

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```

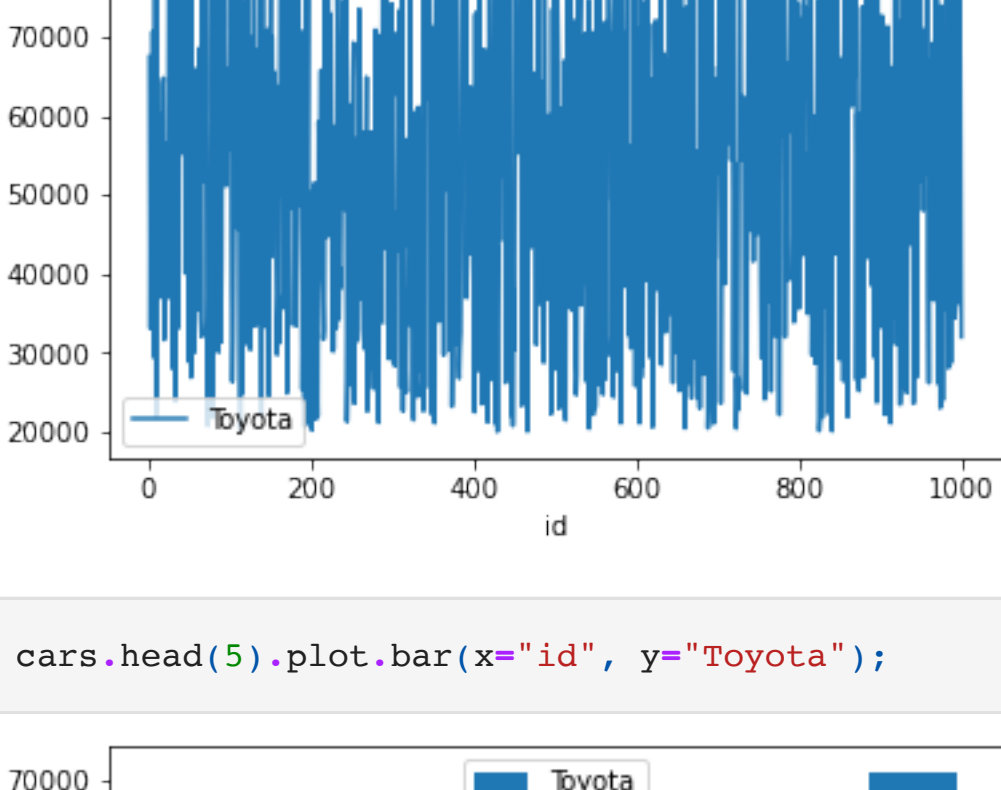
```
In [3]: cars = pd.read_csv('/Users/chukwunonsodavid/Downloads/carprices.csv')
cars
```

Out[3]:

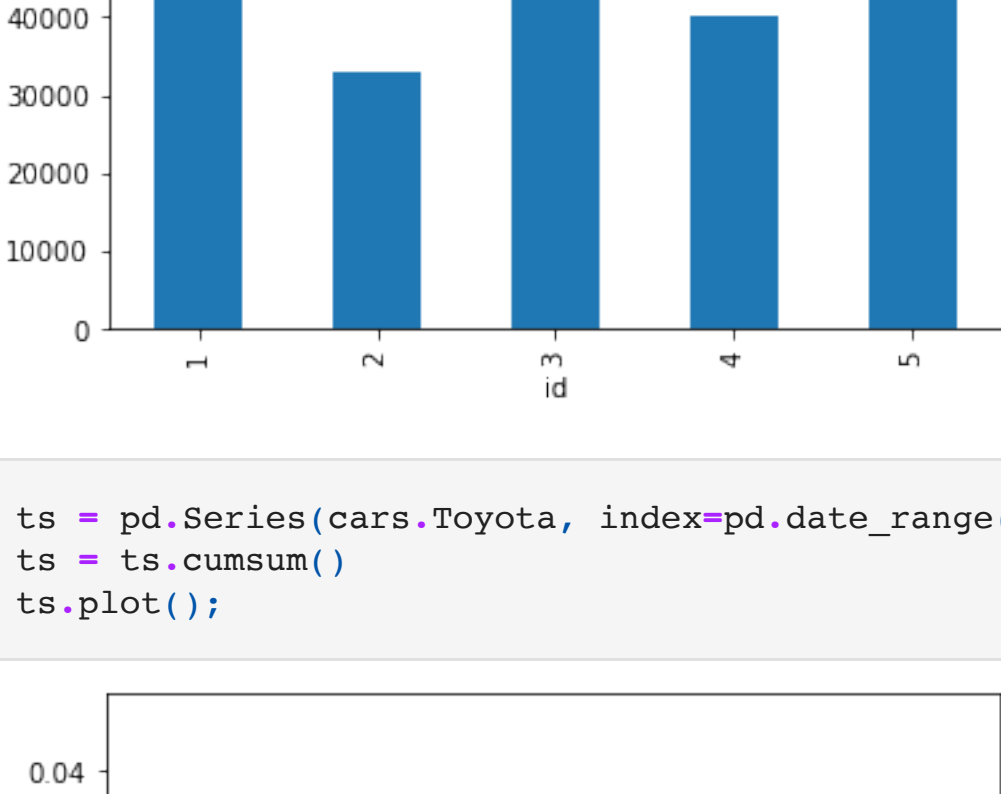
	id	Toyota	Benz	Honda	Ford
0	1	67527.58	57012.74	53495.12	90358.02
1	2	33094.96	179672.71	28964.51	51647.42
2	3	53018.21	191486.30	35332.19	64502.11
3	4	40095.34	67559.78	30408.27	86129.14
4	5	70754.71	131660.92	41882.16	74685.89
...	...	...	...	...	...
995	996	36361.90	160089.80	55825.34	49418.05
996	997	84782.62	133921.85	36618.12	89840.84
997	998	85576.71	209178.28	54766.97	36045.10
998	999	55934.67	84813.99	30029.01	81747.95
999	1000	32039.44	85010.23	55584.37	46337.29

