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2024 Year 12 Comp Sci

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OOP Business Client Application Project

Full Document

Alec McDonald

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Community Store Software Development Project 0

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# Part 1 – Planning

## Tasks to be done part 1.

* Brake down tasks to do.
* Outline problem.
* Problem Description.
* Write basic pseudocode of program to show core logic.
* Outline using structure chart.

## Tasks to be done part 2 Develop.

* Create something to visualise seating.
* Take bookings.
* Create receipt.
* Create way to cancel booking.

## Tasks to be done part 2 Evaluate.

* Debug program.
* Note down problems.
* Reflect on project.
* Provide sources.

## Time frame

I have 5 weeks to complete this project.

Starting week 4 term 1 and to be completed by week 8 term 1.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | = Not Started |  | = Doing |  | = Finished |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Part | Key Point | Item | Due Date | Status |
| 1 | Investigate | Project Breakdown | Term 1 Week 4 |  |
| Problem Outline | Term 1 Week 4 |  |
| Problem Description | Term 1 Week 4 |  |
| Project Timeline | Term 1 Week 5 |  |
| Design | Write Pseudocode | Term 1 Week 5 |  |
| Create Structure Charts | Term 1 Week 5 |  |
| 2 | Develop | Code ability to visualise seats | Term 1 Week 6 |  |
| Code ability to create a booking | Term 1 Week 6 |  |
| Code ability to send receipt to customer | Term 1 Week 6 |  |
| Code ability to cancel booking | Term 1 Week 6 |  |
| Evaluate | Debug Program | Term 1 Week 7 |  |
| Note down problems | Term 1 Week 7 |  |
| Reflect on project | Term 1 Week 7 |  |
| Provide sources | Term 1 Week 7 |  |

## 

## Problem Outline

The problem we are facing is that the school does not have an efficient method of handling tickets of small productions. Tickets for productions are currently sold by the customer calling the school and a receptionist takes the customer’s order and emails them their tickets. The school has requested for me to create a simple program to help assist with the selling of tickets, cancelation of tickets, sending receipts and copy of tickets to customer and creating a visual representation to see which seats are left.

## Problem Description

I think what I am going to do is split it up into 4 main functions. 1 function for receipts, 1 function for taking bookings, 1 function for cancelation of bookings and 1 function for when program is closed. These functions are going to pull and store information in multiple text files text files and/or 2 dimensional arrays. The arrays will store which seats are taken and which are free, and a text file will store which customer ordered what seat. The customer will be able to interact with the program to order their tickets. The customer will answer the prompts depending on what they want to do:

“To book a ticket type ‘Booking’.

To cancel a booking type ‘Cancel’

To end program type ‘End’”

It will then branch out to complete these specific functions from this prompt. It will only require the operator to follow the prompts that come up and type their input.

## Pseudocode

### CALLING FUNCTIONS

Display message.

“

To book a ticket type ‘Booking’.

To cancel a booking type ‘Cancel’

To end program type ‘End’

”

Ask user to input one of the above

IF Input was ‘Booking’

Call the Booking function.

ELIF Input was ‘Cancel’.

Call the Cancel function.

ELIF input was ‘End’.

Call the End function.

ELSE

Make sure it spelt correctly.

### FUNCTION RECIPT/BUY

Display message “how many seats would you like to book?”

Get user input

IF user input does not equal seats left

Display error message

ELIF user inputs is less than or equal too seats left

Display message “What seat would you like to book?”

Get user input

update array with the seat they booked

iterate through message until amount of seats they want has been booked

### FUNCTION PRICE

Ask user what category/text file want to change in

IF text file exists

Open it.

Ask for what item they want to update price for

IF item exists

Ask what they want new price to be.

IF invalid input

Tell user price input was invalid, here is example of valid input “\_\_\_\_\_”

ELSE

Update item price

ENDIF

ELSE

Tell them item does not exist type ‘list’ to get list of all items in category.

ENDIF

ELSE

Display error message and go back to start of function.

ENDIF

END FUNCTION

### FUNCTION CATALOGUE

Ask user what category the want to add item to

IF category doesn’t exist

Display invalid category type “list” to get list of all categories.

ELSE

Open text file

Ask for user to input ‘remove’ to remove item and ‘add’ to add an item.

IF input was ‘add’

Ask user what they want to add.

Add to empty spot.

Ask user what price to associate to item.

IF invalid input

Display message saying invalid input format like this “\_\_\_\_”

ELSE

Add price next to item.

ENDIF

ELIF input was ‘remove’.

Ask user what they want to remove.

IF user input invalid

Display message saying item does not exist type ‘list’ to list everything in text file.

ELSE

Remove item from list.

