Candlestick Charts in Python

How to make interactive candlestick charts in Python with Plotly. Six examples of candlestick charts with Pandas, time series, and yahoo finance data.

The candlestick chart (https://en.wikipedia.org/wiki/Candlestick_chart) is a style of financial chart describing open, high, low and close for a given x coordinate (most likely time). The boxes represent the spread between the open and close values and the lines represent the spread between the low and high values. Sample points where the close value is higher (lower) then the open value are called increasing (decreasing). By default, increasing candles are drawn in green whereas decreasing are drawn in red.

Simple Candlestick with Pandas

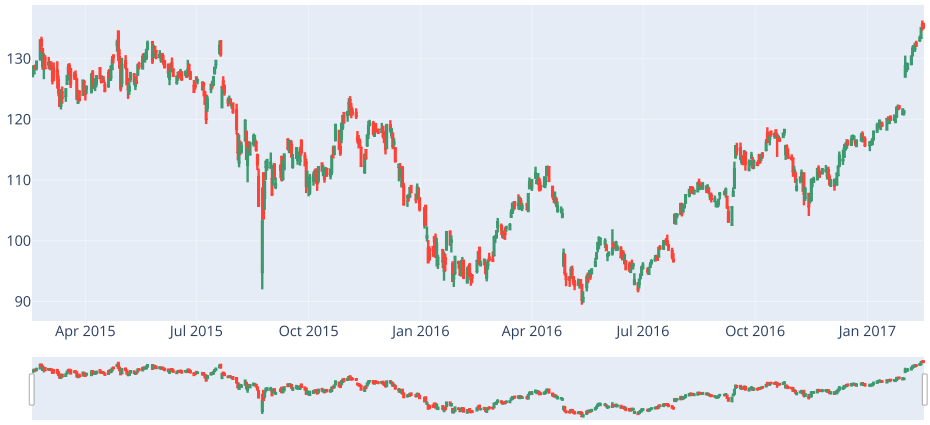
```
import plotly.graph_objects as go

import pandas as pd
from datetime import datetime

df = pd.read_csv('https://raw.githubusercontent.com/plotly/datasets/master/finance-charts-apple.csv')

fig = go.Figure(data=[go.Candlestick(x=df['Date'],
                open=df['AAPL.Open'],
                high=df['AAPL.High'],
                low=df['AAPL.Low'],
                close=df['AAPL.Close'])])

fig.show()
```



hout Rangeslider

```
import plotly.graph_objects as go
import pandas as pd

df = pd.read_csv('https://raw.githubusercontent.com/plotly/datasets/master/finance-charts-apple.csv')

fig = go.Figure(data=[go.Candlestick(x=df['Date'],
                open=df['AAPL.Open'], high=df['AAPL.High'],
                low=df['AAPL.Low'], close=df['AAPL.Close'])
                     ])

fig.update_layout(xaxis_rangeslider_visible=False)
fig.show()
```

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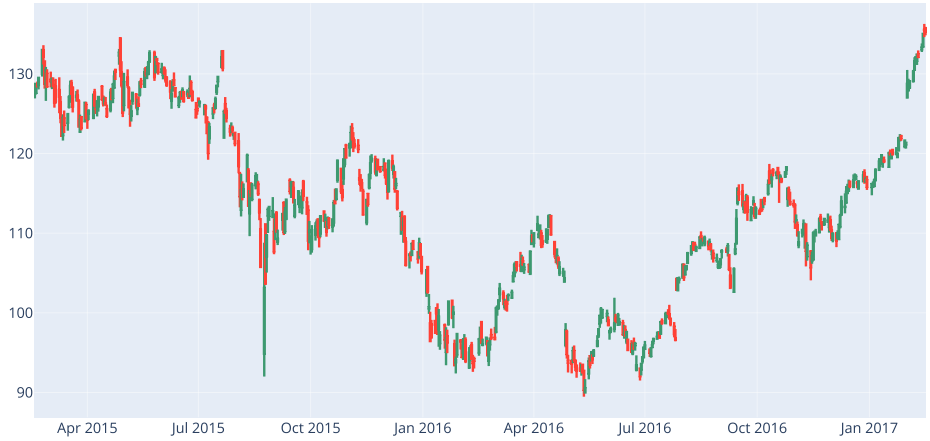

Candlestick in Dash

Dash (https://plotly.com/dash/) is the best way to build analytical apps in Python using Plotly figures. To run the app below, run pip install dash, click "Download" to get the code and run python app.py.