1000 rows x 5 columns

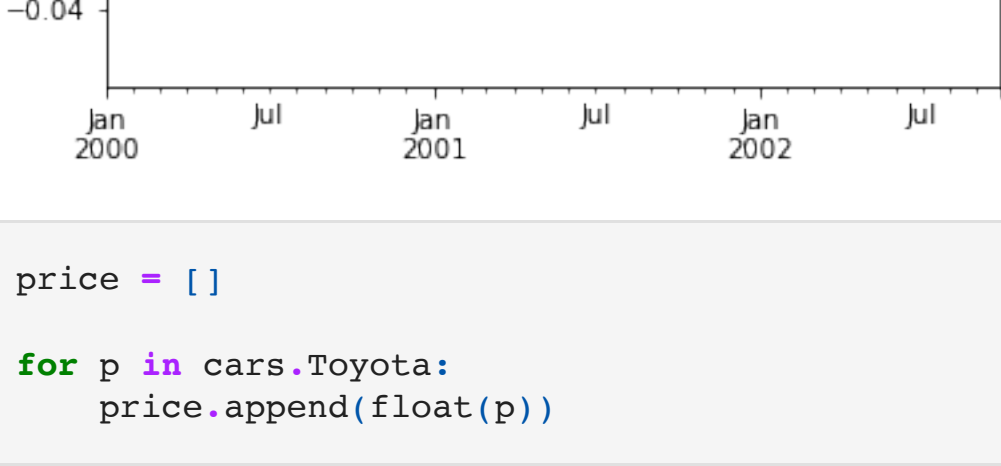
```
In [9]: cars.plot(x="id", y="Toyota");
```



```
In [10]: cars.head(5).plot.bar(x="id", y="Toyota");
```