ENDIF

ELSE

Display error format like this: ‘\_\_\_\_’

ENDIF

ENDIF

ENDFUNCTION

# Part 2 – Coding

## Required files.

Text

Description automatically generated

## Files

### Folder:

<https://greatsoutherngrammar-my.sharepoint.com/:f:/g/personal/alec_mcdonald_student_gsg_wa_edu_au/EtwrBaHQNtdIlHEftH9pfPUBsbhvuZ22TC3IDFhs60RGiw?e=eOMvPm>

### Python:

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/Comunity%20Store%20System%201.1.py>

### Categories:

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/Clothing.csv>

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/Electronics.csv>

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/Homeware.csv>

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/Kitchenware.csv>

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/Linen.csv>

### Text Files:

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/purchaseItemFrequency.txt>

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/purchaseItemFrequencyCleaner.txt>

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/purchaseItemFrequencyTotalPrice.txt>

<https://greatsoutherngrammar-my.sharepoint.com/personal/alec_mcdonald_student_gsg_wa_edu_au/Documents/.Year%2011/Computer%20Science/Task%201/Task%201%20Code/purchaseItemOriginal.txt>

## Project code

# Importing extensions for the program to work

import tkinter as tk

from tkinter import \*

import csv

import os

import datetime

# Defining Button and Window sizes as variables

buttonHeight = 4

buttonWidth = 20

buttonSpacingX = 10

buttonSpacingY = 10

windowSize = ("400x700")

# Defining function to do all options that revolve around the category system. Contains: addCategory Function, deleteCategory Function, listCategory Function as well as the means to call each of the functions using tkinter buttons

def updateCategory():

    #Defining function to add a category to the system (adding a CSV file to the directory where this file is located)

    def addCategory():

        # Creating tkinter window

        addCategoryGui = tk.Toplevel(updateCategoryGui)

        addCategoryGui.geometry(windowSize)

        addCategoryGui.title("Category List")

        # Creating a listbox of all the categories (all the CSV files in the directory)

        csvFileList = os.listdir()

        categoryList = [f for f in csvFileList if f.endswith(".csv")]

        listbox = tk.Listbox(addCategoryGui)

        # Searching domain for files and puting them into listbox

        for file in categoryList:

            listbox.insert(tk.END, file)

        listbox.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Adding labbel under list box in same window

        addCategoryGui.title("Add Category")

        label = tk.Label(addCategoryGui, text="Enter category to be Added:")

        label.pack()

        # Adding entry window so user can type a value

        entry = tk.Entry(addCategoryGui)

        entry.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Function to write a CSV into the directory

        def buttonClick():

            # Pulling the tk.entry value into function and putting it into a variable

            addCategory = entry.get()

            # Using above variable to create a CSV with users intended name

            open(addCategory + ".csv", "w")

            # Creating a tkinter window

            buttonClickGui = tk.Toplevel(addCategoryGui)

            buttonClickGui.geometry(windowSize)

            buttonClickGui.title("Add Category")

            # Adding a label to the window

            label = tk.Label(buttonClickGui, text="The category '" + addCategory + "' has been added")

            label.pack(padx=buttonSpacingX, pady=buttonSpacingY)

            # Adding close window button to close the window

            closeWindow = tk.Button(buttonClickGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=buttonClickGui.destroy)

            closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

            # Closing unessasary windows

            addCategoryGui.destroy()

        # Adding a button to window under the entry prompt to call the buttonClick function

        button = tk.Button(addCategoryGui, text="Add", width=buttonWidth, height=buttonHeight, command=buttonClick)

        button.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Adding putton to close window

        closeWindow = tk.Button(addCategoryGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=addCategoryGui.destroy)

        closeWindow.pack()

    # Defining function to delete a category

    def deleteCategory():

        deleteCategoryGui = tk.Toplevel(updateCategoryGui)

        deleteCategoryGui.title("Delete Text File")

        deleteCategoryGui.geometry(windowSize)

        # Creating a listbox of all the categories (all the CSV files in the directory)

        csvFileList = os.listdir()

        categoryList = [f for f in csvFileList if f.endswith(".csv")]

        listbox = tk.Listbox(deleteCategoryGui)

        # Searching domain for files and puting them into listbox

        for f in categoryList:

            listbox.insert(tk.END, f)

        listbox.pack(padx=10, pady=10)

        # Defining function to remove selected category from the system (selected csv from the directory)

        def deleteSelectedCategory():

            # Setting variable as the users selection in the list box

            selection = listbox.curselection()

            # If Statement to delete the category from system (CSV from directory)

            if selection:

                categoryToDelete = listbox.get(selection[0])

                os.remove(categoryToDelete)

                listbox.delete(selection[0])

        # Button to delete the category/CSV

        deleteButton = tk.Button(deleteCategoryGui, text="Delete", width=buttonWidth, height=buttonHeight, command=deleteSelectedCategory)

        deleteButton.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Button to close the tkinter window

        closeWindow = tk.Button(deleteCategoryGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=deleteCategoryGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Defining function to listall categories in system (CSV in directory)

    def listCategory():

        # Creating tkinter window

        listCategoryGui = tk.Toplevel(updateCategoryGui)

        listCategoryGui.geometry(windowSize)

        listCategoryGui.title("Category List")

