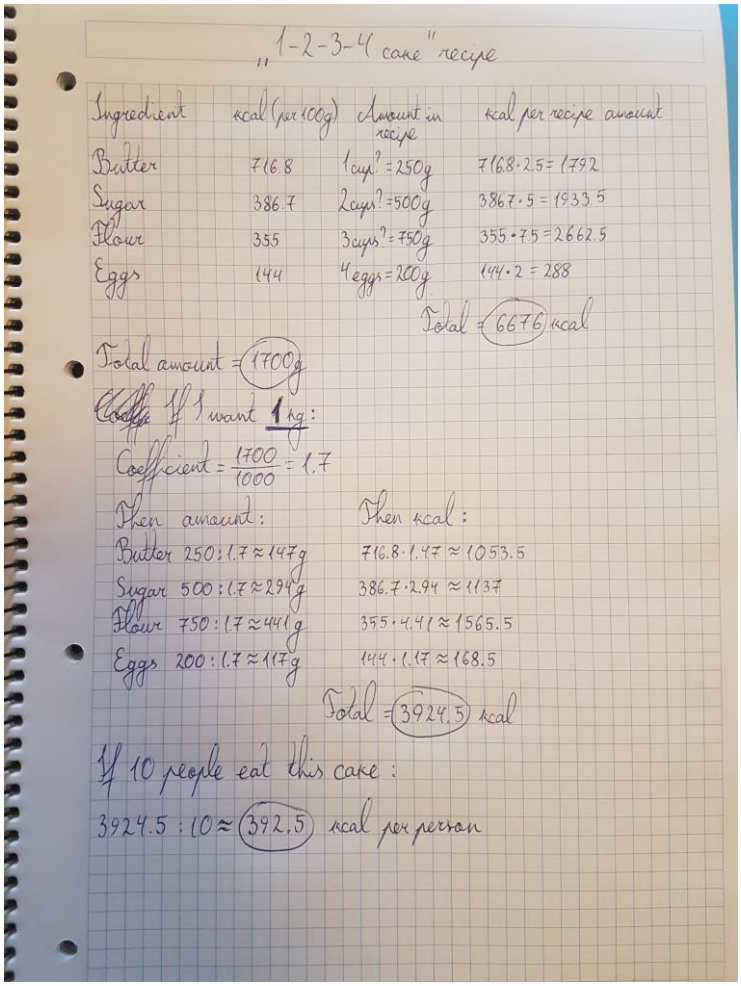
Criterion A: Planning

Calories Made Digital

Defining the Problem

My next-door neighbour Mrs Kalnina likes to live as healthy as possible. An essential part of that lifestyle is counting up the calories taken in or burned whenever she goes for a run or eats ready-made food which can be bought in supermarkets (so their calorie count is displayed). However, her favourite thing to do is cooking her own home-cooked meals. This comes with a problem: the calorie count of the meals and desserts made by her is unknown.

In August 2018, Mrs Kalnina complained to me about her problem. Currently, she keeps a little notebook with all of the ingredients and their calorie count per 100 grams written in it. Whenever she makes food at home, she takes a piece of paper, writes down the ingredients needed, their calorie count per 100 grams, the amount needed, then she calculates the calorie count for those specific amounts and, finally, she sums everything up. For all of those calculations she needs a calculator. Another problem is that the amount stated in recipes is not always stated in grams, but sometimes it is in teaspoons or



cups, which she must find the definition to on the Internet. Furthermore, whenever she wants to make, e.g., a 1 kg cake with the butter-sugar-flour-egg ratio of 1-2-3-4 respectively, she must calculate each ingredient's part of the cake, and that takes a lot of time. Attached is a page she used for calculations.

I thought that the most appropriate solution to her problem would be with the help of computer science.

In order to make the best solution with everything that Mrs Kalnina wanted, I decided to conduct an interview with her and find out what exactly my future software would entail (Appendix A).

Rationale for Proposed Solution

The most efficient and flexible solution would be a program where the content will be stored in a local database with an easy and understandable interface so that Mrs Kalnina (who is not that familiar with computers) will be able to operate it.
According to these requirements I decided to make a Java computer program because:

- Java is a free, fast and efficient programming language;
- Java has a database library which is perfect for this solution;
- Java is able to do all the calculations that the counting up of calories will require;
- Java programs can be modified to work on different platforms if another client requests that (although Mrs Kalnina would like the program only on her computer);
- Java has a graphical user interface that can be put on a home computer and be easily visible even for people with slight eyesight problems (which is relevant to Mrs Kalnina).

Word Count: 447

Success criteria:

- The program will already have some basic ingredients (eggs, flour, sugar, butter) available with their calorie count set to a default.
- Any other ingredients and their calorie count will be addable.
- The user will be able to choose from different measurements used in recipes (calories or joules for energy; grams or tablespoons or teaspoons for mass and cups for volume);
- The user will be able to input either the precise amount of mass for ingredients in the recipe or that *and* the required amount of the final food;
- The total amount of calories in a recipe will be able to be calculated from the individual ingredients and the amount of their respective calories.
- The final number of calories will be able to be divided by how many parts the food is divided into.