

COMPUTER SCIENCE TRIPOS Part IA – 2014 – Paper 2

6 Software and Interface Design (AFB)

The following is an extract from a design brief written by the client for one of the 2014 Cambridge group design projects.

What I'd like is some sort of database of recipes to which I can send queries such as “Find me something that doesn't contain cabbage or tomatoes that takes less than 30 minutes to prepare”, or “I've got kohlrabi in the veg box AGAIN, are there any recipes I haven't tried that might make something edible out of it?”, or “I've actually got a couple of hours free to cook this weekend, what was that complicated Ottolenghi recipe I flagged two weeks ago to try later?”. The database needs to cope with the fact that ingredients can have different names but mean the same thing: e.g. “flour” and “plain flour”, and that “1/4 lb” and “4oz” are the same thing and equal to “100g” (and not 113g). It would be great if once I've chosen this week's menu, it could produce a shopping list I can plug into www.myfavouritesupermarket.com, and it needs to be usable by non-engineers.

- (a) For each of the following software project phases, suggest a design model or representation that would be a helpful aid in the design process. For each of these, sketch an example to show what this model looks like, based on some part of the above design brief.

- (i) Inception phase
- (ii) Elaboration phase
- (iii) Construction phase
- (iv) Transition phase

[12 marks]

- (b) For each of the sketched examples in part (a), describe how the design work so far could be evaluated before proceeding to the next phase. [4 marks]
- (c) Choose two of the above design models, representations or evaluation methods, and explain how they would be done differently if the design project was following an agile rather than spiral project management approach. [4 marks]