements are needed to generate satisfactory meals.

Tailor Nutritional Requirements	
Use Case Diagram(s)	Figure 3
Description	Manually alter nutritional requirements, either to manually change the amount of given nutrients or to change the ratio of each nutrient.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	Users nutritional requirements have been entered and/or saved.
Post Conditions	Users nutritional requirements are altered
Rationale	Accurate nutritional requirements are needed to generate satisfactory meals.

Save Nutritional Requirements	
Use Case Diagram(s)	Figure 3
Description	Save nutritional requirements to be used from now on.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	Users nutritional requirements have been entered or altered.
Post Conditions	Users nutritional requirements are saved
Rationale	Nutritional requirements are needed to generate satisfactory meals.

3 Meal Generation

Search Ingredients Database	
Use Case Diagram(s)	Figure 4
Description	User searches the ingredients database, and can review the content of ingredients.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	
Post Conditions	
Rationale	Users may wish to view the content of an ingredient for reference or check to see if a certain brand or subtype of ingredient is in the database.

Specify a Meals Nutritional Requirements	
Use Case Diagram(s)	Figure 4
Description	The requirements for a meal may be specified manually or inferred from the users daily nutritional requirements.
Process	
Scenarios	
Includes	
Extends	
Pre Conditions	
Post Conditions	
Rationale	Requirements are needed to generate the meal, by setting the constraints over which to compute the meal.

Generate a Meal	
Use Case Diagram(s)	Figure 4
Description	Generate a meal from a set of specified ingredients and requirements.
Process	
Scenarios	
Includes Search Ingredients Database; Specify a Meals Nutritional Requirements.	
Extends	
Pre Conditions	
Post Conditions	
Rationale	Meal generation is the key feature of the project.

Save a Generated Meal	
Use Case Diagram(s)	Figure 4
Description	Save a generated meal to be used at a later date.
Process	
Scenarios	
Includes	
Extends	Generate a Meal
Pre Conditions	An unsaved meal has been generated.
Post Conditions	Meal is saved to user's account.
Rationale	Nutritional requirements are needed to generate satisfactory meals.

