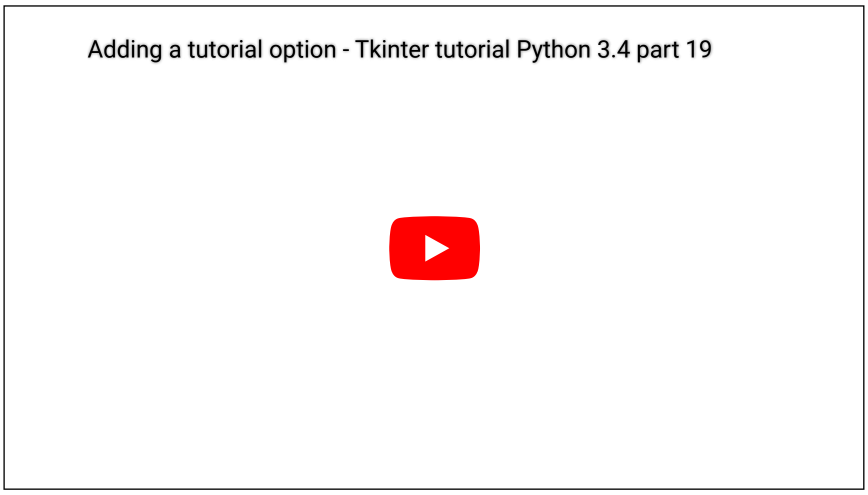
Tutorial on adding a tutorial


Adding a tutorial option - Tkinter tutorial Python 3.4 part 19

```python
# The code for changing pages was derived from: http://stackoverflow.com/questions/7546050/switch-between-two-
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import matplotlib
matplotlib.use("TkAgg")
from matplotlib.backends.backend_tkagg import FigureCanvasTkAgg, NavigationToolbar2TkAgg
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

from matplotlib import pyplot as plt


LARGE_FONT= ("Verdana", 12)
NORM_FONT= ("Verdana", 10)
SMALL_FONT= ("Verdana", 8)


style.use("ggplot")

f = Figure()
a = f.add_subplot(111)
```

```
DatCounter = 9000
programName = "btce"
resampleSize = "15Min"
DataPace = "1d"
candleWidth = 0.008

topIndicator = "none"
bottomIndicator = "none"
middleIndicator = "none"
chartLoad = True

EMAs = []
SMAs = []




def tutorial():

##    def leavemini(what):
##        what.destroy()

    def page2():
        tut.destroy()
        tut2 = tk.Tk()

        def page3():
            tut2.destroy()
            tut3 = tk.Tk()

            tut3.wm_title("Part 3!")

            label = ttk.Label(tut3, text="Part 3", font=NORM_FONT)
            label.pack(side="top", fill="x", pady=10)
            B1 = ttk.Button(tut3, text="Done!", command= tut3.destroy)
            B1.pack()
            tut3.mainloop()



        tut2.wm_title("Part 2!")
        label = ttk.Label(tut2, text="Part 2", font=NORM_FONT)
        label.pack(side="top", fill="x", pady=10)
        B1 = ttk.Button(tut2, text="Next", command= page3)
        B1.pack()
        tut2.mainloop()

    tut = tk.Tk()
    tut.wm_title("Tutorial")
    label = ttk.Label(tut, text="What do you need help with?", font=NORM_FONT)
    label.pack(side="top", fill="x", pady=10)

    B1 = ttk.Button(tut, text = "Overview of the application", command=page2)
    B1.pack()

    B2 = ttk.Button(tut, text = "How do I trade with this client?", command=lambda:popupmsg("Not yet completed
    B2.pack()

    B3 = ttk.Button(tut, text = "Indicator Questions/Help", command=lambda:popupmsg("Not yet completed"))
    B3.pack()

    tut.mainloop()
```

```
def loadChart(run):
    global chartLoad

    if run == "start":
        chartLoad = True

    elif run == "stop":
        chartLoad = False




def addMiddleIndicator(what):
    global middleIndicator
    global DatCounter

    if DataPace == "tick":
        popupmsg("Indicators in Tick Data not available.")

