

Logbook, Group 6

1. Inspiring set

Our brainstorming sessions when tackling this task started with the question: ‘What makes a good dessert?’ Is it the crunchiness, the sweetness, the softness, or the flavor? Or could it be that a refined combination of the majority of these attributes would ultimately generate the ideal desert?

We considered multiple possibilities for the inspiring set and, mostly influenced by our sweet tooth preference, we decided to stick with the unrivaled globally spread cookie recipes that we all know and can appreciate. Furthermore, to not deprive our generator of a multicultural approach, we decided to explore what simple recipes of cookies would look like in different areas of the world. For this reason, at the beginning of our research, we decided to focus on selecting particular recipes, no matter the origins, that would ultimately bear resemblance in some sort of pattern when it comes to the ingredients used and cooking steps.

In addition to the inspiring set, we decided that a quirky yet clever name for each individual dessert recipe would offer an appealing personalized experience. Not only that our recipe generator offers a vast variety of easy-to-make enticing dessert recipes, but it also strives to captivate the attention of its’ audience using impactful out-of-the-ordinary names. The name generator ultimately picks out three random words subtracted from three predetermined arrays that include the following: condition, description, and name of the food item in this particular order.

2. Knowledgebase

The recipes that we selected are effectively straightforward, which implies that they do not require Masterchef level cooking skills, nor extravagant machinery, or any notable special techniques. As a result, the inspiring set was adapted to fit the criteria of approachable recipes that could be attempted by any individual, with or without prior cooking experience. For this reason, the ordinary cooking supplies were defined as to include three separate indicators: amount, unit, and the actual ingredient used.

Our strategy involved using particular coefficients that would store information regarding certain qualities of the specific ingredients and what influence they might have on the palate, especially if used in substantial quantities. Equally important to this strategy was to define what attributes we should assign to specific palette preferences. Consequently, we settled on six unique attributes that accurately represent general classifications of tastes when it comes to desserts: fruitness, chocolaticity, cakeyness, satiety, oddity, and repulsivity. The terms attributed for the condition of a certain dessert maybe sound quirky at first glance, but they accurately depict some of the most impactful flavors from our inspiring set, as well as the characteristics that might be potentially incorporated in the generated recipes.

3. Genetic algorithm implementation

When it comes to the genetic algorithm, after discussing what would potentially be the right approach, we narrowed our ideas to one specific concept: rewarding & penalizing specific combinations of ingredients. Our intention was to indirectly utilize this procedure to effectively produce objectively satisfactory recipes, based on what the general population normally prefers their desserts to taste like.

As a result, we decided to incorporate within our generator the tendency of rewarding or penalizing certain behaviors. As an example, combinations of particularly unfitting ingredients would be automatically penalized, by decreasing the fitness and, in contrast, ingredients that go hand in hand together will benefit from an increase in fitness. Satiety is seen as beneficial to cake's evolution, though it may have a negative impact, when overshadowing taste values. As a result, through each of the generations, now the adapted system capably fluctuates the fitness figure, alternating and collecting only the finest of the ingredients.

4. Presentation

In terms of the presentation, we opted for an orchestrated version of a resulting recipe from one of the previous generations that emerged during one of our testing sessions. Our approach implies taking a few of the objectively superior recipes that the system generated and manually reinvigorating the simple design with a more alluring color palette and a more clean text. In addition, we intuitively designed the recipe page in such a way so as to concisely display for the potential cook the information required. The refreshed recipe pages are divided into three essential sections: time, ingredients, and directions.

5. Evaluation

Our recipe generative system contains in its rawest form an inspiring set that extracts and uses the provided knowledge to generate a novel output. Taking into account the standardized typical evaluative methods of creative systems in relation to our own creative system, we came to the conclusion that Ritchie's Empirical Criteria for Attributing Creativity could potentially prove to be an effective method, particularly for our project. The advantage of using empirical criteria for evaluating creative systems is that we can establish using a set of standardized steps if the system manages to fit into the niche target category: recipe generator.

The reason why we would prefer to use this framework for evaluating our system is that it offers a quite approachable straightforward procedure, devised by three essential constituents, based on the following: typicality, novelty, and quality. All three factors can be objectively assessed in relation to prior note-worthy systems and consequently previously produced artifacts. Furthermore, the complexity of the criteria and the intricate relationship between one another serve as a coherent and practical approach to evaluating systems that make use of predetermined inspiring sets.