Figure 1: Users

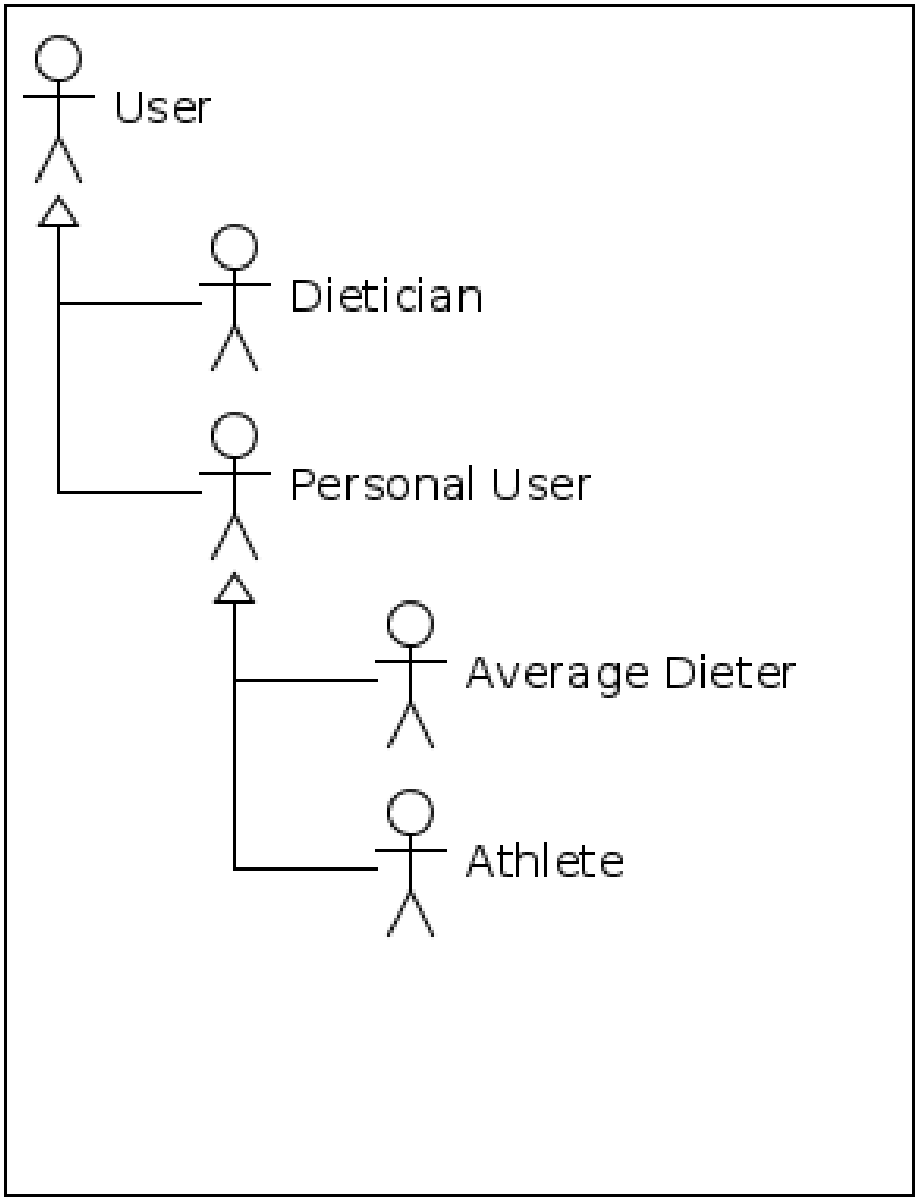

Figure 2: Login & Logout

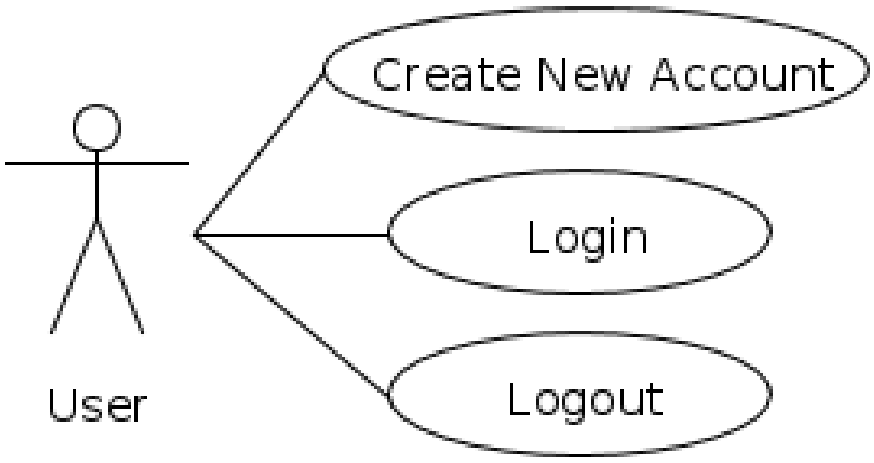

Figure 3: Personal Statistics and Goals

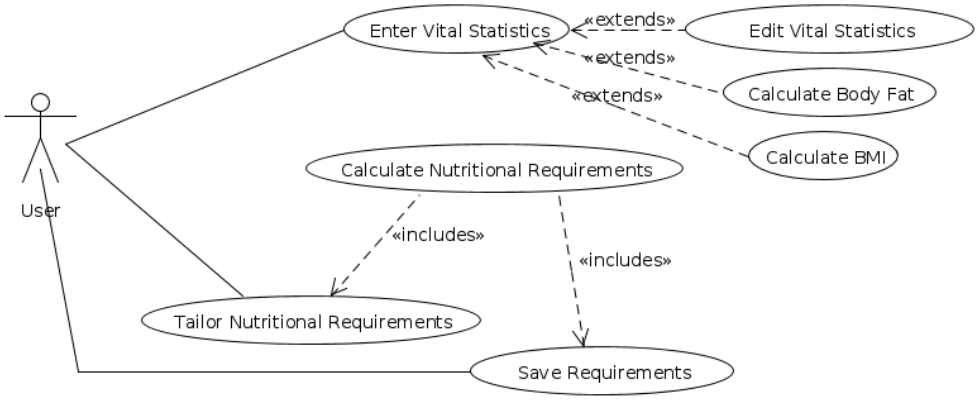

Figure 4: Meal Generation