Objectives:

* Creating array Lists, adding & removing items from a list, sum, and average numbers from a list.
* Creating a Tkinter using arrays and multiple forms.

Please submit this document for grading when completed… Please work in groups.

**There are 5 Challenge Exercises, each worth 20%**

Tuples are **used to store multiple items in a single variable**.

**Project #1** (creating lists). A list is a container that can hold character or number values. Instead of having to declare multiple variables, we can use one variable and assign multiple parameters.

Text

Description automatically generated

Specifying which number in a list to print using indexes, notice the 0-index pointing to number 2.

Text

Description automatically generated

|  |
| --- |
| Values = 2 4 6 8 10 |
| Indexes = 0 1 2 3 4 |
|  |

Sum the list of numbers using a for loop

Text, letter

Description automatically generated

**Project #2** (creating lists, with input values and outputting the list to a text file)

Text

Description automatically generatedGraphical user interface, text, application

Description automatically generated

Pass the name to the list

**Project #3** (creating list box using Tkinter)

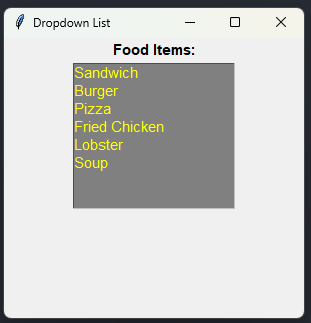
Text

Description automatically generatedText

Description automatically generated

**Challenge Exercise #1: add your three favorite food items to the list box.**

**#1 Print screen the running application with the code below here.**

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Code:

from tkinter import \*

win = Tk()

win.title("Dropdown List") #Label title for window

win.geometry("300x280")

listbox = Listbox(win, height = 8, width= 20, bg = "grey", activestyle = "dotbox", font = "Helvetica 11", fg = "yellow")

label = Label(win, text = "Food Items:", font = "Arial 11 bold", justify="left")

label.pack()

listbox.insert(1, "Sandwich")

listbox.insert(2, "Burger")

listbox.insert(3, "Pizza")

listbox.insert(4, "Fried Chicken")

listbox.insert(5, "Lobster")

listbox.insert(6, "Soup")

listbox.pack()

win.mainloop()

**Project #4** (creating a list box using Tkinter and Selecting from it)

Graphical user interface, text, application

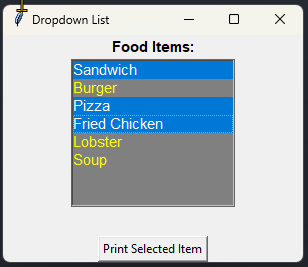
Description automatically generatedGraphical user interface, text

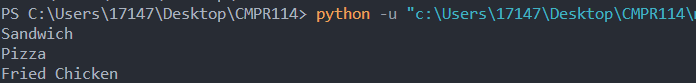
Description automatically generated

**Challenge Exercise #2:** continuing with project #3, print the food items on the console.

**#2 Print screen the running application with the code below here.**

**#2 Print screen the running application with the code below here.**





Code:

from tkinter import \*

def create\_window():

win = Tk()

win.title("Dropdown List") #Label title for window

win.geometry("300x320")

listbox = Listbox(win, height = 8, width= 20, bg = "grey", activestyle = "dotbox", font = "Helvetica 11", fg = "yellow", selectmode=MULTIPLE)

label = Label(win, text = "Food Items:", font = "Arial 11 bold", justify="left")

label.pack()

listbox.insert(1, "Sandwich")

listbox.insert(2, "Burger")

listbox.insert(3, "Pizza")

listbox.insert(4, "Fried Chicken")

listbox.insert(5, "Lobster")

listbox.insert(6, "Soup")

listbox.pack()

def print\_list():

for i in listbox.curselection():

print(listbox.get(i))

btn = Button(win, text = "Print Selected Item", command = print\_list)

btn.pack(side = "bottom")

win.mainloop()

def main():

create\_window()

main()

**Project #5:** *Replacing* an old item in a list with a new item.

Text

Description automatically generated

**Project #6:** This program will demonstrate how to insert and remove items in a list, and the total and average number of items in a list.