        # Creating a listbox of all the categories (all the CSV files in the directory)

        csvFileList = os.listdir()

        categoryList = [f for f in csvFileList if f.endswith(".csv")]

        listbox = tk.Listbox(listCategoryGui)

        # Searching domain for files and puting them into listbox

        for file in categoryList:

            listbox.insert(tk.END, file)

        listbox.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Adding close window button to bottom of the window

        closeWindow = tk.Button(listCategoryGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=listCategoryGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Creating a tkinter window

    updateCategoryGui = tk.Toplevel(root)

    updateCategoryGui.geometry(windowSize)

    # Adding button to call the addCategory function

    buttonAddCategory = tk.Button(updateCategoryGui, text="Add Category", width=buttonWidth, height=buttonHeight, command=addCategory)

    buttonAddCategory.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Adding button to call the deleteCategory function

    buttonDeleteCategory = tk.Button(updateCategoryGui, text="Delete Category", width=buttonWidth, height=buttonHeight, command=deleteCategory)

    buttonDeleteCategory.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Adding button to call the listCategory function

    buttonListCategory = tk.Button(updateCategoryGui, text="Category List", width=buttonWidth, height=buttonHeight, command=listCategory)

    buttonListCategory.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Adding button to close the window

    closeWindow = tk.Button(updateCategoryGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=updateCategoryGui.destroy)

    closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

# Defining function to do all options related to stock

def updateStock():

    # Defining function to add stock to a selected category/CSV

    def addStock():

        # Creating tkinter window

        addStockGui = tk.Toplevel(updateStockGui)

        addStockGui.geometry(windowSize)

        addStockGui.title("Update stock list")

        # Creating label to explain what to do.

        label = tk.Label(addStockGui, text= "Select category you wish to enter stock into")

        label.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Creating a listbox of all the categories (all the CSV files in the directory)

        csvFileList = os.listdir()

        files = [f for f in csvFileList if f.endswith('.csv')]

        listbox = tk.Listbox(addStockGui)

        # Searching domain for files and puting them into listbox

        for f in files:

            listbox.insert(tk.END, f)

        listbox.pack(padx=10, pady=10)

        # Creating a labbel in tkinter window bellow listbox

        stockAddLabel = tk.Label(addStockGui, text="Enter Item You Want To Add \n DO NOT INCLUDE: SYMBOLS OR NUMBERS")

        stockAddLabel.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Creating a entry box in tkinter in order to get a user input for items name that they want to add

        stockToAdd = tk.Entry(addStockGui)

        stockToAdd.pack(padx=10, pady=10)

        # Creating a label to explain want to enter into entry box

        stockPriceLabel = tk.Label(addStockGui, text="Enter Items Price \n DO NOT INCLUDE: SYMBOLS OR LETERS")

        stockPriceLabel.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Adding a entry box to get price user wants for the item

        stockPriceToAdd = tk.Entry(addStockGui)

        stockPriceToAdd.pack(padx=10, pady=10)

        # Defining function to write the user input to the CSV

        def addStockToCategory():

            # Creating a new tkinter window

            addStockToCategoryGui = tk.Toplevel(root)

            addStockToCategoryGui.geometry(windowSize)

            addStockToCategoryGui.title("Add item")

            # Setting variable as user selection

            selection = listbox.curselection()

            # Stores users values for latter use in other variables

            if selection:

                categoryToAddToo = listbox.get(selection[0])

                stockAddedToList = stockToAdd.get()

                priceAddedToList = stockPriceToAdd.get()

                # opening CSV in append mode and making a new line and then writing the users input into the CSV

                with open(categoryToAddToo, 'a', newline='') as file:

                    writer = csv.writer(file)

                    writer.writerow([stockAddedToList, priceAddedToList])

            # Adding a labbel to window to let the user know that the item they entered has been added to the CSV

            confirmationLabel = tk.Label(addStockToCategoryGui, text="The item '" + stockAddedToList + " $" + priceAddedToList + "' has been added to '" + categoryToAddToo)

            confirmationLabel.pack(padx=buttonSpacingX, pady=buttonSpacingY)

            # Adding a close window button

            closeWindow = tk.Button(addStockToCategoryGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=addStockToCategoryGui.destroy)

            closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Adding button to call the addStockToCategory function

        addItem = tk.Button(addStockGui, text="Add item", width=buttonWidth, height=buttonHeight, command=addStockToCategory)

        addItem.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Adding button to close the window

        closeWindow = tk.Button(addStockGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=addStockGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Defining function to delete a category/CSV

    def deleteStock():

        #Creating the tkinter window

        deleteStockGui = tk.Toplevel(updateStockGui)

        deleteStockGui.title("Deleting stock")

        deleteStockGui.geometry(windowSize)

        # Creating a listbox of all the categories (all the CSV files in the directory)

        csvFileList = os.listdir()

        files = [f for f in csvFileList if f.endswith('.csv')]

        fileListbox = tk.Listbox(deleteStockGui)

        # Searching domain for files and puting them into listbox

        for f in files:

            fileListbox.insert(tk.END, f)

        fileListbox.pack(padx=10, pady=10)