    if what != "none":
        if middleIndicator == "none":
            if what == "sma":
                midIQ = tk.Tk()
                midIQ.wm_title("Periods?")
                label = ttk.Label(midIQ, text="Choose how many periods you want your SMA to be.")
                label.pack(side="top", fill="x", pady=10)
                e = ttk.Entry(midIQ)
                e.insert(0,10)
                e.pack()
                e.focus_set()

                def callback():
                    global middleIndicator
                    global DatCounter

                    middleIndicator = []
                    periods = (e.get())
                    group = []
                    group.append("sma")
                    group.append(int(periods))
                    middleIndicator.append(group)
                    DatCounter = 9000
                    print("middle indicator set to:",middleIndicator)
                    midIQ.destroy()

                b = ttk.Button(midIQ, text="Submit", width=10, command=callback)
                b.pack()
                tk.mainloop()

            if what == "ema":
                midIQ = tk.Tk()
                #midIQ.wm_title("Periods?")
                label = ttk.Label(midIQ, text="Choose how many periods you want your EMA to be.")
                label.pack(side="top", fill="x", pady=10)
                e.pack()
                e.focus_set()

                def callback():
                    global middleIndicator
                    global DatCounter

                    middleIndicator = []
                    periods = (e.get())
                    group = []
                    group.append("ema")
                    group.append(int(periods))
                    middleIndicator.append(group)
                    DatCounter = 9000
                    print("middle indicator set to:",middleIndicator)
                    midIQ.destroy()

                b = ttk.Button(midIQ, text="Submit", width=10, command=callback)
                b.pack()
                tk.mainloop()

        else:
            if what == "sma":
                midIQ = tk.Tk()
                midIQ.wm_title("Periods?")
                label = ttk.Label(midIQ, text="Choose how many periods you want your SMA to be.")
                label.pack(side="top", fill="x", pady=10)
                e = ttk.Entry(midIQ)
                e.insert(0,10)
                e.pack()
                e.focus_set()

                def callback():
                    global middleIndicator
                    global DatCounter

                    #middleIndicator = []
                    periods = (e.get())
                    group = []
                    group.append("sma")
                    group.append(int(periods))
                    middleIndicator.append(group)
                    DatCounter = 9000
                    print("middle indicator set to:",middleIndicator)
                    midIQ.destroy()

                b = ttk.Button(midIQ, text="Submit", width=10, command=callback)
                b.pack()
                tk.mainloop()



            if what == "ema":
                midIQ = tk.Tk()
                midIQ.wm_title("Periods?")
                label = ttk.Label(midIQ, text="Choose how many periods you want your EMA to be.")
                label.pack(side="top", fill="x", pady=10)
                e = ttk.Entry(midIQ)
                e.insert(0,10)
                e.pack()
                e.focus_set()
                    global DatCounter

                    #middleIndicator = []
                    periods = (e.get())
                    group = []
                    group.append("ema")
                    group.append(int(periods))
                    middleIndicator.append(group)
                    DatCounter = 9000
                    print("middle indicator set to:",middleIndicator)
                    midIQ.destroy()

                b = ttk.Button(midIQ, text="Submit", width=10, command=callback)
                b.pack()
                tk.mainloop()

    else:
        middleIndicator = "none"




def addTopIndicator(what):
    global topIndicator
    global DatCounter

    if DataPace == "tick":
        popupmsg("Indicators in Tick Data not available.")

    elif what == "none":
        topIndicator = what
        DatCounter = 9000

    elif what == "rsi":
        rsiQ = tk.Tk()
        rsiQ.wm_title("Periods?")
        label = ttk.Label(rsiQ, text = "Choose how many periods you want each RSI calculation to consider.")
        label.pack(side="top", fill="x", pady=10)

        e = ttk.Entry(rsiQ)
        e.insert(0,14)
        e.pack()
        e.focus_set()

        def callback():
            global topIndicator
            global DatCounter

            periods = (e.get())
            group = []
            group.append("rsi")
            group.append(periods)

            topIndicator = group
            DatCounter = 9000
            print("Set top indicator to",group)
            rsiQ.destroy()

        b = ttk.Button(rsiQ, text="Submit", width=10, command=callback)
        b.pack()
        tk.mainloop()
        global topIndicator
        global DatCounter
        topIndicator = "macd"
        DatCounter = 9000


def addBottomIndicator(what):
    global bottomIndicator
    global DatCounter

    if DataPace == "tick":
        popupmsg("Indicators in Tick Data not available.")

