MIDS Fall 2021 Data Science W200
10-10-2021
Project 1 Proposal
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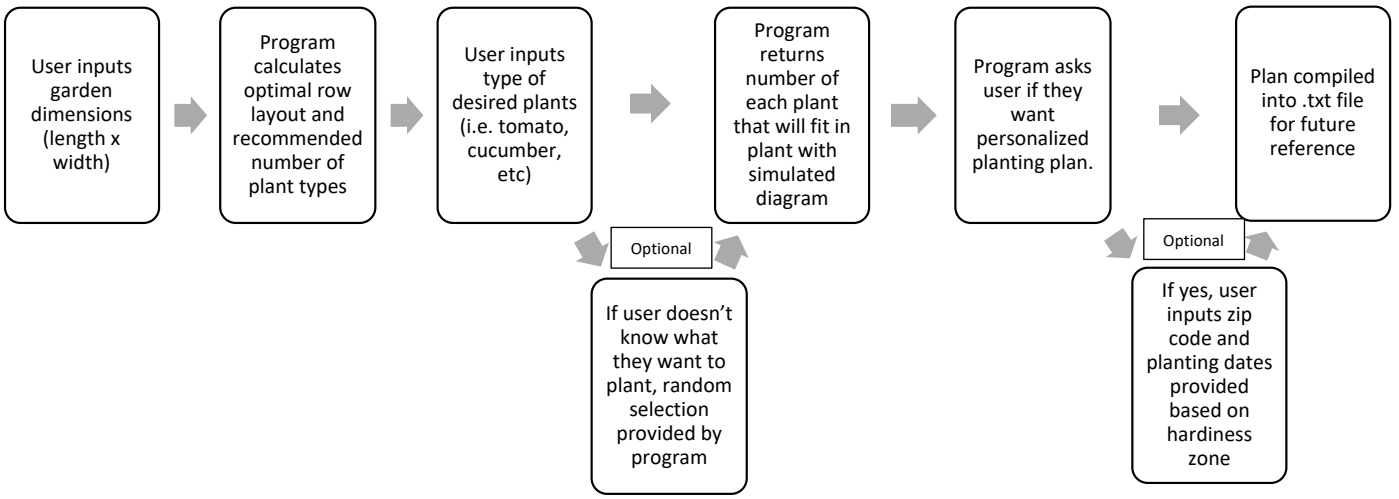
Garden Planner

Description:

A program which interacts with a user to provide a personalized vegetable garden plan. The program will consist of a user entering the size of their garden plot and their desired type of plants. Based on individual plant spacing requirements and the user's garden plot size, the program will provide a suggestion for garden layout and the number of plants that will fit. The program will then provide zone-specific planting recommendations by prompting the user to input their zip code. Seed starting, planting, and harvest dates will be recommended based on the hardiness zone. Finally, a compiled garden plan will be produced for the user containing the diagram, number of plants, and personalized planting recommendations that can be saved for future reference.

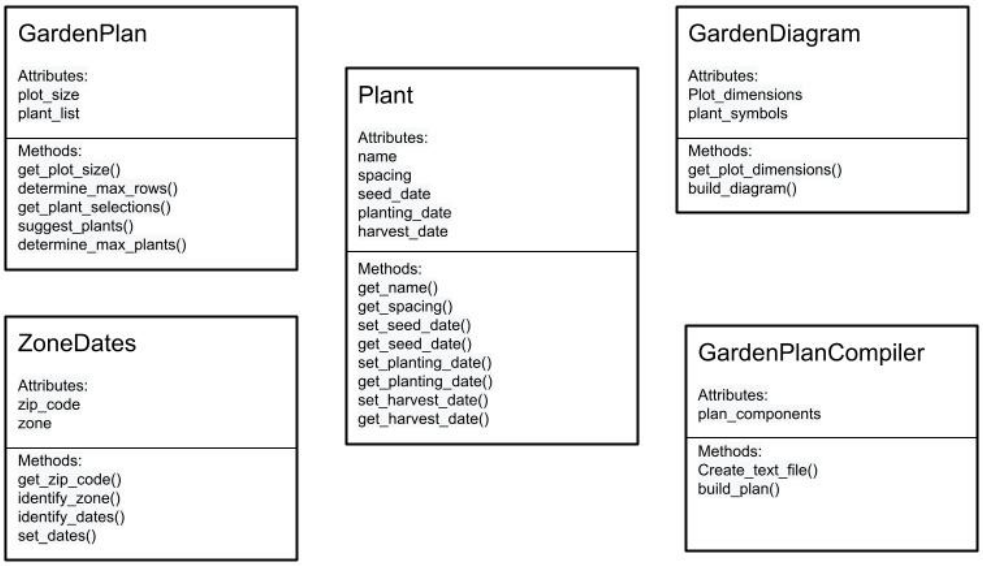
Program Workflow:



Classes:

- **GardenPlan:** Manages input from the user and logic for optimizing garden plot layout. Based on input of plot size and desired plant selections from user, will determine optimal layout and maximum number of each type of plant that can fit. An instance of this is one garden plan.

- **Plant:** Contains common properties for plants. Plant attributes will be predetermined based on plant type (i.e. tomato vs. pepper). Recommended dates for seed start, planting, and harvesting will be set if user opts to enter their zip code.
- **GardenDiagram**: Builds diagram of garden based on the specifications from the GardenPlan. Includes utilizing plot size to build diagram dimensions as well as symbols to represent each plant type. Spacing attributes per plant object will be utilized to simulate plant placement in the diagram.
- **ZoneDates:** Provides important planting date recommendations based on user zip code. If user selects to enter zip code, it will be mapped to hardiness zone (lookup via available data file or API). Once zone identified, will set the important dates for that region for each plant type user selected.
- **GardenPlanCompiler**: Compiles the garden diagram, garden plan, and personalized date recommendations into a file that is saved.



Features:

The program is interactive as users will be prompted for garden information and their preferences. If user does not know what they want to plant, a random selection of plants will be suggested by the program until the user selects an option. This program will also compile a visual representation of the garden plot to the user, will utilize a search method of a large zip code dataset (may have to do this with API), and will write plan information to a .txt file that the user can reference after the program has completed.