Design Document for the Final Team Project

CS 400 Lecture 004

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Class Summary:

Object type	Object name	Object description/purpose
class	Node	Used in tree data structures to expedite lookups on food parameters
class	Food	Contains info about each food
class	Meal	Subset of foods that user selects which represents a single meal
class	FoodList	Stores all available foods
class	FilterList	List of all applied filters
Abstract class	ButtonTemplate	Defines default button parameters (size, color)
class	LoadFoodsButton	Reads in an input file and overwrites FoodList based on the file contents. Handles validating file path from user, parsing data file, and creating Food and FoodList objects for loaded foods
class	AddFoodToFoodListButton	Adds 1 food to the food list based on gui input
class	AddFilterButton	Validates user input, and adds valid filters to FilterList
class	ClearFilterButton	Clears all filters from FilterList
class	AddFoodToMealButton	Adds 1 food to the meal list based on gui input
class	RemoveFoodFromMealButton	Removes 1 food to the meal list based on gui input
class	AnalyzeMealButton	Button to display the nutritional

		information for a MealList object
class	UserInputBox	Used to capture free text user input
enum	Nutrients	Lists out the 5 discrete nutrients for later selection (calories, fat, carbs, protein, and fiber)
enum	Comparisons	Lists out the comparison operators the user can choose from when defining a new filter (>=, <=, <, > aand ==)

Class Diagrams:

Node Class

Return Type	Method name	Parameters	Description
	Node	LinkedList IDList, Node next, Node left, Node right	Constructor
LinkedList	getIDList		Get list of IDs
Void	addIDtoList	ID	Add ID to list
Node	getNext		Get the next linked node
Void	setNext	Node	Set the next linked node
Node	getLeft		Get the left node
Node	getRight		Get the right node
Void	setRight	Node	Set the right node
Void	setLeft	Node	Set the left node

Food class

Return Type	Method name	Parameters	Description
	Food	ID, name, calories, fat, protein, carbs, fiber	constructor

String	getName	ID	Get food Name
double	getCalories	ID	Get food calories
double	getFat	ID	Get grams of fat
double	getProtein	ID	Get grams of protein
double	getCarb	ID	Get grams of carbs
double	getFiber	ID	Get grams of fiber

Meal class

Return Type	Method name	Parameters	Description
	Meal	Array of user selected foods	constructor
ArrayList	getMeal		Ordered list of foods to analyze together

FoodList class

Return Type	Method name	Parameters	Description
	FoodList		constructor
	addFood	Food	Adds a food to the food list
	clearList		Removes all foods from the food list

FilterList class

Return Type	Method name	Parameters	Description
	FilterList		constructor
	addFilter	String filter	Adds a filter to the filter list.
	clearFilterList		Removes all filters from the filter list

ButtonTemplate class

Return Type	Method name	Parameters	Description

boolean	isMouseOver	buttonX, buttonY, buttonHeight, buttonWidth	Return true if the mouse is over the given button
void	update	none	Visual refresh

LoadFoodsButton class extends ButtonTemplate

Return Type	Method name	Parameters	Description
	LoadFoodsButton	Float x, float y	constructor
	click		Perform actions that should occur when the user clicks the button

AddFoodToFoodListButton class extends ButtonTemplate

Return Type	Method name	Parameters	Description
	AddFoodToFoodList Button	Float x, float y	constructor
	click		Perform actions that should occur when the user clicks the button

AddFilterButton class extends ButtonTemplate

Return Type	Method name	Parameters	Description
	AddFilterButton	Float x, float y	constructor
	click		Perform actions that should occur when the user clicks the button

ClearFilterButton class extends ButtonTemplate

Return Type	Method name	Parameters	Description
	ClearFilterButton	Float x, float y	constructor
	click		Perform actions that

			should occur when the user clicks the button

AddFoodToMealButton class extends ButtonTemplate

Return Type	Method name	Parameters	Description
	AddFoodToMealButton	Float x, float y	constructor
	click		Perform actions that should occur when the user clicks the button

RemoveFoodFromMealButton class extends ButtonTemplate

Return Type	Method name	Parameters	Description
	RemoveFoodFromMealButton	Float x, float y	constructor
	click		Perform actions that should occur when the user clicks the button