Text

Description automatically generatedText

Description automatically generated with medium confidence

**Challenge Exercise #3:** continuing with project #6, the total function, output the numbers list to a text file.

**#3 Print screen the running application with the code below here.**



Code:

def total():

numbers = [1,2,3,4,5,6,7,8,9,10]

sum = 0

for num in numbers:

sum+=num

average = sum / len(numbers)

print(f"The total is {sum} and the average is {average:,.2f}")

file = open("C:\\Users\\17147\\Desktop\\CMPR114\\m3\\numbers.txt", "w")

file.write(" ".join(str(e) for e in numbers) + "\n")

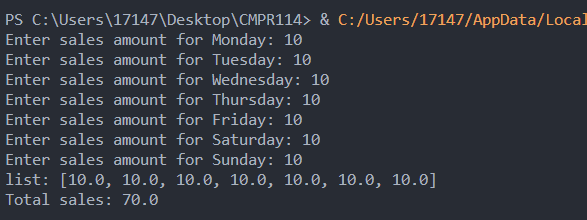
file.write(f"The total is {sum} and the average is {average:,.2f}")

file.close

total()

**Challenge Exercise #4:** TOTAL SALES APP: Design a program that asks the user to enter a store’s sales for each day of the week. The amount should be stored on a list. Use a loop to calculate the total sales for the week and display the result. Plus output the results into a text file as well as the console.

**#4 Print screen the running application with the code below here.**



Code:

week = ["Monday","Tuesday","Wednesday","Thursday","Friday","Saturday","Sunday"]

sales = []

total = 0

for day in week:

salesamt = float(input(f"Enter sales amount for {day}: "))

total+=salesamt

sales.append(salesamt)

print(f"list: {sales}")

msg = f"Total sales: {total}\n"

print(msg)

file = open("C:\\Users\\17147\\Desktop\\CMPR114\\m4\\Sales.txt", "w")

file.write(msg)

file.close

**Project #7**

**Using Tkinter with arrays and using multiple forms.**

A computer screen with colorful text

Description automatically generatedA computer screen shot of a program

Description automatically generatedA computer screen shot of a program

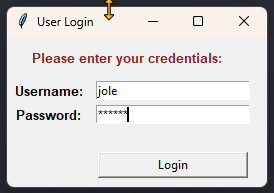
Description automatically generatedA computer screen shot of a program

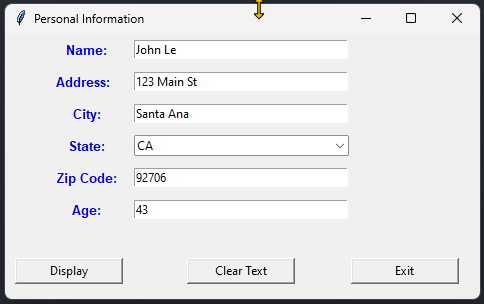
Description automatically generatedA screen shot of a computer

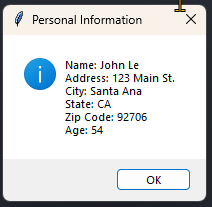
Description automatically generated

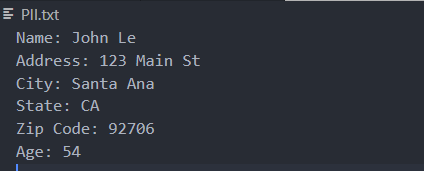
**Challenge Exercise #5:** Continuing with project #7, create the *zip code*, and *age* entries, and then output the contents to a text file somewhere on your computer.

**#5 Print screen the running application with the code below here with the OPEN text file. (Be sure to enter 2 entries).**









Code:

import tkinter as tk

from tkinter import ttk

from tkinter import messagebox

def main():

def login\_user():

username = txtUserName.get()

password = txtPassword.get()

if username == "jole" and password == "pwd123":

#messagebox.showinfo(title="Welcome", message="Successful login.")

entry\_win.deiconify()

login\_win.withdraw()

else:

messagebox.showerror(title="Invalid login", message="Username or Password is not correct. Try again")

txtUserName.delete(0, tk.END)

txtPassword.delete(0, tk.END)

txtUserName.focus\_set()

def display\_data():

name = txtName.get()

address = txtAddress.get()

city = txtCity.get()

state = cmbState.get()

zipcode = txtZipcode.get()

age = txtAge.get()

msg = f"Name: {name}\nAddress: {address}\nCity: {city}\nState: {state}\nZip Code: {zipcode}\nAge: {age}\n"

messagebox.showinfo(title="Personal Information", message=msg)

#Write to file

file = open("C:\\Users\\17147\\Desktop\\CMPR114\\m4\\PII.txt", "w")

file.write(msg)

file.close

def clear\_textbox():

txtName.delete(0, tk.END)

txtAddress.delete(0, tk.END)

txtCity.delete(0, tk.END)

cmbState.set("")

txtZipcode.delete(0, tk.END)

txtAge.delete(0, tk.END)

def exit\_win():

entry\_win.quit()

entry\_win.destroy()

login\_win.quit()

login\_win.destroy()