    elif what == "none":
        bottomIndicator = what
        DatCounter = 9000

    elif what == "rsi":
        rsiQ = tk.Tk()
        rsiQ.wm_title("Periods?")
        label = ttk.Label(rsiQ, text = "Choose how many periods you want each RSI calculation to consider.")
        label.pack(side="top", fill="x", pady=10)

        e = ttk.Entry(rsiQ)
        e.insert(0,14)
        e.pack()
        e.focus_set()

        def callback():
            global bottomIndicator
            global DatCounter

            periods = (e.get())
            group = []
            group.append("rsi")
            group.append(periods)

            bottomIndicator = group
            DatCounter = 9000
            print("Set bottom indicator to",group)
            rsiQ.destroy()

        b = ttk.Button(rsiQ, text="Submit", width=10, command=callback)
        b.pack()
        tk.mainloop()


    elif what == "macd":
        global bottomIndicator
        global DatCounter
        bottomIndicator = "macd"
        DatCounter = 9000




def changeTimeFrame(tf):
    global DataPace
    global DatCounter
    if tf == "7d" and resampleSize == "1Min":
        popupmsg("Too much data chosen, choose a smaller time frame or higher OHLC interval")
    else:
        DataPace = tf
```

```
def changeSampleSize(size,width):
    global resampleSize
    global DatCounter
    global candleWidth
    if DataPace == "7d" and resampleSize == "1Min":
        popupmsg("Too much data chosen, choose a smaller time frame or higher OHLC interval")

    elif DataPace == "tick":
        popupmsg("You're currently viewing tick data, not OHLC.")

    else:
        resampleSize = size
        DatCounter = 9000
        candleWidth = width



def changeExchange(toWhat,pn):
    global exchange
    global DatCounter
    global programName

    exchange = toWhat
    programName = pn
    DatCounter = 9000


def popupmsg(msg):
    popup = tk.Tk()
    popup.wm_title("!")
    label = ttk.Label(popup, text=msg, font=NORM_FONT)
    label.pack(side="top", fill="x", pady=10)
    B1 = ttk.Button(popup, text="Okay", command = popup.destroy)
    B1.pack()
    popup.mainloop()



def animate(i):
    dataLink = 'https://btc-e.com/api/3/trades/btc_usd?limit=2000'
    data = urllib.request.urlopen(dataLink)
    data = data.readall().decode("utf-8")
    data = json.loads(data)


    data = data["btc_usd"]
    data = pd.DataFrame(data)

    buys = data[(data['type']=="bid")]
    buys["datestamp"] = np.array(buys["timestamp"]).astype("datetime64[s]")
    buyDates = (buys["datestamp"]).tolist()


    sells = data[(data['type']=="ask")]
    sells["datestamp"] = np.array(sells["timestamp"]).astype("datetime64[s]")
    sellDates = (sells["datestamp"]).tolist()

    a.clear()

    a.plot_date(buyDates, buys["price"], "#00A3E0", label="buys")
    a.plot_date(sellDates, sells["price"], "#183A54", label="sells")
    title = "BTC-e BTCUSD Prices\nLast Price: "+str(data["price"][1999])
    a.set_title(title)








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)


        menubar = tk.Menu(container)
        filemenu = tk.Menu(menubar, tearoff=0)
        filemenu.add_command(label="Save settings", command = lambda: popupmsg("Not supported just yet!"))