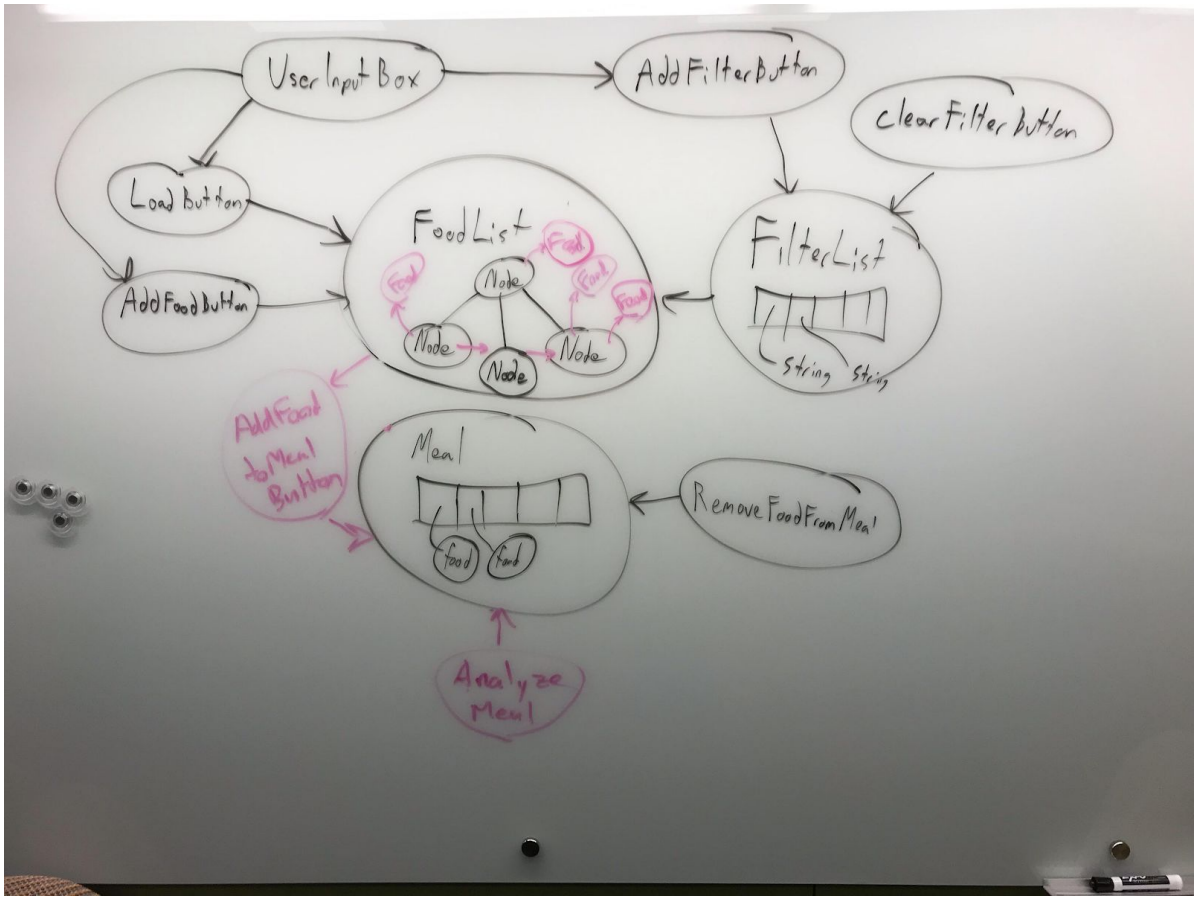
AnalyzeMealButton class extends ButtonTemplate

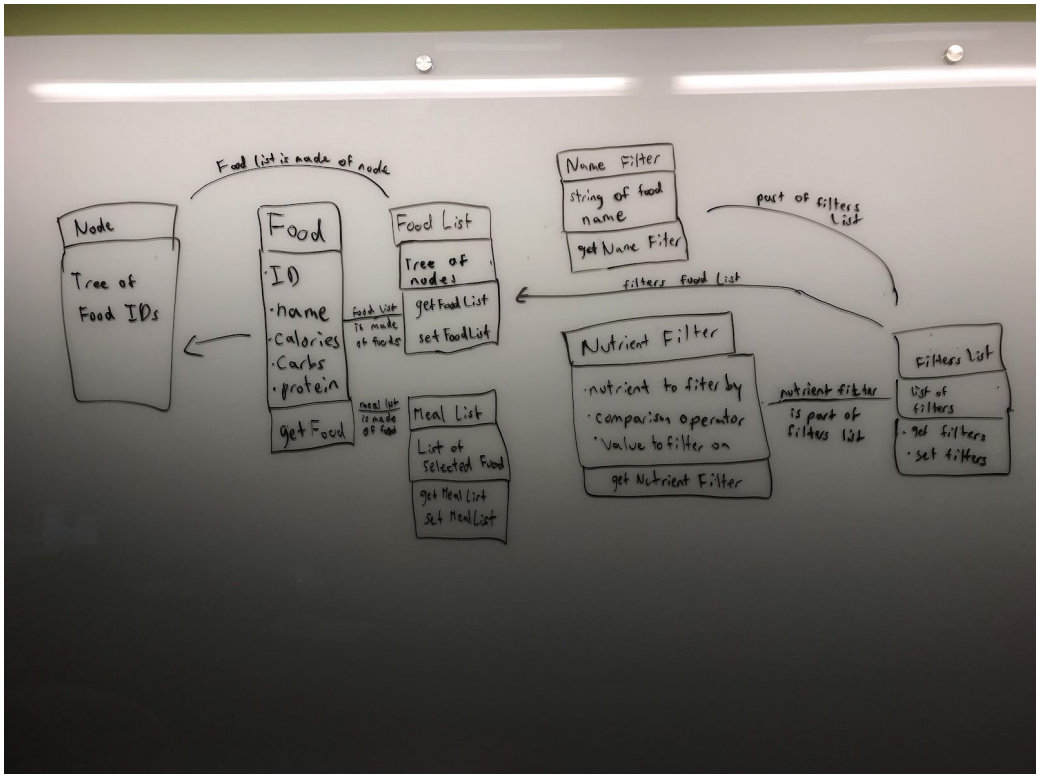
Return Type	Method name	Parameters	Description
	AnalyzeMealButton	Float x, float y	constructor
	click		Perform actions that should occur when the user clicks the button