        # Defining function to open selected csv and put its contents into listbox

        def selectingCategory():

            # Setting user selection as a variable

            selection = fileListbox.curselection()

            # Checking if an item has been selected and then it stores user selected/entered values for latter use

            if selection:

                selectedFile = fileListbox.get(selection[0])

                # Oppening CSV in read mode

                with open(selectedFile, 'r') as file:

                    reader = csv.reader(file)

                    contents = [row for row in reader]

                # Creating tkinter window

                selectCategoryGui = tk.Toplevel(deleteStockGui)

                selectCategoryGui.title(selectedFile)

                selectCategoryGui.geometry(windowSize)

                # Setting contents of list box as a variable

                contentsListbox = tk.Listbox(selectCategoryGui)

                # Inserting the data in the CSV file into the list box

                for row in contents:

                    contentsListbox.insert(tk.END, row)

                contentsListbox.pack(padx=10, pady=10)

                # Function to remove everything in selected line from the CSV file

                def deletingItem():

                    # setting user selection as a variable

                    selection = contentsListbox.curselection()

                    # Checking if an item has been selected and then deleting it

                    if selection:

                        contentsListbox.delete(selection[0])

                        # Oppening selected file in write mode and deleting the selected line from the file

                        with open(selectedFile, 'w', newline='') as file:

                            writer = csv.writer(file)

                            writer.writerows(contentsListbox.get(0, tk.END))

                    # Closing the window

                    selectCategoryGui.destroy()

                # Creates button to close the window

                deleteButton = tk.Button(selectCategoryGui, text="Delete Item", width=buttonWidth, height=buttonHeight, command=deletingItem)

                deleteButton.pack(padx=10, pady=10)

        # Creates button to call the selectingCategory function

        selectButton = tk.Button(deleteStockGui, text="Select Category", width=buttonWidth, height=buttonHeight, command=selectingCategory)

        selectButton.pack(padx=10, pady=10)

        # Creats button to close window

        closeWindow = tk.Button(deleteStockGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=deleteStockGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Defining a function to change the price to users chosen amount

    def updatePrice():

        # Creates the tkinter window

        updatePriceGui = tk.Toplevel(updateStockGui)

        updatePriceGui.title("Updating price")

        updatePriceGui.geometry(windowSize)

        # Looking for files that have .csv in them and putting them in a list format

        files = [f for f in os.listdir() if f.endswith('.csv')]

        fileListbox = tk.Listbox(updatePriceGui)

        # Searching domain for files and puting them into listbox

        for f in files:

            fileListbox.insert(tk.END, f)

        fileListbox.pack(padx=10, pady=10)

        # Defining function to open the contents of the selected csv into a listbox

        def selectingCategory():

            # Setting selection as a variable

            selection = fileListbox.curselection()

            # Checking if an item has been selected and then it stores user selected/entered values for latter use

            if selection:

                selectedFile = fileListbox.get(selection[0])

                # Oppening CSV in read mode  and extracting its contents

                with open(selectedFile, 'r') as file:

                    reader = csv.reader(file)

                    contents = [row for row in reader]

                # Creating a tkinter window

                selectingCategoryGui = tk.Toplevel(updatePriceGui)

                selectingCategoryGui.title(selectedFile)

                selectingCategoryGui.geometry(windowSize)

                # Label to explain what to do

                label = tk.Label(selectingCategoryGui, text="Select item you wish to modify")

                label.pack(padx=buttonSpacingX, pady=buttonSpacingY)

                # Setting an empty list box

                contentsListbox = tk.Listbox(selectingCategoryGui)

                # Putting contents of the CSV into the listbox

                for row in contents:

                    contentsListbox.insert(tk.END, row)

                contentsListbox.pack(padx=10, pady=10)

                # Defining function to change the selected line price to new value

                def modifySelection():

                    # Setting selection as a variable

                    rowSelection = contentsListbox.curselection()

                    # Checking if a row has been selected and then it stores user selected/entered values for latter use

                    if rowSelection:

                        rowIndex = rowSelection[0]

                        row = contents[rowIndex]

                        newPrice = entry.get()

                        # Updating value in 3 row and extracting value to be used in program in the 1 row

                        row[1] = newPrice

                        item = row[0]

                        # Oppen the CSV file in  write mode and change price to users value

                        with open(selectedFile, 'w', newline='') as file:

                            writer = csv.writer(file)

                            writer.writerows(contents)

                        # Deleting contents of list box making it empty again

                        contentsListbox.delete(0, tk.END)

                        # Rewrite the list box so it has the new value in it

                        for row in contents:

                            contentsListbox.insert(tk.END, row)

                    # Creating a new tkinter window

                    modifySelectionGui = tk.Toplevel(selectingCategoryGui)

                    modifySelectionGui.geometry(windowSize)

                    modifySelectionGui.title("Price Change")