Get started with the official Dash docs (https://dash.plotly.com/installation) and **learn how to effortlessly** style (https://plotly.com/dash/design-kit/) **&** deploy (https://plotly.com/dash/app-manager/) **apps like this with** Dash Enterprise (https://plotly.com/dash/)**.**

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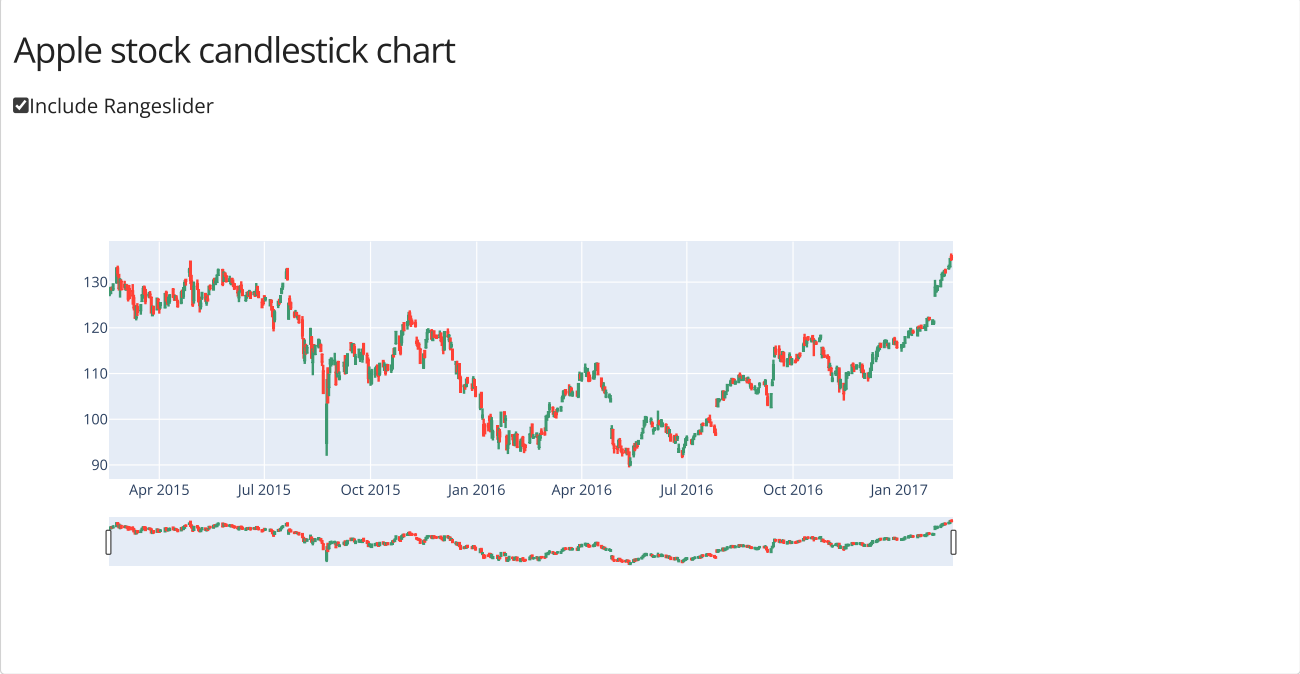
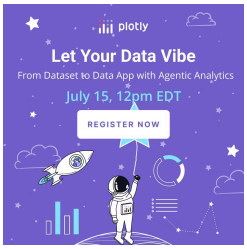
```
from dash import Dash, dcc, html, Input, Output
import plotly.graph_objects as go
import pandas as pd


app = Dash(__name__)

app.layout = html.Div([
    html.H4('Apple stock candlestick chart'),
    dcc.Checklist(
        id='toggle-rangeslider',
        options=[{'label': 'Include Rangeslider',
                  'value': 'slider'}],
        value=['slider']
    ),
    dcc.Graph(id="graph"),
])


@app.callback(
    Output("graph", "figure"),
    Input("toggle-rangeslider", "value"))
def display_candlestick(value):
    df = pd.read_csv('https://raw.githubusercontent.com/plotly/datasets/master/finance-charts-apple.csv') # replace with your own data source
    fig = go.Figure(go.Candlestick(
```

DOWNLOAD



Adding Customized Text and Annotations



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```
import plotly.graph_objects as go
import pandas as pd


df = pd.read_csv('https://raw.githubusercontent.com/plotly/datasets/master/finance-charts-apple.csv')

fig = go.Figure(data=[go.Candlestick(x=df['Date'],
                open=df['AAPL.Open'], high=df['AAPL.High'],
                low=df['AAPL.Low'], close=df['AAPL.Close'])
                      ])

fig.update_layout(
    title=dict(text='The Great Recession'),
    yaxis=dict(
      title=dict(
        text='AAPL Stock'
        )
    ),
    shapes = [dict(
        x0='2016-12-09', x1='2016-12-09', y0=0, y1=1, xref='x', yref='paper',
        line_width=2)],
    annotations=[dict(
        x='2016-12-09', y=0.05, xref='x', yref='paper',
        showarrow=False, xanchor='left', text='Increase Period Begins')]
)

fig.show()
```

Custom Candlestick Colors

```
import plotly.graph_objects as go
import pandas as pd

df = pd.read_csv('https://raw.githubusercontent.com/plotly/datasets/master/finance-charts-apple.csv')

