Jennifer Frase

Requirements:

- Design a grocery list program
  - Make a class for the items
    - Has name, type, quantity, and price
  - User should be able to:
    - Add item
    - Remove item
    - Edit item
    - Save a list to a file
    - Read a list from a file
    - Print the list to the screen
      - Should include subtotal for each item
      - Should include the total for whole list
- Create a design before coding
- Create a test plan before coding

Design:

Initial thoughts on how to handle the spaces

Name \t type \t quantity \t price \n

Read until a tab for each item

Class item

Private variables where name and type are strings and quantity is an int and price is a double

Public functions

need get functions for each private variable

need functions that can alter the item

change price function

change amount function

main

ask if the user want to read a list from a file (done at start of program so that working with one list)

if the user wants to read a list

ask for a file name

add extension to file name

open the file

create variables for name, type, quantity, and price

while the next character isn't EOF (use peek)

while the next character isn't \t (use peek)

read character and add to name

get rid of \t in the file buffer

while the next character isn't \t (use peek)

read character and add to type

get rid of \t in the file buffer

read the quantity with >>

read the price with >>

get rid of the \n in the file buffer

close the file

do

ask the user what they want to do

add/edit an item

remove an item

print the list

quit

if the user wants to add/edit an item

call makeItem function

loop through list

if item name and type are already in the list (use name and type so that items with the same name but different packaging are different – like mac and cheese box vs cup or pint of vinegar vs gallon of vinegar)

add items quantity to odd quantity

change odd price to new price

if the item was not on the list

add it

if the user wants to remove an item

ask the user for a name and type

loop through the list

if the name and type are match to an item

save the position of the item

if there was a matching item

erase the item from the list

else

print that there was no matching item

if the user wants to print the list

loop through the list

print the name, type, amount, price

calculate the subtotal by multiplying the amount and price

print the subtotal

add the subtotal to the total

print the total

while the user doesn't want to quit

ask if the user want to save the list

if the user does want to save the list

ask for a file name

add extension to file name

open the file

loop through list

add name to file, add \t

add type, add \t

add quantity, add \t

add price, add \n

close the file

makeItem

create variable for the name, type, quantity, price

tell user how to edit an item

ask the user what name

read the name

ask the user what type

read the type

ask the user what quantity

read the amount

ask the user what price

read the price

create a new item with the above information

return the item

Testing

Prompt	Input	Expected Output	Actual Output
Do you want to read a list from a file?	N	(Nothing)	(Nothing)
Do you want to read a list from a file? What file name do you want to use?	Y list1	(Nothing)	(Nothing)

Ask to open a file that doesn't exist

What do you want to do? 1) Add/edit an item 2) Remove an item 3) Print the list 4) quit	3	(Nothing since list1 was not already created)	(Nothing)

Add/edit item prompts

Jennifer Frase

What is the item name? What is the item unit type? What is the quantity? What is the unit price?	Shoes Box 1 49.99	(Nothing)	(Nothing)

Print list

What do you want to do? 1) Add/edit an item 2) Remove an item 3) Print the list 4) quit	3	Name Type Quantity Price Subtotal Shoes Box 1 49.99 49.99 TOTAL: $49.99	Name Type Quantity Price Subtotal Shoes Box 1 49.99 49.99 TOTAL: $49.99

Add/edit item

What is the item name? What is the item unit type? What is the quantity? What is the unit price?	Hair ties Set of 5 5 3.99	(Nothing)	(Nothing)

Print list

What do you want to do? 1) Add/edit an item 2) Remove an item 3) Print the list 4) quit	3	Name Type Quantity Price Subtotal Shoes Box 1 49.99 49.99 Hair ties Set of 5 5 3.99 19.95 TOTAL: $69.94	Name Type Quantity Price Subtotal Shoes Box 1 49.99 49.99 Hair ties Set of 5 5 3.99 19.95 TOTAL: $69.94

Add/Edit

What is the item name? What is the item unit type? What is the quantity? What is the unit price?	Shoes Box 1 29.99	(Nothing)	(Nothing)

Print List

What do you want to do? 1) Add/edit an item	3	Name Type Quantity Price Subtotal Shoes Box 1 29.99 29.99	Name Type Quantity Price Subtotal Shoes Box 1 29.99 29.99

2) Remove an item 3) Print the list 4) quit		Hair ties Set of 5 5 3.99 19.95 TOTAL: $49.94	Hair ties Set of 5 5 3.99 19.95 TOTAL: $49.94

Remove Item

What is the item name? What is the unit type?	Hair ties Set of 5	(Nothing)	(Nothing)

Remove Item

What is the item name? What is the unit type?	Hair ties Set of 5	That item is not on the list.	That item is not on the list.

Save List

Do you want to save the list? What file name do you want?	Y list1	Nothing (quits)	Nothing (quits)

New run

Do you want to read a list from a file? What file name do you want to use?	Y list1	(Nothing)	(Nothing)

Print List

What do you want to do? 5) Add/edit an item 6) Remove an item 7) Print the list 8) quit	3	Name Type Quantity Price Subtotal Shoes Box 1 29.99 29.99 TOTAL: $29.99	Name Type Quantity Price Subtotal Shoes Box 1 29.99 29.99 TOTAL: $29.99

Reflections

To be honest, I didn't have any issues. I wrote it like I wanted to then added things I wanted to make it run better. However outside of that I had no issues. Most of this was repeat as I had to create a shopping cart in 161, as a result this was a very easy project. I literally coded it all in 2 hours. This makes it feel like I forgot to do something, however everything on the check list is there. What took more time was the testing, but even that was relatively sequential, as I only had to restart the program 2 times to test it all.