                    # Creating a labble to say the item the chose has a new price of what ever they selected

                    label = tk.Label(modifySelectionGui, text="The item '" + item + "' price has been changed to '$" + newPrice)

                    label.pack(padx=buttonSpacingX, pady=buttonSpacingY)

                    # Creates a button to close the window

                    closeWindow = tk.Button(modifySelectionGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=modifySelectionGui.destroy)

                    closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

            # Label to explain what to do

            label = tk.Label(selectingCategoryGui, text="Enter New Price \n DO NOT INCLUDE: SYMBOLS OR LETERS")

            label.pack(padx=buttonSpacingX, pady=buttonSpacingY)

            # Creates a entry widget so user can type a value

            entry = tk.Entry(selectingCategoryGui)

            entry.pack(padx=10, pady=10)

            # Creates a button to call the modifySelection function

            modifyButton = tk.Button(selectingCategoryGui, text="Modify Selection", width=buttonWidth, height=buttonHeight, command=modifySelection)

            modifyButton.pack(padx=10, pady=10)

            # Creates a button to close the window

            closeButton = tk.Button(selectingCategoryGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=selectingCategoryGui.destroy)

            closeButton.pack(padx=10, pady=10)

        # Creates a button to call the selectingCategory function

        selectButton = tk.Button(updatePriceGui, text="Select Category", width=buttonWidth, height=buttonHeight, command=selectingCategory)

        selectButton.pack(padx=10, pady=10)

        # Creates a button to close the window

        closeWindow = tk.Button(updatePriceGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=updatePriceGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Defining function to list stock in a selected file

    def listStock():

        # Creates tkinter window

        listStockGui = tk.Toplevel(updateStockGui)

        listStockGui.title("Deleting stock")

        listStockGui.geometry(windowSize)

        # Searching directory for all files with .csv at the end

        files = [f for f in os.listdir() if f.endswith('.csv')]

        fileListbox = tk.Listbox(listStockGui)

        # Searching domain for files and puting them into listbox

        for f in files:

            fileListbox.insert(tk.END, f)

        fileListbox.pack(padx=10, pady=10)

        # Defining function open the selected category/CSV

        def selectingCategory():

            # Setting selection as a variable

            selection = fileListbox.curselection()

            # Checking if an item has been selected and then it stores user selected/entered values for latter use

            if selection:

                selectedFile = fileListbox.get(selection[0])

                # Opens selected CSV in read mode

                with open(selectedFile, 'r') as file:

                    reader = csv.reader(file)

                    contents = [row for row in reader]

                # Creates tkinter window

                selectingCategoryGui = tk.Toplevel(root)

                selectingCategoryGui.title(selectedFile)

                selectingCategoryGui.geometry(windowSize)

                # Creates a empty list box

                contentsListbox = tk.Listbox(selectingCategoryGui)

                # Fills list box with contents of the CSV file

                for row in contents:

                    contentsListbox.insert(tk.END, row)

                contentsListbox.pack(padx=10, pady=10)

                # Creates button to close the window

                deleteButton = tk.Button(selectingCategoryGui, text="Close window", width=buttonWidth, height=buttonHeight, command=selectingCategoryGui.destroy)

                deleteButton.pack(padx=10, pady=10)

        # Creates a button to call the selectingCategory function

        selectButton = tk.Button(listStockGui, text="Select Category", width=buttonWidth, height=buttonHeight, command=selectingCategory)

        selectButton.pack(padx=10, pady=10)

        # Creates a button to close the window

        closeWindow = tk.Button(listStockGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=listStockGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Creates a tkinter window

    updateStockGui = tk.Toplevel()

    updateStockGui.geometry(windowSize)

    # Creates a button to call the addStock function

    buttonAddCategory = tk.Button(updateStockGui, text="Add Stock", width=buttonWidth, height=buttonHeight, command=addStock)

    buttonAddCategory.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Creates a button to call the deleteStock function

    buttonDeleteCategory = tk.Button(updateStockGui, text="Delete Stock", width=buttonWidth, height=buttonHeight, command=deleteStock)

    buttonDeleteCategory.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Creates button to call the updatePrice function

    stockButton = tk.Button(updateStockGui, text="Update Price", width=buttonWidth, height=buttonHeight, command=updatePrice)

    stockButton.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Creates a button to call the listStock function

    buttonDeleteCategory = tk.Button(updateStockGui, text="List of Stock", width=buttonWidth, height=buttonHeight, command=listStock)

    buttonDeleteCategory.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Creates a button to close the window

    closeWindow = tk.Button(updateStockGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=updateStockGui.destroy)

    closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

# Defining a function to buy items from the store

def buy():

    # Creating a tkinter window

    buyGui = tk.Toplevel(root)

    buyGui.geometry(windowSize)

    buyGui.title("Buy")

    # Searching directory for all files with .csv at the end

    files = [f for f in os.listdir() if f.endswith('.csv')]

    # Creates empty listbox

    categoriesListbox = tk.Listbox(buyGui)

    categoriesListbox.grid(row=1, column=1)

    # Searching domain for files and putting them into listbox

    for f in files:

        categoriesListbox.insert(tk.END, f)