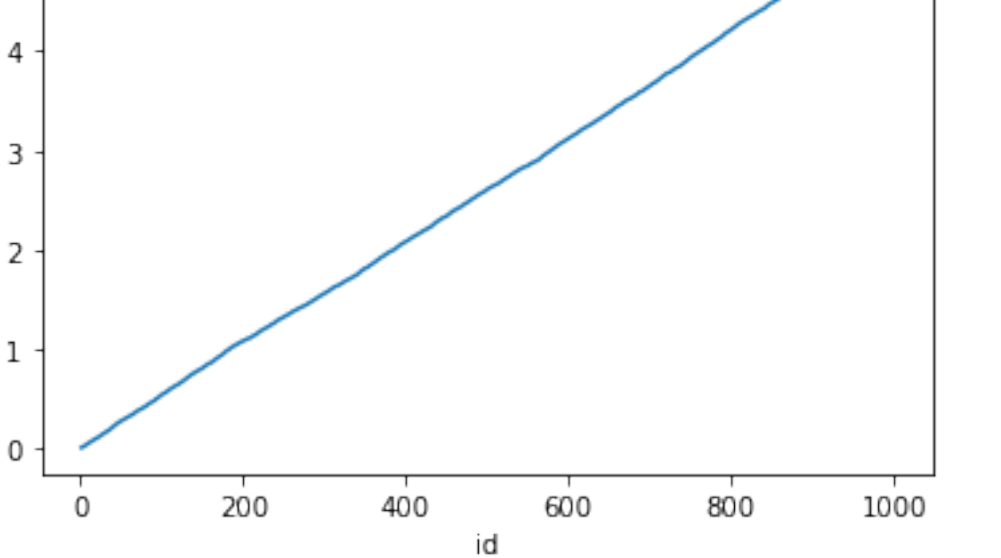


```
In [20]: ts = pd.Series(cars.Toyota, index=pd.date_range("1/1/2000", periods=1000))
ts = ts.cumsum()
ts.plot();
```



```
In [30]: price = []
for p in cars.Toyota:
    price.append(float(p))
```

```
In [32]: ts = pd.Series(price, index=cars.id)
ts = ts.cumsum()
ts.plot();
```



```
In [69]: toyota_price = []
benz_price = []
honda_price = []
ford_price = []

for p in cars.head(50).Toyota:
    toyota_price.append(float(p))

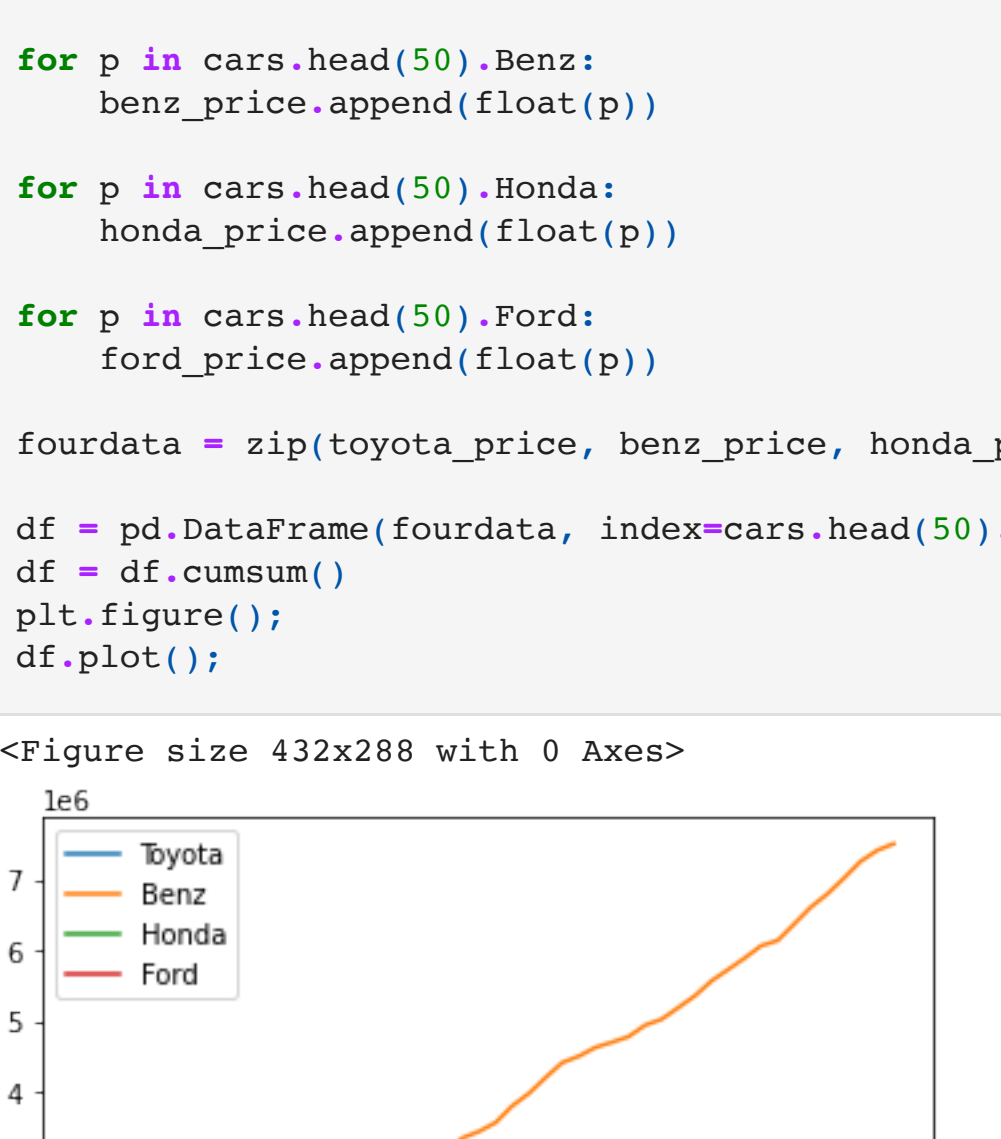
for p in cars.head(50).Benz:
    benz_price.append(float(p))

for p in cars.head(50).Honda:
    honda_price.append(float(p))

for p in cars.head(50).Ford:
    ford_price.append(float(p))

fourdata = zip(toyota_price, benz_price, honda_price, ford_price)

df = pd.DataFrame(fourdata, index=cars.head(50).id, columns=["Toyota", "Benz", "Honda", "Ford"])
df = df.cumsum()
plt.figure();
df.plot();
```



```
In [68]: toyota_price = []
benz_price = []
honda_price = []
ford_price = []

for p in cars.head(10).Toyota:
    toyota_price.append(float(p))

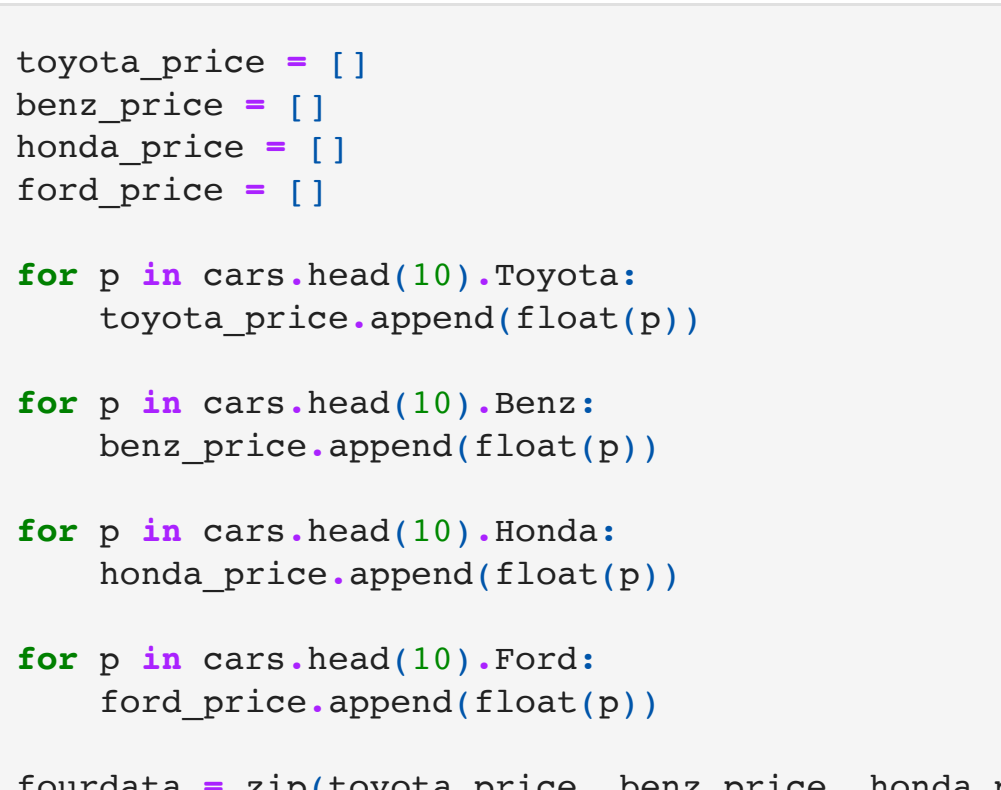
for p in cars.head(10).Benz:
    benz_price.append(float(p))

for p in cars.head(10).Honda:
    honda_price.append(float(p))

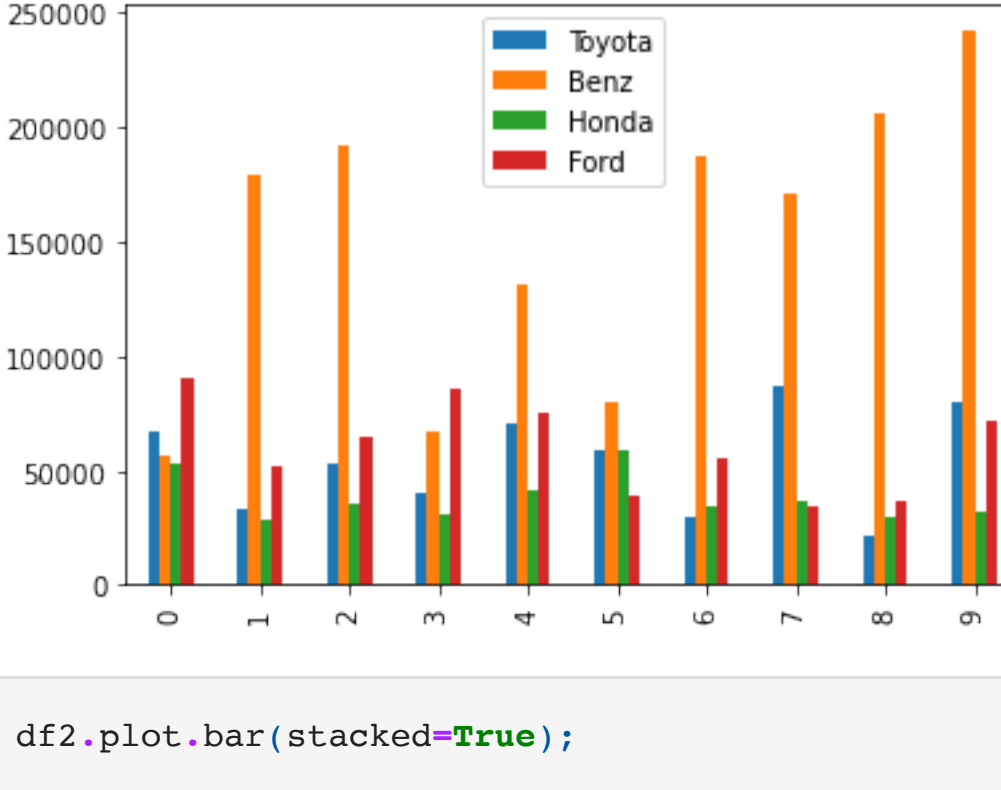
for p in cars.head(10).Ford:
    ford_price.append(float(p))

fourdata = zip(toyota_price, benz_price, honda_price, ford_price)

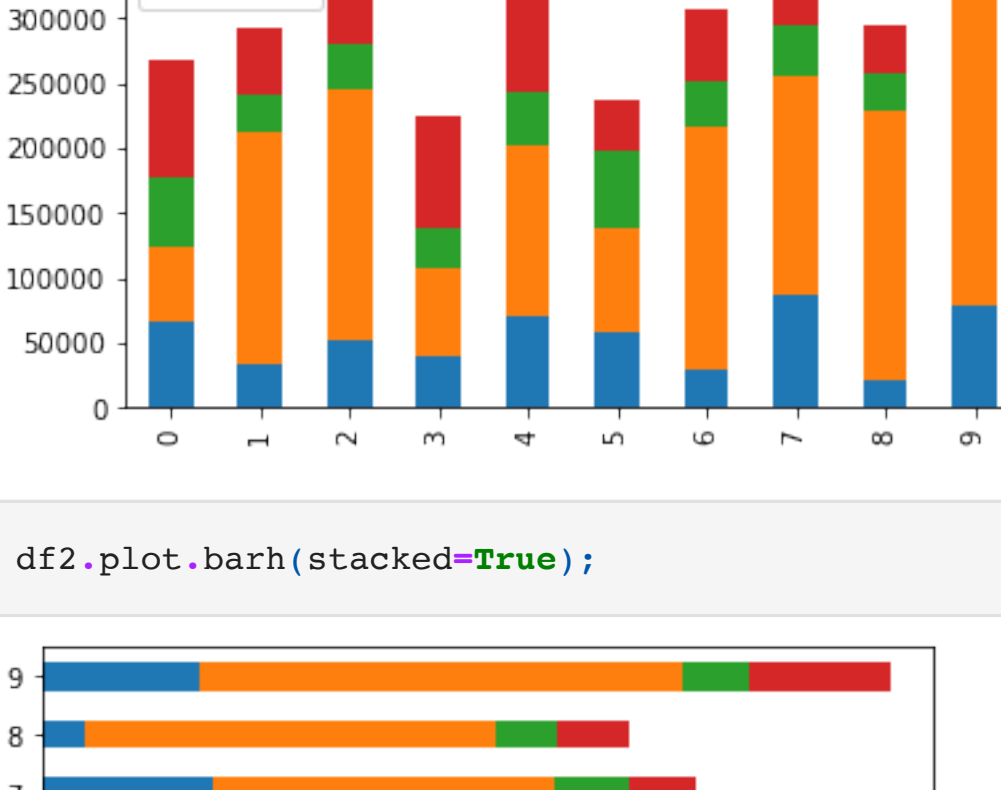
df2 = pd.DataFrame(fourdata, columns=["Toyota", "Benz", "Honda", "Ford"])
df2.plot.bar();
```