UserInputBox class

Return Type	Method name	Parameters	Description
	UserInputBox	Float x, float y, String input	constructor
String	getInput		Get user input
Void	setInput	input	Set user input

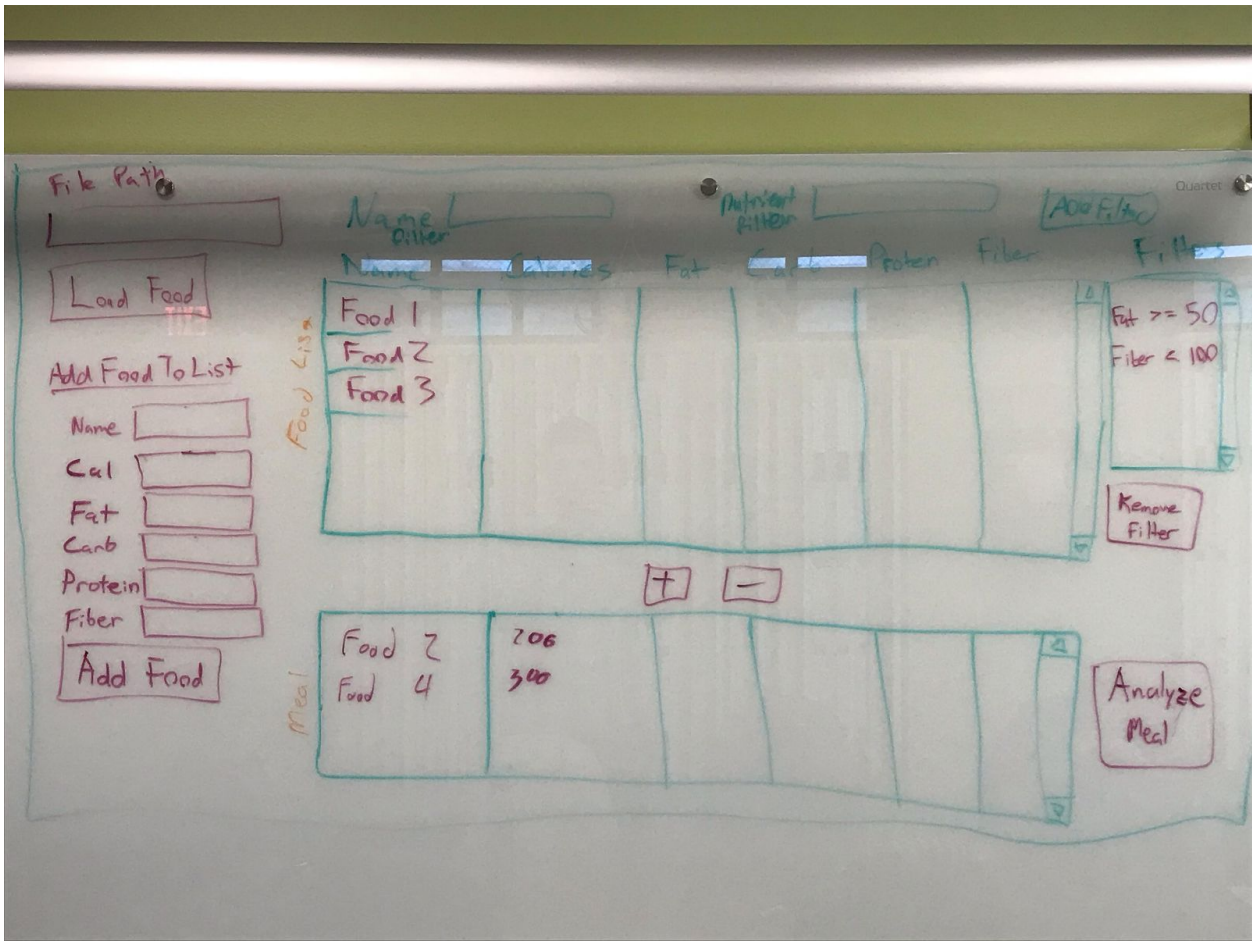
Object Diagrams:





GUI Layout Sketch:

Main Homepage



Summary Page