# Computational Gastronomy

Assignment 2

You may use Python and Jupiter Notebook to complete the assignments and documentation.
Notes: You are responsible for backing up the data and results, which will be used for evaluation.
Follow the rubric diligently while submitting. Name the files with the question numbers.

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1. Using the data of 10,000 recipes and their ingredients obtained for Assignment 1, implement any of the the 'frequent item set mining (FISM) algorithms'.
   (a) **Provide a complete list of item sets of size one, two, and three.**   **[5]**
   (b) **List the top 20 item sets of size one, two, and three**.   **[3]**
   (c) **Define what are the 'support' & 'confidence'** in the context of item set mining.   **[2]**

2. Create size-controlled random control of the above 10,000 recipes assuming them to be a cuisine.
   (a) Create a size-controlled cuisine by making a replica of each recipe. **Plot the recipe size distribution of the original cuisine and the randomly created recipes in 10 sets.**   **[5]**
   (b) Create a size-controlled cuisine by using 'inverse transformation'. **Plot the recipe size distribution of the original cuisine and the randomly created recipes (10 times the original).**   **[5]**

Randomize cuisine 1   Randomize cuisine 100
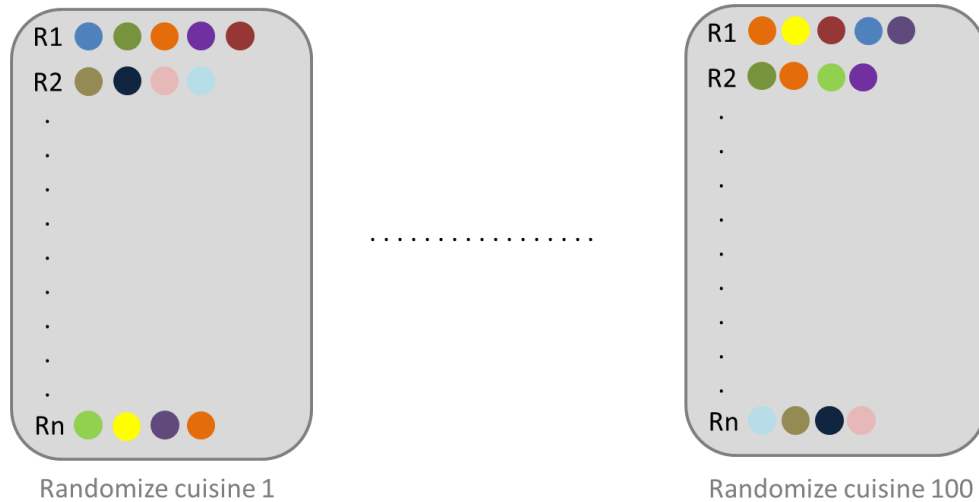
3. Create size- and ingredient frequency-controlled random control of the above 10,000 recipes assuming them to be a cuisine. Create 10 sets of random cuisines.
   (a) **Plot recipe size distribution of the original cuisine and & random recipes.**   **[5]**
   (b) **Plot frequency-rank distribution of the original cuisine & the random recipes.**   **[5]**