    # Defining a function to select a category from list box

    def selectingCategory():

        # Setting selection as a variable

        selection = categoriesListbox.curselection()

        # Checking if an item has been selected and then it stores user selected/entered values for latter use

        if selection:

            selectedFile = categoriesListbox.get(selection[0])

            # Opens selected CSV in read mode

            with open(selectedFile, 'r') as file:

                reader = csv.reader(file)

                contents = [row for row in reader]

            # Clear the contents of the list box before inserting new contents

            contentsListbox.delete(0, tk.END)

            # Fills list box with contents of the CSV file

            for row in contents:

                contentsListbox.insert(tk.END, row)

    # Making a button to run the 'selectingCategory' function

    selectButton = tk.Button(buyGui, text="Select Category", width=buttonWidth, height=buttonHeight, command=selectingCategory)

    selectButton.grid(row=2, column=1)

    # Creates empty listbox

    contentsListbox = tk.Listbox(buyGui)

    contentsListbox.grid(row=3, column=1)

    # Function that adds selected item to the 'cart' listbox

    def addToCartFunction():

        # Setting user selection as usable variable

        contentsSelection = contentsListbox.curselection()

        # Adding the selected item to the 'cart' listbox

        if contentsSelection:

            selectedItem = contentsListbox.get(contentsSelection[0])

            cartListbox.insert(tk.END, selectedItem)

    # Function that removes selected item from the 'cart' listbox

    def removeFromCartFunction():

        # Setting user selection as usable variable

        cartSelection = cartListbox.curselection()

        # Removing selected item from 'cart' listbox

        if cartSelection:

           cartListbox.delete(cartSelection[0])

    # Function that is organising all values from 'cart' listbox into a usable and more managable form

    def purchaseOrganise():

        # Setting function as an empty sttring

        cartListboxString = ""

        # Extracting values from list box into a usable string

        for i in range(cartListbox.size()):

            cartListboxString += str(cartListbox.get(i)) + "\n"

        # Coping 'cartListboxString' into a txt file and then removing/replacing punctuation to make it easier latter on

        with open("purchaseItemOriginal.txt", "w") as purchaseItemOriginal:

            purchaseItemOriginal.write(str(cartListboxString.replace("'", "").replace(",", ":").replace("(", "").replace(" ", "").replace(")", "|")))

        # Setting an empty array

        wordCounts = {}

        # Oppening 2 files in read and write mode

        with open("purchaseItemOriginal.txt", "r") as purchaseItemOriginal, open("purchaseItemFrequency.txt", "w") as purchaseItemFrequency:

            # Seperating each item so we can find the frequency of each item

            for line in purchaseItemOriginal:

                words = line.strip().split("|")

                # Finding the value of 'word' in the list of words

                for word in words:

                    # Making sure dont get any empty strings in final result

                    if word != '':

                        # If the word is already in the word count it adds 1 to its value

                        if word in wordCounts:

                            wordCounts[word] += 1

                        # If word is not in the word count it adds the word into the word count with calue of 1

                        else:

                            wordCounts[word] = 1

            # Writing the items and there frequency into a text document

            purchaseItemFrequency.write(str(wordCounts))

        # Oppening 2 files in read and write mode

        with open("purchaseItemFrequency.txt", "r") as purchaseItemFrequency, open("purchaseItemFrequencyCleaner.txt", "w") as purchaseItemFrequencyCleaner:

            # Going through the original file and writing its contents to another file after removing/changing unessasary punctuation

            for line in purchaseItemFrequency:

                purchaseItemFrequencyCleaner.write(line.replace(",", "\n").replace("'", "").replace("{", "").replace("}", "").replace(":", ",").replace(" ", ""))

        # Calling the function

        purchaseMaths()

    # Function that is doing all the math to find out total price of purchase

    def purchaseMaths():

        # Oppening 2 files in read and write mode

        with open("purchaseItemFrequencyCleaner.txt", "r") as purchaseItemFrequencyCleaner, open("purchaseItemFrequencyTotalPrice.txt", "w") as purchaseItemFrequencyTotalPrice:

            # Defining the collumns and then turning the collums with numbers in them into floats

            for line in purchaseItemFrequencyCleaner:

                collumns = line.strip().split(",")

                collumnOne = collumns[0]

                collumnTwo = collumns[1]

                collumnThree = collumns[2]

                collumnTwoFloat = float(collumnTwo)

                collumnThreeFloat = float(collumnThree)

                # Finding the total price of each item that has been purchased

                itemTotalPrice = collumnTwoFloat \* collumnThreeFloat

                itemTotalPriceString = str(itemTotalPrice)

                # Condensing variables and strings into 1 variable for latter use

                newLine = collumnThree + ", " + collumnOne + ", " + itemTotalPriceString + "\n"

                # Writing new format into another text file

                purchaseItemFrequencyTotalPrice.write(newLine)

        # Opening a file in read mode

        with open("purchaseItemFrequencyTotalPrice.txt", "r") as purchaseItemFrequencyTotalPrice:

            # Setting global variables

            global subTotalPriceFloat

            global totalPriceFloat

            # Setting variable as 0

            subTotalPriceFloat = 0

            # Defining the collumns and then turning the collums with numbers in them into floats and then adding 'collumnThreeFloat' value to the 'subTotalPriceFloat' variable. It is doing this for each line

            for line in purchaseItemFrequencyTotalPrice:

                collumns = line.strip().split(",")

                collumnThree = collumns[2]

                collumnThreeFloat = float(collumnThree)

                subTotalPriceFloat += collumnThreeFloat

            # Finding the total price after tax

            totalPriceFloat = round(subTotalPriceFloat \* 1.1)

        # Calling the function

        customerRecipt()

    # Function that creates window to make sure user is ready to purchase the items.

    def continueToCheckout():

        global continueToCheckoutGui

        # Creating tkinter window

        continueToCheckoutGui = tk.Toplevel(buyGui)

        continueToCheckoutGui.geometry(windowSize)

        continueToCheckoutGui.title("Continue To Checkout")

        # Creating empty listbox

        checkoutListbox = tk.Listbox(continueToCheckoutGui)

        checkoutListbox.pack()

        # Filling list box with items customer wishes to purchase

        for item in cartListbox.get(0, tk.END):

            checkoutListbox.insert(tk.END, item)

        # Creates a button to close the window if they wish to add/remove stuff from cart

        closeWindow = tk.Button(continueToCheckoutGui, text="Back To Cart", width=buttonWidth, height=buttonHeight, command=continueToCheckoutGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Creates button to call a function

        sendToReciptButton = tk.Button(continueToCheckoutGui, text="Confirm Purchase And \n Print Recipt", width=buttonWidth, height=buttonHeight, command=purchaseOrganise)

        sendToReciptButton.pack(padx=10, pady=10)

    # Funcion to find out user name to make recipt

    def customerRecipt():

        # Making tkinter window

        customerReciptGui = tk.Toplevel(buyGui)

        customerReciptGui.geometry(windowSize)

        customerReciptGui.title("Making Receipt")

        # Adding a label to explain what user should enter

        label = tk.Label(customerReciptGui, text="Enter Customer Name")

        label.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Adding entry box so user can enter the customers name

        customerName = tk.Entry(customerReciptGui)

        customerName.pack(padx=10, pady=10)

        # Function that is making recipt with all its details

        def makeRecipt():

            # Opening text file in read mode and setting its contents as a variable

            with open("purchaseItemFrequencyTotalPrice.txt", "r") as purchaseItemFrequencyTotalPrice:

                purchasedItems = purchaseItemFrequencyTotalPrice.read()

            # Getting name from the entry box and setting it as usable variable

            customerNameToReceipt = customerName.get()

            # Setting curent date and time that the recipt is made

            currentDateTime = datetime.datetime.now().strftime("%Y-%m-%d\_%H-%M-%S")

            # Joining the 2 variables together

            cutomerNameAndTime = customerNameToReceipt + " " + currentDateTime

            # Turning the subtotal and the total into strings

            subTotalPriceStr = str(subTotalPriceFloat)

            totalPriceStr = str(totalPriceFloat)

            # Creating a text file with the customers name and the date and time the recipt was made as its name. It then writes all values required into the text file.

            with open(cutomerNameAndTime + ".txt", "w") as newReceipt:

                newReceipt.write("Community Store\n" +

                                "\n" +

                                "Customer: " + customerNameToReceipt + "\n" +

                                "\n" +

                                "Date & Time: " + currentDateTime + "\n" +

                                "\n" +

                                "Amount, Item, Price\n" +

                                purchasedItems +

                                "\n" +

                                "SUBTOTAL: $" + subTotalPriceStr + "\n" +

                                "\n" +

                                "TAX $10.00% ON $"+ subTotalPriceStr + "\n" +

                                "\n" +

                                "TOTAL: $" + totalPriceStr)

            # Closing all unessasary windiows

            customerReciptGui.destroy()

            continueToCheckoutGui.destroy()

            buyGui.destroy()

        # Creating tkinter button to call a function

        ReceiptButton = tk.Button(customerReciptGui, text="Write New Receipt", width=buttonWidth, height=buttonHeight, command=makeRecipt)

        ReceiptButton.pack(padx=buttonSpacingX, pady=buttonSpacingY)

        # Creating a tkinter button to close the GUI

        closeWindow = tk.Button(customerReciptGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=customerReciptGui.destroy)

        closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

    # Creates button to call a function

    addToCart = tk.Button(buyGui, text="Add To Cart", width=buttonWidth, height=buttonHeight, command=addToCartFunction)

    addToCart.grid(row=4, column=1)

    label = tk.Label(buyGui, text="                        ")

    label.grid(row=1, column=2)

    # Creates an empty listbox

    cartListbox = tk.Listbox(buyGui)

    cartListbox.grid(row=1, column=3)

