Programmer's Guide and Report for Project 3-Dinner Plan

Source:

Header files:
- *COP3503su14_Proj3_WenlanT_main.h*
- *COP3503su14_Proj3_WenlanT_menuList.h*
- *tinystr.h*
- *tinyxml.h*

Class implementation files:
- *COP3503su14_Proj3_WenlanT_menuList.cpp*
- *tinystr.cpp*
- *tinyxml.cpp*
- *tinyxmlerror.cpp*
- *tinyxmlparser.cpp*

Application file:
- *COP3503su14_Proj3_WenlanT_main.cpp*

Makefile:
- *makefile*

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Problem Statement
This program is used to test a system for reading, naming, storing and operating on recipes. The program will maintain a current collection of recipes, a current ingredient inventory, a current equipment inventory and a current menu list. There are 22 commands with different functions in this program.

Options
Command line options allow for printing for suppression of normal prompts, for verbose prompts and for original input recipe files and inventory files. In verbose mode, the user prompt includes a short list of all commands (i.e., the numbers and a one-word description along with parameter if any) and other additional information. In silent mode, there is no prompt and there is no output to the console. Error messages are printed to standard error.

Organization of Code
This program defined four classes: Ingredient, Equipment, Recipe and MenuList.

Ingredient has three characters – quantity, unit and fooditem. To get the information, getters and setters are used for object.

Equipment has two characters – equipment and count.

Recipe has three characters – recipeTitle, ingredientsList which is a vector of ingredient and equipmentList which is a vector of equipment.

MenuList has four characters – recipeCollection, menuList, ingredientInventory and equipmentInventory.

Recipe collection a vector of recipes, which is used to store recipes form inputs. MenuList is also a vector of recipes, containing the current recipes.
The ingredientsList and equipmentList are used to store ingredients and equipment from input inventories respectively.

The main loop prompts for user input (if not silent), and reads the user input into a temporary integer variable. There are 0-22 commands. If the input is a number out of this range or not a number, an error message will be printed to console.

Functions, Methods, Procedures

MenuList has 21 functions:

inputRecipe()-open and read one or more recipe files into a current recipe collection. The input file is a cookbook file which may containing multiple recipes.
inputInventory()-open and read one or more inventory files into a current inventory
subtractInventory()-open and subtract inventory list from a file from the current inventory lists
addRecipe()-add a specific recipe from current collection to menu list
removeRecipe()-remove a specific recipe from current menu list
reset()-reset current menu list to the empty set
outputMenuList()-open and write the current menu list to a RBML file
printMenuList()-print current menu list to the console in formatted plain text
printRecipeName()-find recipe and print it to the console in formatted plain text
increaseIngredientInventoryItem()-add <item description> [<quantity>[<units>]]to the current inventory.
reduceIngredientInventoryItem ()-reduce or remove <item description> [<quantity>[<units>]]to the current inventory.
insertEquipmentInventoryItem()-add equipment item to the current inventory list
deleteEquipmentInventory()-delete equipment item from the current inventory list
printIngredientInventory()-print ingredient inventory to console in formatted plain text
printEquipmentInventory ()-print equipment inventory to console in formatted plain text
printIngredientList()-combine ingredient lists of recipes in the current menu and print the combined ingredient list to console in formatted plain text
printIngredientShoppingList ()-combine ingredient lists of recipes in the current menu, subtract the ingredient inventory list and print the missing ingredient list to console in formatted plain text
outPutIngredientShoppingList ()-combine ingredient lists of recipes in the current menu, subtract the ingredient inventory list and output the missing ingredient list to RBML ingredient list file

printEquipmentList()-combine equipment lists of recipes in the current menu and print the combined equipment list to console in formatted plain text
printEquipmentShoppingList ()-combine equipment lists of recipes in the current menu, subtract the equipment inventory list and print the missing equipment list to console in formatted plain text
outPutEquipmentShoppingList ()-combine equipment lists of recipes in the current menu, subtract the equipment inventory list and output the missing equipment list to RBML ingredient list file

The main() has the has the verobseOutput() function including a short list of commands when in verbose state. The main() also has the methods to call different states (verbose, silent and normal) using different combination of bool verbose and bool silent.

Known Bugs
1. When the ingredient without quantity in the original cookbook file, the quantity will be input as 1 rather than empty.
2. When there is a section, and two recipes following the section, the program cannot read, and will exit.
3. When there is no quantity or unit in the ingredient, the output XML file still have a tag like <quantity></quantity><unit></unit> rather than not shown.

