Assignment: Problem to be solved

Create a program that will help you manage a collection of items that needs to be organized and managed. The program’s requirements are:

1. Create a collection of existing recipes and store them in a list
2. Allow a user to create a new recipe and add it to the collection
3. Allow a user to see recipes in the collection
4. Allow a user to access or edit additional items in that recipe
5. Allow a user to delete a recipe from the collection

The program must perform of all the requirements listed above and contain documentation (in the form of inline comments) explaining the design decisions. The program must also contain comments that can be used to generate API documentation of the programmatic solution for other software developers.

Task Analysis

In order to perform the above mentioned conditions, the following 3 classes will be created:

1. **Ingredient**: will model the items that will be stored in each recipe in the collection. The Ingredient class creates Ingredient objects such as name, quantities, measure. The class will have basic attributes (of numeric or string types) and basic methods (accessors/mutators, printItemDetails(), etc.).
2. **Recipe**: creates Recipe objects such as recipe name. It will start off similar to the Ingredient class, but you will increase its functionality by modifying it to accept the Ingredient objects, containing all the details stored in an Ingredient class object. The class will also expand by adding recipe-specific methods to the it.
3. **RecipeBox**: creates RecipeBox objects and contains a list of the Recipe objects. The class includes methods like addItem(), printItem(), and deleteItem() that allow you to add, print, or delete items from the collection.

In addition, a new application driver class will be created. The class will allow the user to create a new recipe and add it to the collection, see a list of items in the collection, see more information about a particular item, edit an item and delete an item from the collection.

Code Logic

When the program runs, it creates a RecipeBox to store a list of Recipe objects.

These Recipe objects, in turn, store a collection of Ingredient objects and the name of the recipe.

Ingredients can be added to and removed from a Recipe.

Once a recipe has been completed, the user can save the Recipe.

The Recipe will be added to the RecipeBox collection.

Items in the collection can be retrieved, edited or deleted.

Pseudocode for Program

DEFINE Ingredient Class

CREATE Class Objects

Name of Ingredient

nameOfIngredient;

Number of Cups

numberCups;

Number of Calories per Cup

numberCaloriesPerCup;

Number of Total Calories

totalCalories;

GET Name of the objects

getNameOfIngredient(): String

getNumberCups(): float

getNumberCaloriesPerCup(): int

getTotalCalories(): double

DEFINE the values

setNameOfIngredient(): void

setNumberOfCups(): void

setNumberCaloriesPerCup(): void

setTotalCalories(): void

ADD more ingredients

addIngredient(String): Ingredient

DEFINE Recipe Class

CREATE Class Objects

Name of Recipe

recipeName;

Number of Servings

servings;

Recipe Ingredients

recipeIngredients;

Number of Total Calories in Recipe

totalRecipeCalories;

GET Name of the objects

getRecipeName(): String

getServings(): int

getRecipeIngredients(): ArrayList

getTotalRecipeCalories(): double

DEFINE the values

setRecipeName(): void

setServings(): void

setRecipeIngredients(): void

setTotalRecipeCalories(): void

PRINT new Recipe

printRecipe(): void

ADD new Recipe

addNewRecipe(): Recipe

DEFINE RecipeBox Class

CREATE Class Objects

Entire List of Recipes

listOfRecipes;

GET Collection of Recipes

getListOfRecipes(): ArrayList

DEFINE value

setListOfRecipes(): void

PRINT List of Recipes in the collection

printAllRecipeNames(): void

PRINT Details of Recipes in the collection

printAllRecipeDetails(String): void

ADD New Recipe

addNewRecipe(): void

DELETE existing Recipe

deleteRecipeName

WRITE Main method that drives the execution of the program

CREATE New Recipe

ADD New Recipe to collection

LIST Recipes in the collection

READ Ingredients in Recipe

EDIT (add or remove) items in Recipe

DELETE item from the collection