    # Creates button to call a function

    removeFromCart = tk.Button(buyGui, text="Remove From Cart", width=buttonWidth, height=buttonHeight, command=removeFromCartFunction)

    removeFromCart.grid(row=2, column=3)

    # Creates button to call a function

    purchaseButton = tk.Button(buyGui, text="Continue To Checkout", width=buttonWidth, height=buttonHeight, command=continueToCheckout)

    purchaseButton.grid(row=3, column=3)

    # Creats button to close the window

    closeWindow = tk.Button(buyGui, text="Close Window", width=buttonWidth, height=buttonHeight, command=buyGui.destroy)

    closeWindow.grid(row=4, column=3)

# Creates original tkinter window and creates the buttons to run the rest of the program

root = tk.Tk()

root.geometry(windowSize)

# Creates button to call the updateCategory function

categoryButton = tk.Button(root, text="Category Options", width=buttonWidth, height=buttonHeight, command=updateCategory)

categoryButton.pack(padx=buttonSpacingX, pady=buttonSpacingY)

# Creates button to call the updateStock function

stockButton = tk.Button(root, text="Stock Options", width=buttonWidth, height=buttonHeight, command=updateStock)

stockButton.pack(padx=buttonSpacingX, pady=buttonSpacingY)

# Crearts button to call the buy function

buyButton = tk.Button(root, text="Buy", width=buttonWidth, height=buttonHeight, command=buy)

buyButton.pack(padx=buttonSpacingX, pady=buttonSpacingY)

# Creates button to close the program

closeWindow = tk.Button(root, text="Close Window", width=buttonWidth, height=buttonHeight, command=root.destroy)

closeWindow.pack(padx=buttonSpacingX, pady=buttonSpacingY)

# Starts event loop (looking for user events such as button presses)

root.mainloop()

# Part 3 – Evaluation

## Problems & Improvements

* When entering new items, the program does not stop users from typing symbols, numbers, and letters in places there not meant to be. Does not break program and only creates inconvenience.
* I can improve the look of the program with more time along with making it easier to interact with, quality of life things. The program runs successfully, and I have not encountered any fatal error that stop or break the program.

## Developer Summary

I feel after looking back through part 1 and 2 requirements that I have satisfied all points that the program and planning should meet. The program runs flawlessly completing all parameters set out by the friend who requested it. The planning for the program meets all required parameters as well and I believe it will be useful tool in the community store future.

## Sources

*Chat GPT*.

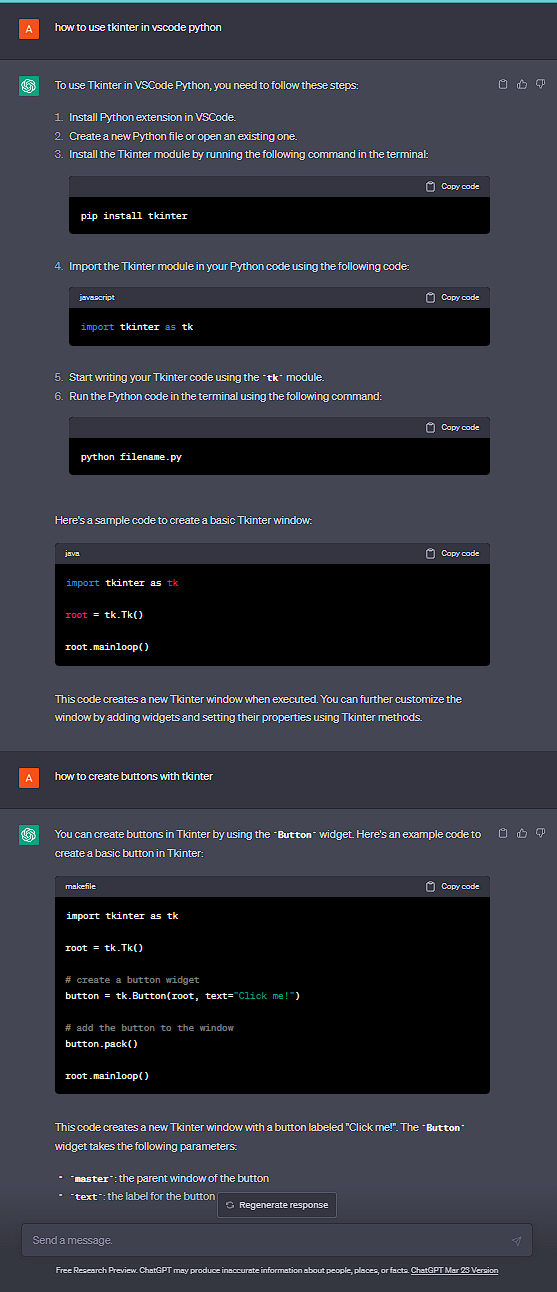
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## Chat GPT Conversation.

A screenshot of a computer screen

Description automatically generated with medium confidence

A screenshot of a computer

Description automatically generated with medium confidenceA screenshot of a computer

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Description automatically generated­­­­­