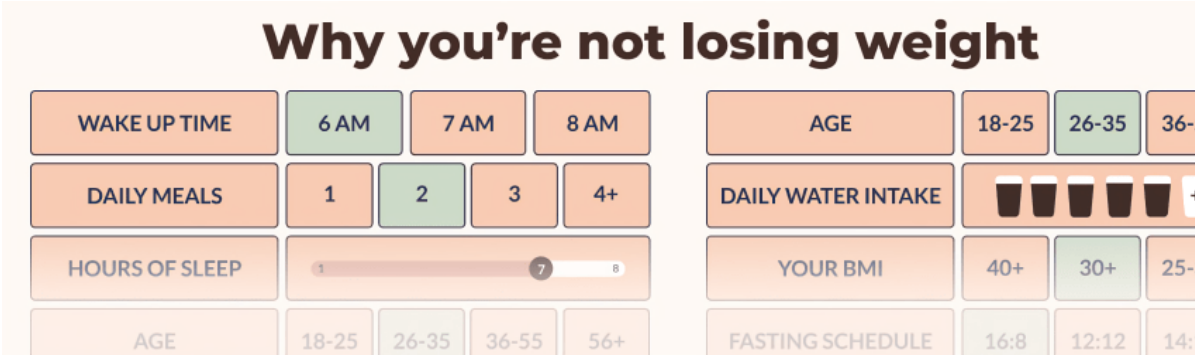
Organizing our GUI

Now we're ready to begin moving towards our goal some more, but first we need to do a few things to prepare for this.

First, we're going to add some new imports to be used soon:



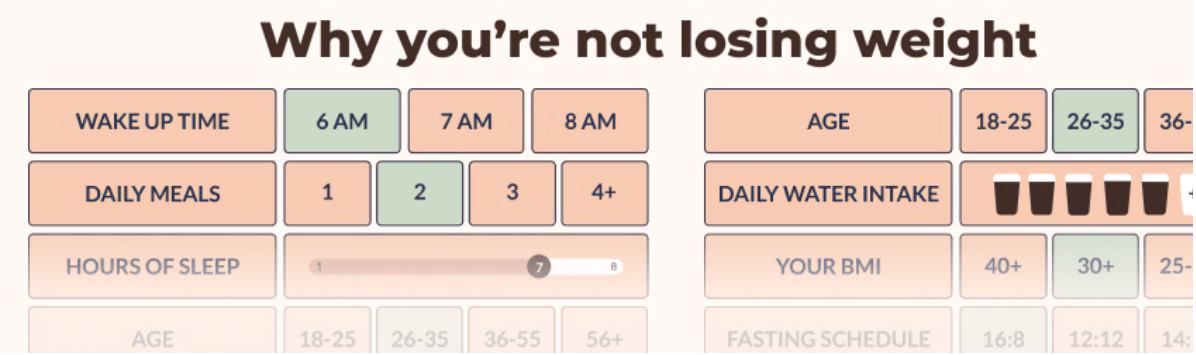
```
import pandas as pd
import numpy as np
```

This means you're going to need pandas and numpy if you do not already have them.

You can also use pip to install using something like: `pip install pandas` in cmd.exe / bash.

If you need help with pip, check out the Pip Tutorial.

Next, we need to change the following in our SeaofBTCapp class:



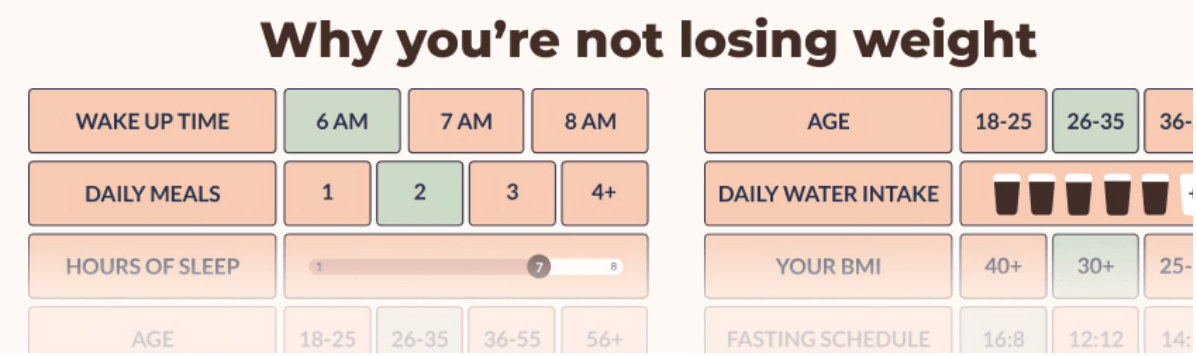

```
        self.frames = {}

        for F in (StartPage, PageOne, PageTwo, PageThree):

            frame = F(container, self)

            self.frames[F] = frame

            frame.grid(row=0, column=0, sticky="nsew")

        self.show_frame(StartPage)
```