        filemenu.add_separator()
        filemenu.add_command(label="Exit", command=quit)
        menubar.add_cascade(label="File", menu=filemenu)

        exchangeChoice = tk.Menu(menubar, tearoff=1)
        exchangeChoice.add_command(label="BTC-e",
                                   command=lambda: changeExchange("BTC-e","btce"))
        exchangeChoice.add_command(label="Bitfinex",
                                   command=lambda: changeExchange("Bitfinex","bitfinex"))
        exchangeChoice.add_command(label="Bitstamp",
                                   command=lambda: changeExchange("Bitstamp","bitstamp"))
        exchangeChoice.add_command(label="Huobi",
                                   command=lambda: changeExchange("Huobi","huobi"))

        menubar.add_cascade(label="Exchange", menu=exchangeChoice)

        dataTF = tk.Menu(menubar, tearoff=1)
        dataTF.add_command(label = "Tick",
                           command=lambda: changeTimeFrame('tick'))
        dataTF.add_command(label = "1 Day",
                           command=lambda: changeTimeFrame('1d'))
        dataTF.add_command(label = "3 Day",
                           command=lambda: changeTimeFrame('3d'))
        dataTF.add_command(label = "1 Week",
                           command=lambda: changeTimeFrame('7d'))
        menubar.add_cascade(label = "Data Time Frame", menu = dataTF)

        OHLCI = tk.Menu(menubar, tearoff=1)
        OHLCI.add_command(label = "Tick",
                           command=lambda: changeTimeFrame('tick'))
        OHLCI.add_command(label = "1 minute",
                           command=lambda: changeSampleSize('1Min', 0.0005))
        OHLCI.add_command(label = "15 minute",
                          command=lambda: changeSampleSize('15Min', 0.008))
        OHLCI.add_command(label = "30 minute",
                          command=lambda: changeSampleSize('30Min', 0.016))
        OHLCI.add_command(label = "1 Hour",
                          command=lambda: changeSampleSize('1H', 0.032))
        OHLCI.add_command(label = "3 Hour",
                          command=lambda: changeSampleSize('3H', 0.096))

        menubar.add_cascade(label="OHLC Interval", menu=OHLCI)


        topIndi = tk.Menu(menubar, tearoff=1)
        topIndi.add_command(label="None",
                           command = lambda: addTopIndicator('none'))
        topIndi.add_command(label="RSI",
                           command = lambda: addTopIndicator('rsi'))
        topIndi.add_command(label="MACD",
                           command = lambda: addTopIndicator('macd'))

        menubar.add_cascade(label="Top Indicator", menu=topIndi)



        mainI = tk.Menu(menubar, tearoff=1)
        mainI.add_command(label="None",
                           command = lambda: addMiddleIndicator('none'))
        mainI.add_command(label="SMA",
                           command = lambda: addMiddleIndicator('sma'))
        mainI.add_command(label="EMA",
                           command = lambda: addMiddleIndicator('ema'))

        menubar.add_cascade(label="Main/middle Indicator", menu=mainI)




        bottomI = tk.Menu(menubar, tearoff=1)
        bottomI.add_command(label="None",
                           command = lambda: addBottomIndicator('none'))
        bottomI.add_command(label="RSI",
                           command = lambda: addBottomIndicator('rsi'))
        bottomI.add_command(label="MACD",
                           command = lambda: addBottomIndicator('macd'))

        menubar.add_cascade(label="Bottom Indicator", menu=bottomI)


        tradeButton = tk.Menu(menubar, tearoff=1)
        tradeButton.add_command(label = "Manual Trading",
                                command=lambda: popupmsg("This is not live yet"))
        tradeButton.add_command(label = "Automated Trading",
                                command=lambda: popupmsg("This is not live yet"))

        tradeButton.add_separator()
        tradeButton.add_command(label = "Quick Buy",
                                command=lambda: popupmsg("This is not live yet"))
        tradeButton.add_command(label = "Quick Sell",
                                command=lambda: popupmsg("This is not live yet"))

        tradeButton.add_separator()
        tradeButton.add_command(label = "Set-up Quick Buy/Sell",
                                command=lambda: popupmsg("This is not live yet"))
        startStop = tk.Menu(menubar, tearoff = 1)
        startStop.add_command( label="Resume",
                               command = lambda: loadChart('start'))
        startStop.add_command( label="Pause",
                               command = lambda: loadChart('stop'))
        menubar.add_cascade(label = "Resume/Pause client", menu = startStop)

        helpmenu = tk.Menu(menubar, tearoff=0)
        helpmenu.add_command(label="Tutorial", command=tutorial)

        menubar.add_cascade(label="Help", menu=helpmenu)










        tk.Tk.config(self, menu=menubar)

        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)

        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()



class PageOne(tk.Frame):
        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=True)

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

app = SeaofBTCapp()
app.geometry("1280x720")
ani = animation.FuncAnimation(f, animate, interval=5000)
app.mainloop()
```

The next tutorial: Allowing The Exchange Choice Option To Affect Actual Shown Exchange

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Programming is a superpower.