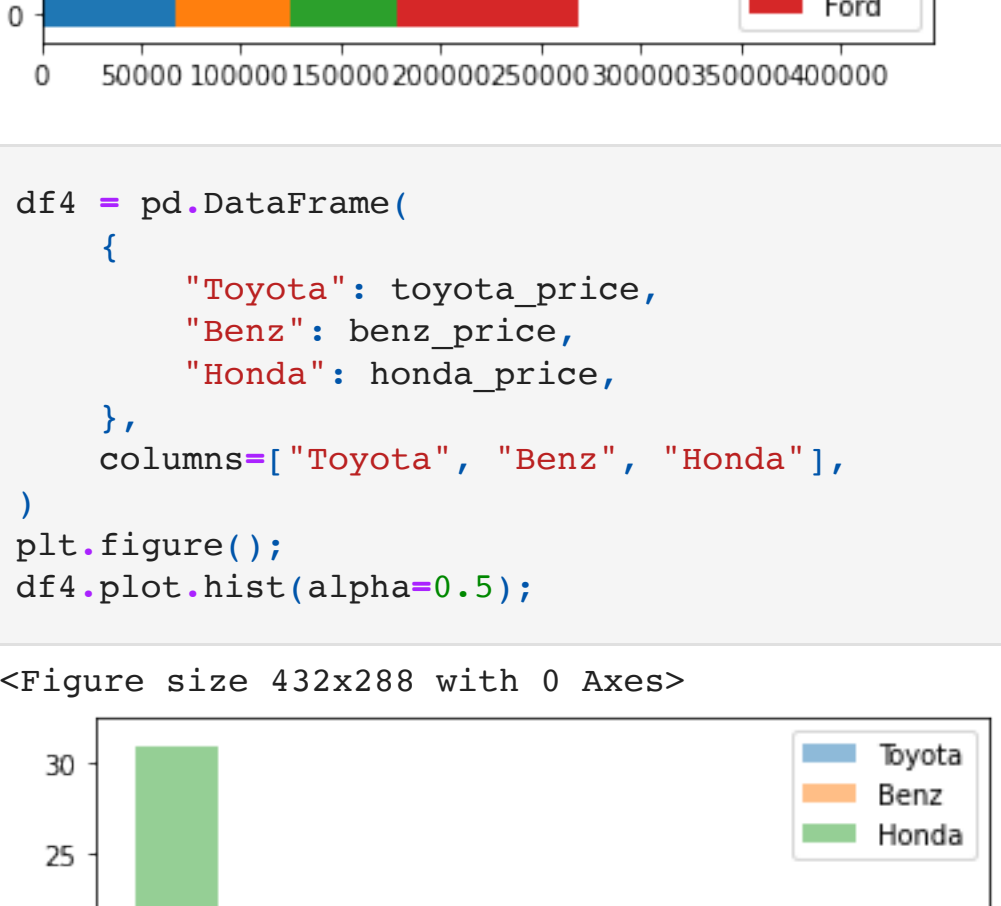
```
In [70]: df2.plot.bar(stacked=True);
```



