Basic Idea:

A program that organizes and categorizes user inputed recipes. Current plan is to use tkinter to create a nice user interface.

This project has three parts to it; The creation of the recipe, the budgeting of a recipe, and the scheduling/meal planning of multiple recipes. In consideration of the time I have available to me, I will be concentrating on the creating recipes aspect of the project, and if time allows, I will then try to implement the budgeting aspect (using beautifulsoup) as well.

More specifics:

**Overall Project Idea:**

* Have an interface that allows for user input
  + Application will open and users can click “New Recipe”, which will go to another ‘page’.
  + There will be a button that users can click which allows them to set the different fields for the recipe they are working on.
    - * Fields such as; Name, Description, Steps, Notes, Sources, Tools needed, whether or not it’s good for meal prep, nutritional info, time to make the meal (prep and cook time)
      * Ingredients field will have a few categories. Here are some of the few:
        + Spices
        + Fruit/Vegetables
        + Proteins; Meat, diary, nut, bean, tofu, other
        + ‘Special’ - there will be an option to check next to any input ingredient, that will indicate whether an ingredient is difficult to obtain/not available at normal grocery stores
  + Be able to open up different recipes that have been saved to the computer and have the capability to edit and/or view them.
  + A button will that allows users to ‘Get Costs’ which will enable the web-scraping aspect of the project.
  + Be able to view already made recipes and recipe pdfs that have been saved to the computer
* User input organized into a cohesive template of a recipe
  + That template can then be saved as a pdf to a folder on the desktop, and opened to be re-edited.
  + The recipe will be categorized based on ingredients that are, or are not in the recipe.
    - * One of the categories might be “Similar Recipes” which will put all recipes that share at least 3 spices and 2 ingredients in a category.
  + All recipes will theoretically have the ability to go into multiple categories
* \*Program has the ability to web-scrape grocery websites for ingredient costs
  + \*Potential issue is user error in spelling ingredients\* Potential fixes are:
    - * Provide a list of ‘default’ ingredients that the user can choose from
      * Figure out how to connect the ‘dictionary’ app on most computers (or at least on macs) to the program and inform the user that they’re spelling something wrong
      * \*Not minimum project potential fix suggestion\* web-scrape through a search engine and choose which ingredient it is from closest match
  + Because certain ingredients are used in only minimal amounts in a lot of recipes, some calculations will have to be done to ascertain the cost of ingredients per recipe.
    - * Cost of the actual ingredients total will be provided, along with the cost for the recipe specifically.
      * Most ingredients are sold by weight, so will have to find a way to convert most US measurements (such as cups, tbsp, tsp) to weight.
        + Requires a disclaimer that measurements/costs per measurement have a potential to be incorrect due to conversion issues
      * Due to the fact that certain ingredients (e.g. spices) can be purchased in greater amounts and last a long period of time, similarities in ingredients can be considered when categorizing recipes.
  + There will be default grocery websites to scrape in the program. When the prices of things are shown to the user, it will also show which websites had which prices.
    - * If time allows, will include an option for the default websites to be changed, or for the user to specify if they want a specific website scraped at the time of scraping.
      * Will have an option to scrape at least one ‘bulk’ website (e.g. costco) to be able to compare bulk prices.
* \*Enable the users to ‘search’ the program for a specific recipe based upon name or something it contains.
* \*Have a ‘Schedule recipes’ function. This will essentially add a Sunday-Saturday calendar which shows when the user plans to make their recipes.
  + When viewing recipes, each will have a “Schedule” button which will allow the user to pick a day and type of meal (breakfast/lunch/dinner/snack) for the recipe.
  + Program will offer a ‘Calculate budget for this week” button, which will compile a list of the ingredients from all of the recipes that have been scheduled in the week, and web-scrape in the same way it does for singular recipes.

\* if time allows indication

**Walking through an example of the program being used specifically for recipe creation**:

1. Open the program
2. Be offered three options on a screen:
   1. Create new recipe
   2. Open saved recipe
   3. Schedule recipes
3. If a. A new, similar window will open (while the other closes) with the category options. It will have fill in options for “Name” and “Description”, then show a couple columns of categories where at least one (but can choose more) from each column has to be checked in order to move on:
   1. Breakfast, Lunch, Dinner, Snack, Dessert, Other
   2. Vegan (Dairy and Meat free), Gluten-Free, Vegetarian (Meat free), Dairy-Free, Pescetarian (Fish but no meat), Other, “Fill in the blank option”
   3. (Maybe another column of Categories)
4. After choosing which categorie(s) the recipe is in, another will open with the prompt “What are your ingredients?”. There’s a search function on the left side of the window where the user can search for their ingredient. Double clicking on the ingredient will bring it to the right side of the window, where the ingredients list will compile. Each ingredient will have two drop down boxes next to it, one offers a number and the other offers a form of measurement (e.g. oz, lb, grams, tsp, tbsp, etc.). There will be a small red box to the right of an ingredient, that will turn green once the two drop down boxes are filled in. If the user tries to move on from this screen before all the ingredients have been confirmed (green box turned green) a message will pop up informing them that they haven’t completed the measurement details of all the ingredients and request for them to complete it.
   1. Ideally, the user will be able to change the ingredient details later down in the recipe making process.
5. After moving on from the ingredients screen, it will close and another window will pop up. This window will show the list of ingredients and their measurements in the leftmost side of the window as a neat column. On the right side of the window will be a large “fill in the blank” box, with a prompt above it; ‘Please write out the steps required in this recipe’.
6. Once the user has finished with the steps, that window will close as another comes up. This window will show the ingredients and steps laid out in an organized format, with two or three ‘fill in the blanks’ boxes with more prompts. These are all optional and not necessary for moving onto the next window. However, a small window will pop up when the “Next” button is clicked, asking if the user is sure that they’ve filled in everything to their wants.
   1. “Notes”
   2. “Sources”
   3. “Time to prep”
   4. “Time to cook”
   5. “Tools and appliances needed”
7. After leaving the previous window, a new window with the full recipe nicely laid out will come up. There will be a “Save” button to save it to the users desktop.