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🡺 **Can recipes be considered as programs?**

Is a recipe really an algorithm to solve a problem? Programming uses sequential, iterative, and decision logic to implement an algorithm. Are those three types of logic sufficient to produce the result of a recipe? The application of an algorithm *in various environments* can be the real challenge. Systems people call those Use Cases.

Tea is the most popular drink on the planet. The algorithm/computer/robot must distinguish between making tea, drinking tea, and the phrase "Let's have tea" which usually means both.   
"Hey robot, make tea." — "Tea is made by the Camellia Sinensis plant. I'm a robot."  
"Hey robot, make me a cup of tea." — "It is impossible to make a cup from tea."  
"Hey robot, let's have tea." — "You already have tea. It's in the cupboard. Or in the Roman alphabet between S and U." And stop waking me while I'm recharging."

Assume there is a selection of different kinds of tea available for making tea.   
"Put tea into a pot or cup, add H2O at 100°C until level is 15mm from rim".   
It sounds simple but does all tea require 100°C H2O? How much tea relative to water and what are the units of measure? How long should the tea steep? Should the tea leaves be left in the pot/cup or removed after steeping? How would you make tea in your kitchen, at Seneca, camping in the wilderness during summer or the depths of winter, on the International Space Station? Is there an algorithm to make any kind of tea…anywhere…under any conditions?

Recipe can be defined as a sequence of instructions to make a certain kind of food to please those who are eating it. Moreover, recipe is series of instructions not only to make food, but to make other products, such as chemical products. Programs also can be defined as sequence of instructions to please the users of the program. Hence, recipes can be considered as programs because both fields have enough logics to help solve problems and to help those in need. Recipes contains 3 logics as programs do, which are sequential, iterative, and decision logics. Then the recipes can implement the logics to create into an algorithm.

Sequential logic can be used in recipes because to create a food or other objects the user or the person reading the recipe needs to follow the instructions of the recipe to cook a wanted food. Sometimes there could be some unexpected situations where a person skips a step or forgets to put in an ingredient. Then the result from the mistakes would turn into unwanted food and be thrown away or not satisfied. This is like a program where a user forgets to input an information, then the program outputs an error or unwanted result. In order for a chef to create a recipe of his or her food, he or she needs to go through multiple experiments and create the recipe. By undergoing many experiments, there are many mistakes made in the middle and lots of the knowledge of different ingredients are needed. Then when the perfect ingredients are found, the chef needs to test out of how to carefully handle the ingredients, which later becomes instructions to others. Same for creating a program, a programmer needs to brainstorm the ideas of how the program is going to be and later give instructions to a computer to run the code.

Iterative logic is when a process is repeated to create different results. In programming, iterations are used because a user did not input a data that is needed in the program or to run a same sequence multiple times. Similar system is implemented in recipes because when a person is making a food, it is normal for them to make mistake, such as adding one less egg or putting too much sugar. By doing so, the person needs to start all over again from beginning or from a certain point. Also, while reading recipes, the person needs to read the instructions over and over again until the food is perfectly cooked, and the person is required to repeat mixing until a certain result comes out. Thus, by having the person reading the recipe to repeat a certain process multiple time, the system is considered as an iterative logic.

Decision logic can be defined when there is a different outcome according to different situations. While cooking many situations could occur, for example, a person could drop the mixture or add in different ingredients to their taste. Hence, when those situations occur, the instruction does not change, but the result would be, and it would still pleasure the person cooking and eating. Moreover, when situation is mentioned, it could also occur in different environments, where there could be an outdoor cooking. According to the environment, recipes change slightly and would pleasure people. Compared to programs, they also contain decision algorithm implemented where a user chooses how the system flows and outputs a result. Hence, both recipe and program contain decision making situation and still pleasures the users.

Therefore, when comparing recipes with programs, both of them can be categorized in a same group. Both of them have 3 logics which makes them up and they are sequential, iterative, and decision logics. Moreover, when people use the recipe, they are pleasured and satisfied which is the similar outcome as when users finished with the program. Hence, recipes can be considered as programs.