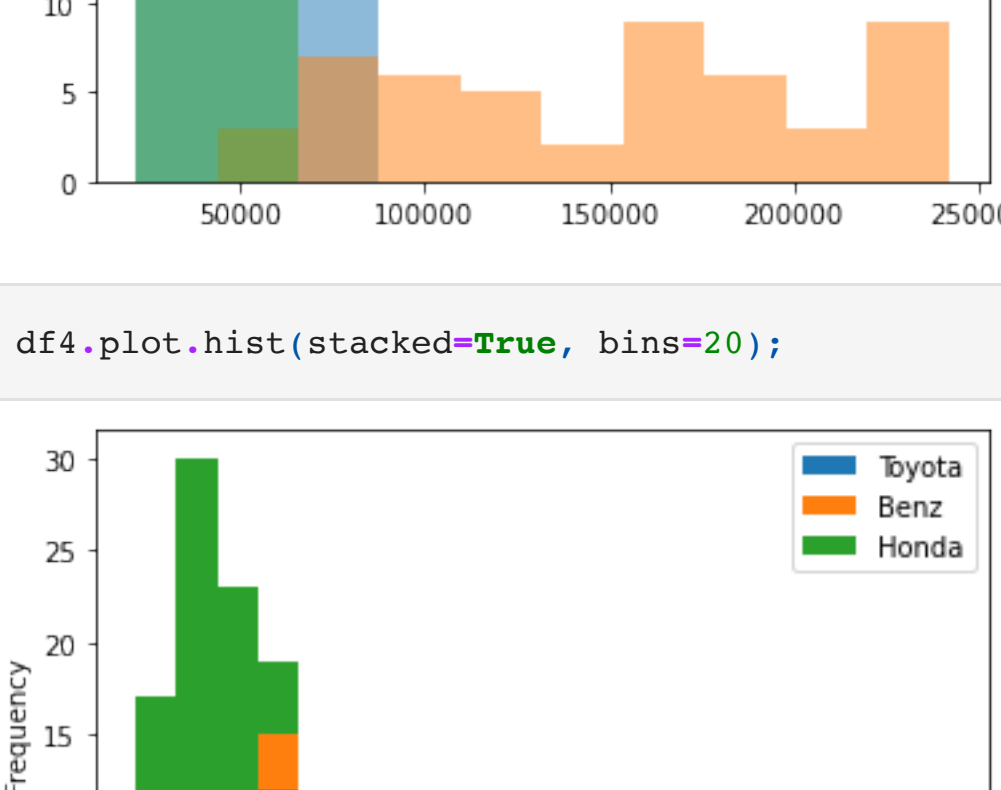
```
In [71]: df2.plot.barh(stacked=True);
```