fig = go.Figure(data=[go.Candlestick(
    x=df['Date'],
    open=df['AAPL.Open'], high=df['AAPL.High'],
    low=df['AAPL.Low'], close=df['AAPL.Close'],
    increasing_line_color= 'cyan', decreasing_line_color= 'gray'
)])

fig.show()
```

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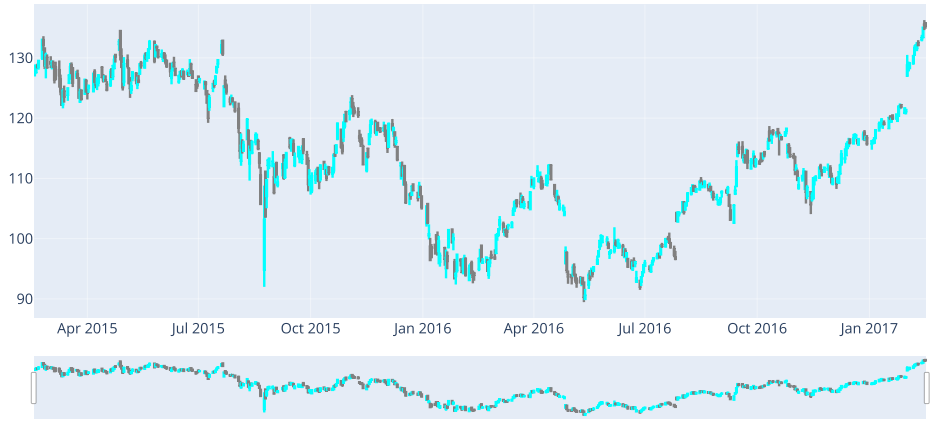

Simple Example with `datetime` Objects

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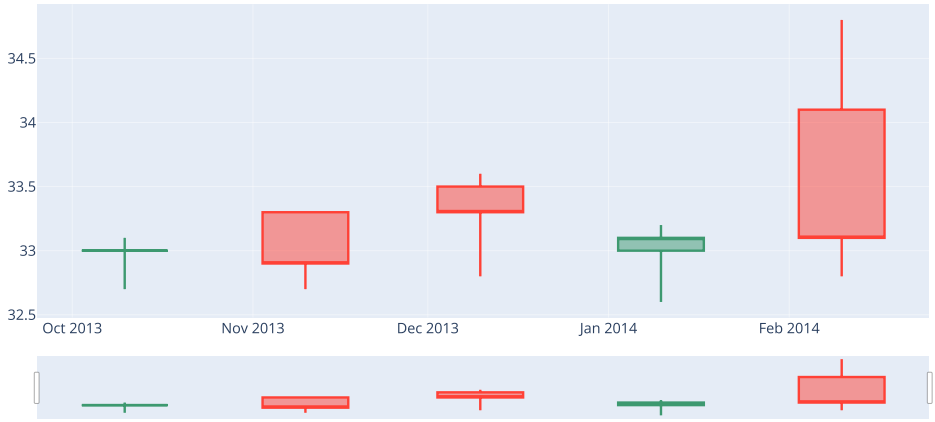
```
import plotly.graph_objects as go
from datetime import datetime

open_data = [33.0, 33.3, 33.5, 33.0, 34.1]
high_data = [33.1, 33.3, 33.6, 33.2, 34.8]
low_data = [32.7, 32.7, 32.8, 32.6, 32.8]
close_data = [33.0, 32.9, 33.3, 33.1, 33.1]
dates = [datetime(year=2013, month=10, day=10),
         datetime(year=2013, month=11, day=10),
         datetime(year=2013, month=12, day=10),
         datetime(year=2014, month=1, day=10),
         datetime(year=2014, month=2, day=10)]

fig = go.Figure(data=[go.Candlestick(x=dates,
                       open=open_data, high=high_data,
                       low=low_data, close=close_data)])

fig.show()
```



Reference

For more information on candlestick attributes, see: https://plotly.com/python/reference/candlestick/ (https://plotly.com/python/reference/candlestick/)

What About Dash?

Dash (https://dash.plot.ly/) is an open-source framework for building analytical applications, with no Javascript required, and it is tightly integrated with the Plotly graphing library.

Learn about how to install Dash at https://dash.plot.ly/installation (https://dash.plot.ly/installation).

Everywhere in this page that you see fig.show(), you can display the same figure in a Dash application by passing it to the figure argument of the Graph component (https://dash.plot.ly/dash-core-components/graph) from the built-in dash_core_components package like this:

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```
import plotly.graph_objects as go # or plotly.express as px
fig = go.Figure() # or any Plotly Express function e.g. px.bar(...)
# fig.add_trace( ... )
# fig.update_layout( ... )

from dash import Dash, dcc, html

app = Dash()
app.layout = html.Div([
    dcc.Graph(figure=fig)
])

app.run(debug=True, use_reloader=False)  # Turn off reloader if inside Jupyter
```