#Set State dropdown values

states = ['AK','AL','AR','AZ','CA','CO','CT','CZ','DC','DE','FL','GA','GU','HI','IA','ID',

'IL','IN','KS','KY','LA','MA','MD','ME','MI','MN','MO','MS','MT','NC','ND','NE',

'NH','NJ','NM','NV','NY','OH','OK','OR','PA','PR','RI','SC','SD','TN','TX','UT',

'VA','VI','VT','WA','WI','WV','WY']

#Login Window

login\_win = tk.Tk()

login\_win.geometry("260x150")

login\_win.title("User Login")

lblHeader = tk.Label(login\_win, text="Please enter your credentials: ", font="Arial 10 bold", fg="#8B2323", justify="center")

lblHeader.grid(row=0, column=0, pady=10, columnspan=3)

lblUserName = tk.Label(login\_win, text="Username: ", font="Arial 10 bold", width=10)

lblUserName.grid(row=1, column=0, padx=1, pady=1)

#lblUserName.pack()

txtUserName = tk.Entry(login\_win, width=25)

txtUserName.grid(row=1, column=1, padx=1, pady=1)

#txtUserName.pack()

lblPassword = tk.Label(login\_win, text="Password: ", font="Arial 10 bold")

lblPassword.grid(row=2, column=0, padx=1, pady=1)

#lblPassword.pack()

txtPassword = tk.Entry(login\_win, width=25, show="\*")

txtPassword.grid(row=2, column=1, padx=1, pady=1)

#txtPassword.pack()

lblSpace = tk.Label(login\_win, text=" ", font="Arial 10 bold")

lblSpace.grid(row=3, column=0, padx=1, pady=1)

btnSubmit = tk.Button(login\_win, text="Login", command=login\_user, width=20)

btnSubmit.grid(row=4, column=1, padx=1, pady=1)

#Personal Data Entry Window

entry\_win = tk.Tk()

entry\_win.geometry("475x265")

entry\_win.title("Personal Information")

entry\_win.withdraw()

lblName = tk.Label(entry\_win, text="Name: ", font="Arial 10 bold", fg="#0000CD", width=10)

lblName.grid(row=0, column=0, padx=1, pady=5, sticky="ne")

txtName = tk.Entry(entry\_win, width=35)

txtName.grid(row=0, column=1, padx=0, pady=5)

txtName.focus\_set()

lblAddress = tk.Label(entry\_win, text="Address: ", font="Arial 10 bold", fg="#0000CD", width=10)

lblAddress.grid(row=1, column=0, padx=5, pady=5, sticky="ne")

txtAddress = tk.Entry(entry\_win, width=35)

txtAddress.grid(row=1, column=1, padx=1, pady=5)

lblCity = tk.Label(entry\_win, text="City: ", font="Arial 10 bold", fg="#0000CD", width=10)

lblCity.grid(row=2, column=0, padx=1, pady=5, sticky="ne")

txtCity = tk.Entry(entry\_win, width=35)

txtCity.grid(row=2, column=1, padx=1, pady=5)

lblState = tk.Label(entry\_win, text="State: ", font="Arial 10 bold", fg="#0000CD", width=10)

lblState.grid(row=3, column=0, padx=1, pady=5, sticky="ne")

cmbState = ttk.Combobox(entry\_win, width=32, values=states)

cmbState.grid(row=3, column=1, padx=1, pady=5)

lblZipcode = tk.Label(entry\_win, text="Zip Code: ", font="Arial 10 bold", fg="#0000CD", width=10)

lblZipcode.grid(row=4, column=0, padx=1, pady=5, sticky="ne")

txtZipcode = tk.Entry(entry\_win, width=35)

txtZipcode.grid(row=4, column=1, padx=1, pady=5)

lblAge = tk.Label(entry\_win, text="Age: ", font="Arial 10 bold", fg="#0000CD", width=10)

lblAge.grid(row=5, column=0, padx=1, pady=5, sticky="ne")

txtAge = tk.Entry(entry\_win, width=35)

txtAge.grid(row=5, column=1, padx=1, pady=5)

lblSpace1 = tk.Label(entry\_win, text=" ")

lblSpace1.grid(row=6, column=0, padx=1, pady=5, sticky="ne")

btnSubmit = tk.Button(entry\_win, text="Display", command=display\_data, width=14)

btnSubmit.grid(row=7, column=0, padx=10, pady=1)

btnClear = tk.Button(entry\_win, text="Clear Text", command=clear\_textbox, width=14)

btnClear.grid(row=7, column=1, padx=1, pady=1)

btnExit = tk.Button(entry\_win, text="Exit", command=exit\_win, width=14)

btnExit.grid(row=7, column=2, padx=1, pady=1)

login\_win.mainloop()

main()

**Submit this document to Module 4 Class Exercise.**