to

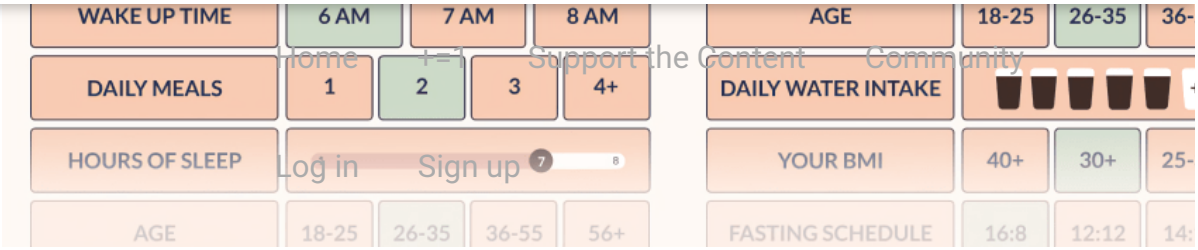
```
        self.frames = {}

        for F in (StartPage, BTCe_Page):

            frame = F(container, self)
```

```
        frame.grid(row=0, column=0, sticky="nsew")

        self.show_frame(StartPage)
```

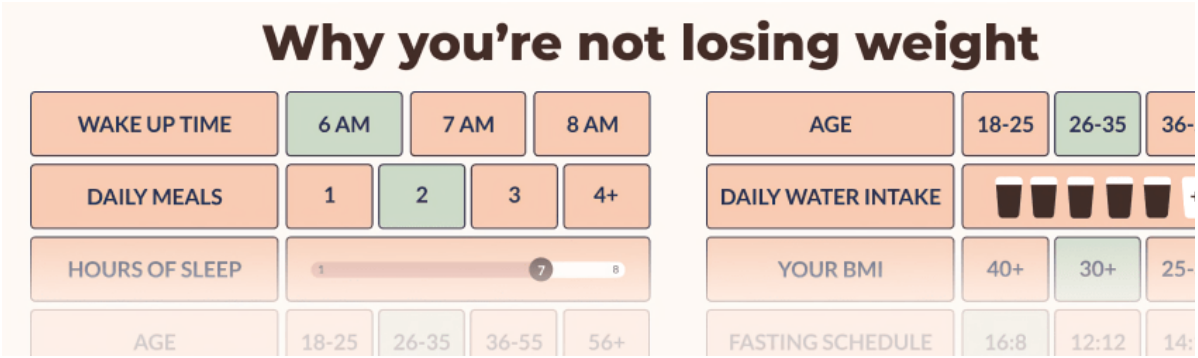
Then we're going to slightly modify our StartPage class:




```
class StartPage(tk.Frame):

    def __init__(self, parent, controller):
        tk.Frame.__init__(self,parent)
        label = tk.Label(self, text=("""ALPHA Bitcoin trading application
        use at your own risk. There is no promise
        of warranty."""), font=LARGE_FONT)
        label.pack(pady=10,padx=10)

        button1 = ttk.Button(self, text="Agree",
                             command=lambda: controller.show_frame(BTCe_Page
        button1.pack()

        button2 = ttk.Button(self, text="Disagree",
                             command=quit)
        button2.pack()
```



Notice mainly the new label, but also the button changes.



Now we're going to convert PageThree a bit, and re-name it to BTCe_Page:

```
class BTCe_Page(tk.Frame):

    def __init__(self, parent, controller):
        tk.Frame.__init__(self, parent)
        label = tk.Label(self, text="Graph Page!", font=LARGE_FONT)
        label.pack(pady=10,padx=10)

        button1 = ttk.Button(self, text="Back to Home",
                             command=lambda: controller.show_frame(StartPage
        button1.pack()

        canvas = FigureCanvasTkAgg(f, self)
        canvas.show()
        canvas.get_tk_widget().pack(side=tk.BOTTOM, fill=tk.BOTH, expand=Tr

        toolbar = NavigationToolbar2TkAgg(canvas, self)
```

After all of this, your full code should be:

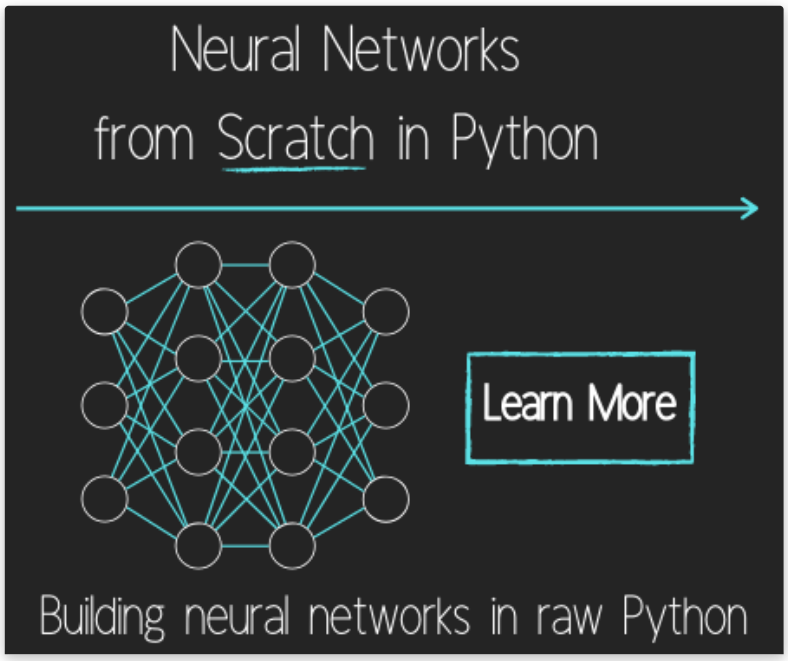

```
# The code for changing pages was derived from: http://stackoverflow.com/qu
# License: http://creativecommons.org/licenses/by-sa/3.0/

import matplotlib
matplotlib.use("TkAgg")
from matplotlib.backends.backend_tkagg import FigureCanvasTkAgg, Navigation
from matplotlib.figure import Figure
import matplotlib.animation as animation
from matplotlib import style

import tkinter as tk
from tkinter import ttk

import urllib
import json

import pandas as pd
import numpy as np


LARGE_FONT= ("Verdana", 12)
style.use("ggplot")

f = Figure(figsize=(5,5), dpi=100)
a = f.add_subplot(111)


def animate(i):
    pullData = open("sampleData.txt","r").read()
    dataList = pullData.split('\n')
    xList = []
    yList = []
    for eachLine in dataList:
        if len(eachLine) > 1:
            x, y = eachLine.split(',')
            xList.append(int(x))
            yList.append(int(y))

    a.clear()
```

```
class SeaofBTCapp(tk.Tk):

    def __init__(self, *args, **kwargs):

        tk.Tk.__init__(self, *args, **kwargs)

        tk.Tk.iconbitmap(self, default="clienticon.ico")
        tk.Tk.wm_title(self, "Sea of BTC client")


        container = tk.Frame(self)
        container.pack(side="top", fill="both", expand = True)
        container.grid_rowconfigure(0, weight=1)
        container.grid_columnconfigure(0, weight=1)

        self.frames = {}

        for F in (StartPage, BTCe_Page):

            frame = F(container, self)

            self.frames[F] = frame

            frame.grid(row=0, column=0, sticky="nsew")

        self.show_frame(StartPage)

    def show_frame(self, cont):

        frame = self.frames[cont]
        frame.tkraise()


class StartPage(tk.Frame):

    def __init__(self, parent, controller):
        tk.Frame.__init__(self,parent)
        label = tk.Label(self, text=("""ALPHA Bitcoin trading application
        use at your own risk. There is no promise
        of warranty."""), font=LARGE_FONT)
        label.pack(pady=10,padx=10)
```

```
                        command=lambda: controller.show_frame(BTCe_Page
        button1.pack()

        button2 = ttk.Button(self, text="Disagree",
                            command=quit)
        button2.pack()



class PageOne(tk.Frame):

    def __init__(self, parent, controller):
        tk.Frame.__init__(self, parent)
        label = tk.Label(self, text="Page One!!!", font=LARGE_FONT)
        label.pack(pady=10,padx=10)

        button1 = ttk.Button(self, text="Back to Home",
                            command=lambda: controller.show_frame(StartPage
        button1.pack()




class BTCe_Page(tk.Frame):

    def __init__(self, parent, controller):
        tk.Frame.__init__(self, parent)
        label = tk.Label(self, text="Graph Page!", font=LARGE_FONT)
        label.pack(pady=10,padx=10)

        button1 = ttk.Button(self, text="Back to Home",
                            command=lambda: controller.show_frame(StartPage
        button1.pack()

        canvas = FigureCanvasTkAgg(f, self)
        canvas.show()
        canvas.get_tk_widget().pack(side=tk.BOTTOM, fill=tk.BOTH, expand=Tr

        toolbar = NavigationToolbar2TkAgg(canvas, self)
        toolbar.update()
        canvas._tkcanvas.pack(side=tk.TOP, fill=tk.BOTH, expand=True)
```

```
ani = animation.FuncAnimation(f, animate, interval=1000)
app.mainloop()
```


The next tutorial: Plotting Live Updating Data In Matplotlib And Our Tkinter GUI



- Plotting Live Updating Data in Matplotlib and our Tkinter GUI
- Customizing an embedded Matplotlib graph in Tkinter
- Creating our Main Menu in Tkinter
- Building a pop-up message window
- Exchange Choice Option
- Time-frame and sample size option
- Adding indicator Menus (3 videos)
- Trading option, start/stop, and help menu options
- Tutorial on adding a tutorial
- Allowing the exchange choice option to affect actual shown exchange
- Adding exchange choice cont'd
- Adding exchange choices part 3
- Indicator Support
- Pulling data from the Sea of BTC API
- Setting up sub plots within our Tkinter GUI
- Graphing an OHLC candlestick graph embedded in our Tkinter GUI
- Acquiring RSI data from Sea of BTC API
- Acquiring MACD data from Sea of BTC API
- Converting Tkinter application to .exe and installer with cx_Freeze

You've reached the end!

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