2XC3-TeamAssignment-Developement Plan

Title of Project: Vending Machine Simulator
Team Name: Team 13 404 Found Us
Green - Updates Changes to Development Plan

URL of the repo:
https://github.com/Sam-Scott-McMaster/the-team-assignment-team-13-404-found-us.git

High Level Description
The project that Team 13 404 Found Us wants to develop is titled Vending Machine Simulator. This project will allow users to select different options from a Vending Machine based on different categories. The user will start by choosing the category for the item they want (eg: snacks, drinks, first aid, etc). Then, with the list of options, they can choose multiple items and the quantity of those items. With the list of options, the user can only make 1 purchase at a time, and the default quantity is 1.
The context of this project is to be used by everyday customers who need a fast and simple way to buy small essential items on the go. Some characteristics of the users include general working adults or full-time university students, essentially from ages 17+, but this age is not necessarily a restriction, just an estimate of the age. The environments in which these users will be using this vending machine include universities, beside buses or trains (stations), and even in certain work locations. Furthermore, some constraints we have on our design include our user interface, as the user can't see the items in the vending machine, so they won't know which items are unavailable. We were able to display the items and quantity, so the user knows what's available.
Another constraint is the fact that the app must be developed using C. C is a low-level programming language, which constrains programmers from easily implementing certain features, such as GUI, memory management, or even finding built-in data structures like lists. Moreover, the command line typing is also a big constraint because the input will most likely be through the keyboard only. There is also a time constraint that limits the programmers to code fewer features than the project hopes to have.

Team Members

Team Member Names	**Student Numbers**	**GitHub ID's**	**Role**
Manasvi Bandi	400570531	ManasviBandi	Inventory Manager
Claira Corkery	400593241	Claira25	Payment Processor
Ritisha Perumalla	400560957	Ritisha12	Purchase Handler
Lakshmi Saranya Alamanda	400560245	saranya-445	Interface Developer

Group Members' Role Description

One section for each team member describing their role and what they will deliver. Each role should be associated with a discrete module of code. There can also be parts of the code that you all work on together.

Manasvi Bandi :
Role: Inventory Manager
Deliverables: I will be working towards delivering an Inventory Management Module that handles all the responsibilities related to the stock of the vending machine. This module will first read data through a .csv file, and then store the data to display the items to the user. The module will also update stock quantities after the user has made a purchase, and let the user know when the item requested is empty. It will first read the items from the .csv file, which contains ID, Category, Name, Price, Quantity, Quantity. Then, the module will implement a function to print all available items with their prices, categories, and remaining stock. This module would also be in charge of sorting the .csv file into different categories and then displaying the different items in the requested category.

Claira Corkery:
Role: Payment Processor
Deliverables: My role is to track the amount of money the user inputs to ensure it is the correct amount for the item they want and return the correct change. It will take what the user picked from the other .c file and look at the price of it from the .csv file. It will then take the user's input of how much money they are entering and ensure that what they put in matches the total cost. It then does the math and outputs the change back to the customer. A new function was added to ask the user to try again if they don't enter enough cash. This enters a while loop that will keep looping until they either put the right amount or say they don't want the item anymore.

Ritisha Perumalla:
Role: Purchase Handler
Deliverables: My role relates to the transaction logic behind the purchases in the vending machine. This role requires printing receipts, updating the inventory, and verifying purchases made by the user. I have to ensure that the chosen item is available and in stock. Whenever the user purchases an item, the stock of that item needs to be reduced by one, and then the price of the item should be looked at. Once the user enters the item ID, it calls a function to summarize the purchase, which displays details of the purchase. Lastly, I should call the functions made by the payment processor and create a receipt with features like change and tax, and print it to the user.

Saranya Alamanda:
Role: Interface Developer
Deliverables: This role requires handling user interaction through the menus and inputs. This includes a welcome message to the program, a main menu, category selection, and item selection (as well as quantities and getting other items). A big part of this role is the user input, storing their inputs, and using it according to their choices. This role is responsible for sending the necessary information to other classes and methods to process that information and output the end results.

Increment Lab 11.2
Target Date: November 26th, 2025

Functionalities:

Inventory Manager:
- Create the .csv file, create a usage string
- Sorting .csv file to print for the requested category

Payment Processor:
- Have the logic to take the user's input money and get the right change. Make up test cases to show functionality.

Purchase Handler:
- Update the .csv file given for every purchase
- Print a functional receipt

Interface Developer:
- Create a working program with outputs that interact with the user
- Have variables that are sent to various methods
- Add --help function, and README.md file

Increment Lab 12.2
Target Date: December 1st, 2025

What will be done:

Inventory Manager:
- Individual Survey
- Group Reflection
- Finalized .csv file which contains ID, Category, Name, Price, Quantity, Quantity
- Finalized logic which will update stock quantities after the user has made a purchase, and let the user know when the item requested is empty
- Finalized logic, which will implement a function to print all available items with their prices, categories, and remaining stock
- Finalized logic, which will sort the .csv file into different categories and then display the different items in the requested category

Payment Processor:
- Individual Survey
- Group Reflection
- Fix the logic to take in the information from the .csv and .c file
- Ensure the original logic remains functional with the new inputs from the .csv and .c files
- Create a new function that loops if the user doesn't put enough money. Allowing them the opportunity to pay again or cancel.
- Finalizing the user inputs, making sure all possible test cases are done to ensure it's working.

Purchase Handler:

- Individual Survey
- Group Reflection
- Created a new function that displays a summary of the purchase before it gets sent to the payment processor to input the money
- Print finalized receipts (proper format, title, name of items, prices)
- Proper code to update inventory (reduce number of items in inventory, check if item is available for purchase)

Interface Developer:

- Individual Survey
- Group Reflection
- Finalized user interaction, with welcome message, main menu and prompt outputs to get user input, storing these variables, working method calls
- Finalized variables for user choices and quantities