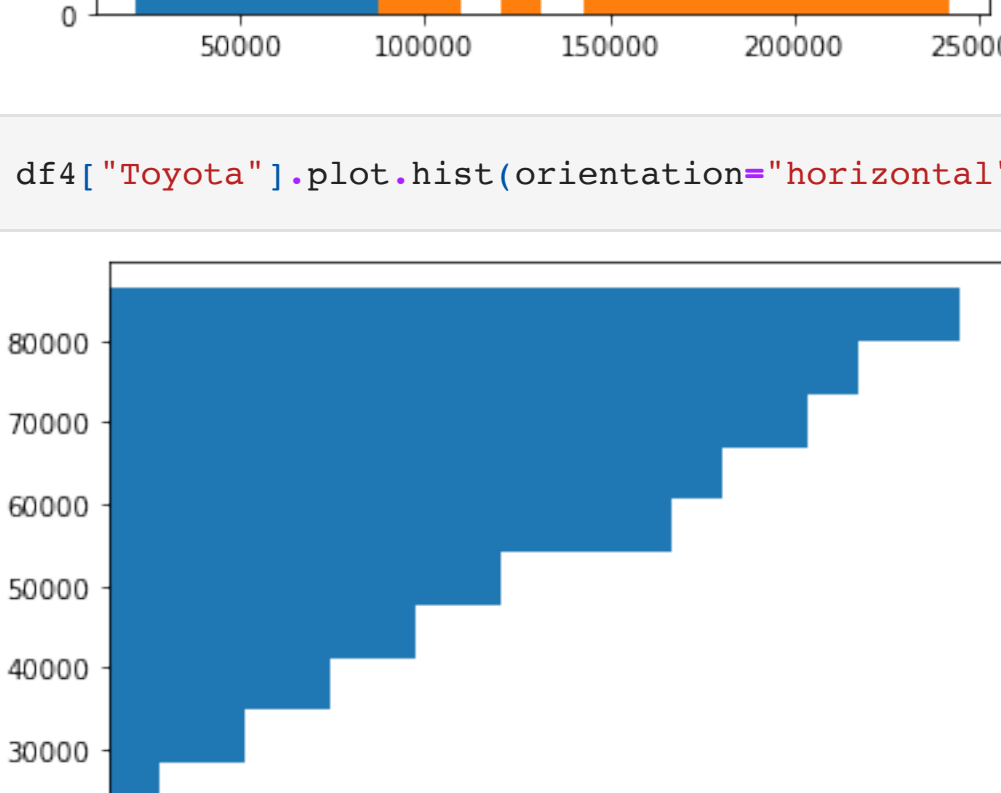
```
In [76]: df4 = pd.DataFrame(
    {
        "Toyota": toyota_price,
        "Benz": benz_price,
        "Honda": honda_price,
    },
    columns=["Toyota", "Benz", "Honda"],
)
plt.figure();
df4.plot.hist(alpha=0.5);
```