Testing
Testing was done by using three cookbook files and 3 inventory files: cookbook.xml, cookbook2.xml, cookbook3.xml,supplies1.xml, supplies2.xml and supplie3.xml. Script of testing session follows:

```
$ ./Proj3
> 1
cookbook.xml
New recipe <cookbook.xml> loaded
> 4
Please enter the recipe name to be added:
Ants on a Stick
Recipe <Ants on a Stick> has been added to menu list!
> 4
Please enter the recipe name to be added:
Foofoo
Recipe <Foofoo> has been added to menu list!
> 4
Please enter the recipe name to be added:
Black Beans
Recipe <Black Beans> has been added to menu list!
> 4
Please enter the recipe name to be added:
Arroz con Pollo
Recipe <Arroz con Pollo> has been added to menu list!
> 8
current menuList:
Ants on a Stick
Foofoo
Black Beans
Arroz con Pollo
> 5
Pleae enter the recipe name to be removed:
Black Beans
```

```
Recipe <Black Beans> has been removed!
> 8
current menuList:
Ants on a Stick
Foofoo
Arroz con Pollo
> 7
Please enter the file name to be saved:
outMenu.xml
Save to outMenu.xml completed
> 9
Pleae enter the recipe name to be printed:
Arroz con Pollo
Arroz con Pollo:
     Ingredients:
          2  lbs  chicken
          1  cup  mojo griollo
          2    green pepper
          2    onion
          12  cloves  garlic
          10  Tbsp  olive oil
          6    bay leaf
          1    salt
          5  Tbsp  Saison completa
          1  tsp  bijol
          2  Tbsp  ground cumin
          1  cup  manzanilla olives
          3  cups  rice
          5  cups  water
     Equipment:
          large frying pan 1
          large covered pot 1
> 16
6 stalks celery
6 tbsp. peanut butter
1 cup raisins
2  ripe plantains
1  water
1 cup chicherone
2 lbs chicken
1 cup mojo griollo
2  green pepper
2  onion
12 cloves garlic
10 Tbsp olive oil
6  bay leaf
1  salt
5 Tbsp Saison completa
1 tsp bijol
2 Tbsp ground cumin
1 cup manzanilla olives
3 cups rice
5 cups water
> 19
     2 qt. pot 1
     potato masher 1
     large frying pan 1
     large covered pot 1
```

```
> 8
current menuList:
Ants on a Stick
Foofoo
Arroz con Pollo
> 6
Reset completed
> 8
No recipe in current menu list!
> 2
supplies1.xml
New inventory <supplies1.xml> added
> 3
Please enter the file name:
supplies2.xml
Subtract inventory completed
> 14
Ingredients:
     3 C. unbleached wheat blend flour
     1 can baking powder
     3 lb. unrefined sugar
     1 box coarse kosher salt
     10  free-range egg
     1 gal. hormone-free milk
     1 jar natural peanut butter
     1 bottle ketchup
     1 gal. orange juice
     1 box cheerios
     24 oz. organic vegetable oil
> 3
Please enter the file name:
supplies3.xml
Subtract inventory completed
> 15
Equipment:
     blender 1
     griddle 1
     2 qt. pot 1
     1 qt. pot 1
     10 qt. pot 1
     rice cooker 1
> 10
Please enter the <item description> to be increased
orange juice
Please enter the <quantity>:
5
Please enter the <unit> :
gal.
Item <orange juice> increased to 6 gal.
> 10
Please enter the <item description> to be increased
apple
Please enter the <quantity>:
1
Please enter the <unit> :
bag
Item <apple> inserted with 1 bag
> 11
```

```
Please enter the <item description> to be decreased
baking powder
Please enter the <quantity>:
2
Please enter the <unit> :
can
Ingredient Item <baking powder> is removed
> 11
Please enter the <item description> to be decreased
unrefined sugar
Please enter the <quantity>:
1
Please enter the <unit> :
lb.
Ingredient Item <unrefined sugar> reduced to 2 lb.
> 12
Please enter the equipment to be inserted:
Knif
Please enter the <quantity>:
3
Equipment item <knif> is inserted with count 3.
> 13
Please enter the equipment to be deleted:
rice cooker
Equipment item <rice cooker> is deleted
> 15
Equipment:
     blender 1
     griddle 1
     2 qt. pot 1
     1 qt. pot 1
     10 qt. pot 1
     knif 1
> 4
Please enter the recipe name to be added:
Ants on a Stick
Recipe <Ants on a Stick> has been added to menu list!
> 4
Please enter the recipe name to be added:
Black Beans
Recipe <Black Beans> has been added to menu list!
> 4
Please enter the recipe name to be added:
Foofoo
Recipe <Foofoo> has been added to menu list!
> 2
supplies1.xml
New inventory <supplies1.xml> added
> 17
Ingredient shopping list:
     6 stalks celery
     6 tbsp. peanut butter
     1 cup raisins
     2 cans black beans
     1  green pepper
     1  onion
     6 cloves garlic
     4 Tbsp olive oil
```

```
     4  bay leaf
     1  salt
     1 Tbsp tomato paste
     1 Tbsp Saison completa
     1 tsp ground cumin
     2  ripe plantains
     1  water
     1 cup chicherone
> 18
Please enter the file name to be saved:
ingredientsShopping.xml
Save to <ingredientsShopping.xml> completed
> 20
Equipment shopping list:
     2 qt. pot 2
     potato masher 1
> 21
Please enter the file name to be saved:
equipmentShopping.xml
<?xml version="1.0" encoding="UTF-8" ?>
<!--hi, this is the equipment shopping list-->
<equipmentList>
    <equipment>2 qt. pot</equipment>
    <equipment>potato masher</equipment>
</equipmentList>
Save to <equipmentShopping.xml> completed
>
```