

Recipe Generator: Language Specification

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1 Grammar

```
<expr> := <Season><ws><Dish>
<Season> := fall | winter | spring | summer
<ws> := whitespace
<Dish> := salad
```

2 Semantics

Our programming language is designed to generate seasonal recipes with New England fruits and vegetables. The minimal version parses a simple string that users can enter via the command line. It expects a single input, a string season, and outputs a list of ingredients for a salad that belong to that season. The semantics are trivially simple because it only expects these. In order to accomplish this parsing and evaluation, we define the following primitives in our language:

Category describes the relevant food group to which an Ingredient belongs. Each ingredient (in this version) belongs to one of the following categories: Green, Vegetable, or Dressing.

Unit describes the units in which an Ingredient is measured. So far, we've defined the following units of measurement: Cup, Tablespoon, Ounce, Liter, Head, Whole, Ear, Bunch.

Season refers to the season of an Ingredient or recipe. The options (unsurprisingly) are: Fall, Winter, Summer, and Spring.

Dish refers to the dish category of a recipe. Currently, users can only choose to generate Salad, but eventually we hope to expand this to include Entree and Soup.

Ingredient is a record type that contains all the information necessary to choose an ingredient for a recipe, including a string Name, Unit unit, float Quantity (corresponds to the amount of the ingredient necessary for a serving size of one), Season list to which the ingredient belongs, and Category category.