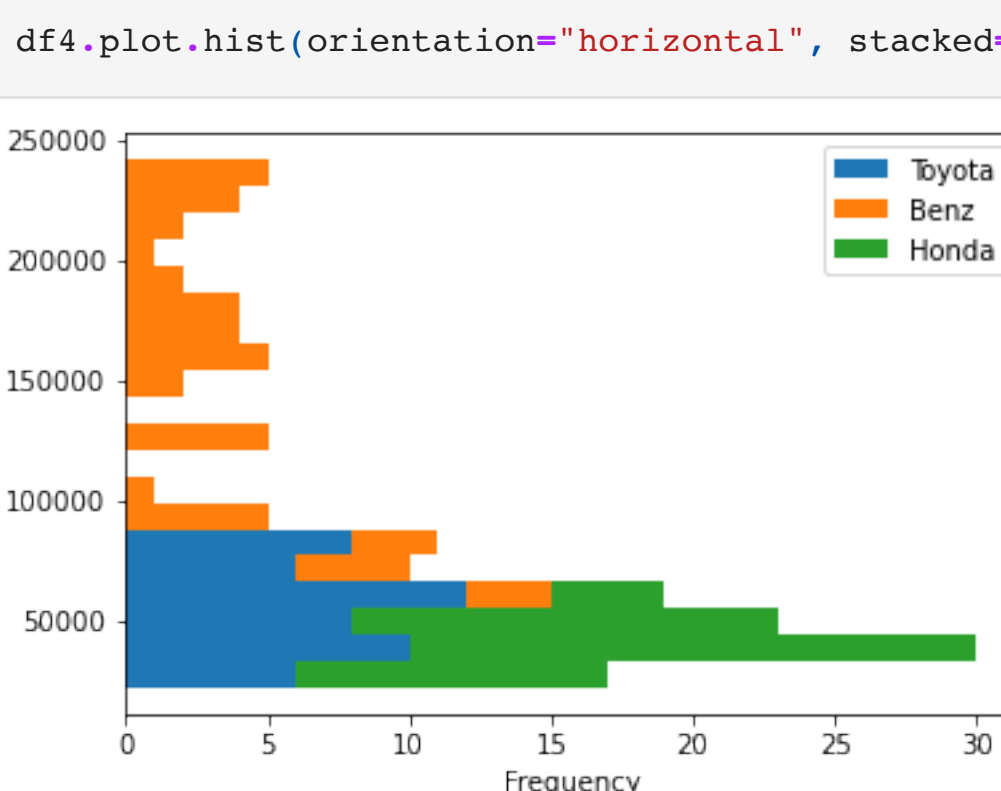
```
In [77]: df4.plot.hist(stacked=True, bins=20);
```



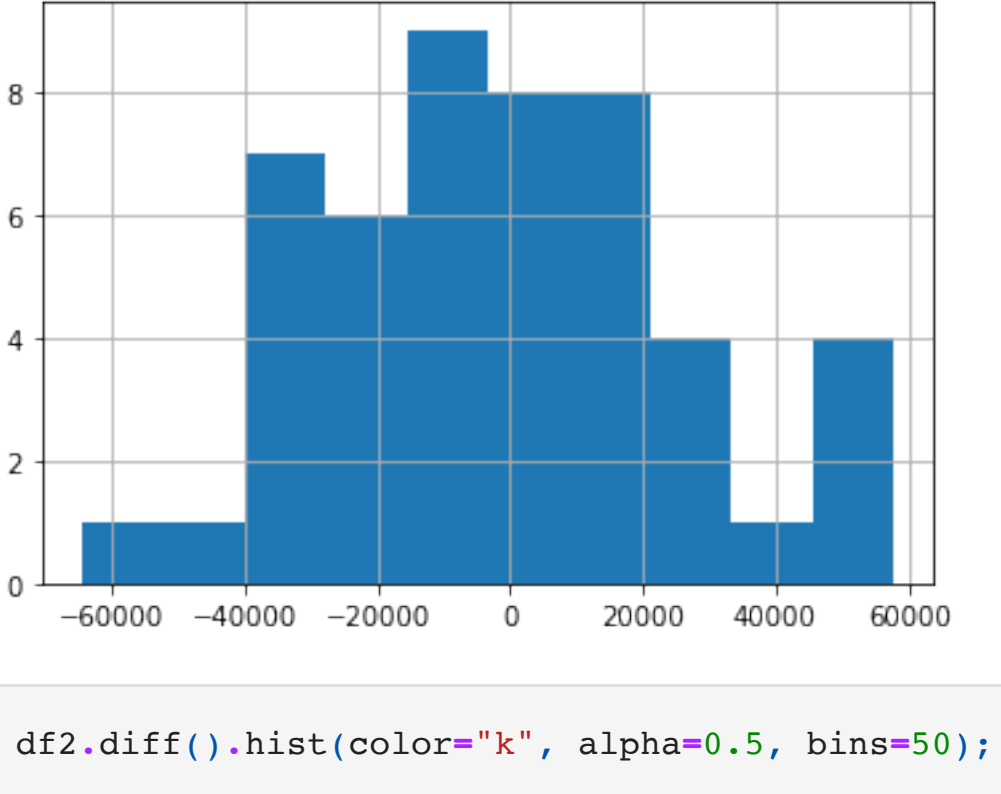
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In [78]: df4["Toyota"].plot.hist(orientation="horizontal", cumulative=True);
```



```
In [84]: df4.plot.hist(orientation="horizontal", stacked=True, bins=20);
```



```
In [86]: df4["Toyota"].diff().hist();
```



```
In [88]: df2.diff().hist(color="k", alpha=0.5, bins=50);
```



```
In [108]: toyota_price = []
benz_price = []
honda_price = []
ford_price = []

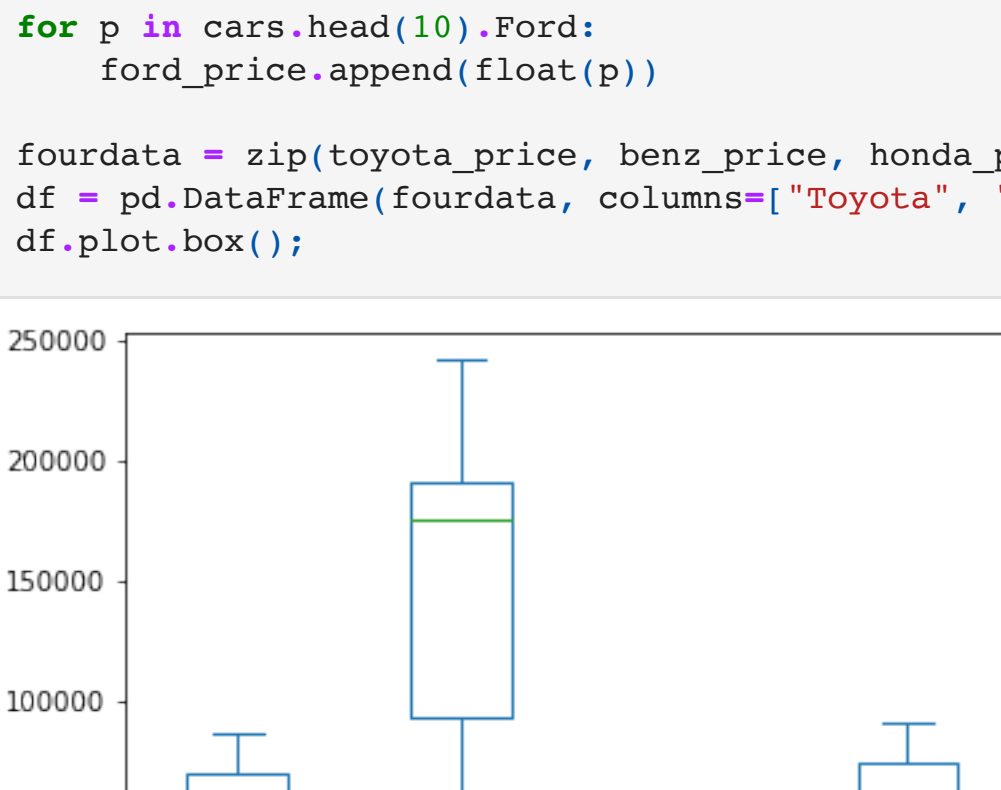
for p in cars.head(10).Toyota:
    toyota_price.append(float(p))

for p in cars.head(10).Benz:
    benz_price.append(float(p))

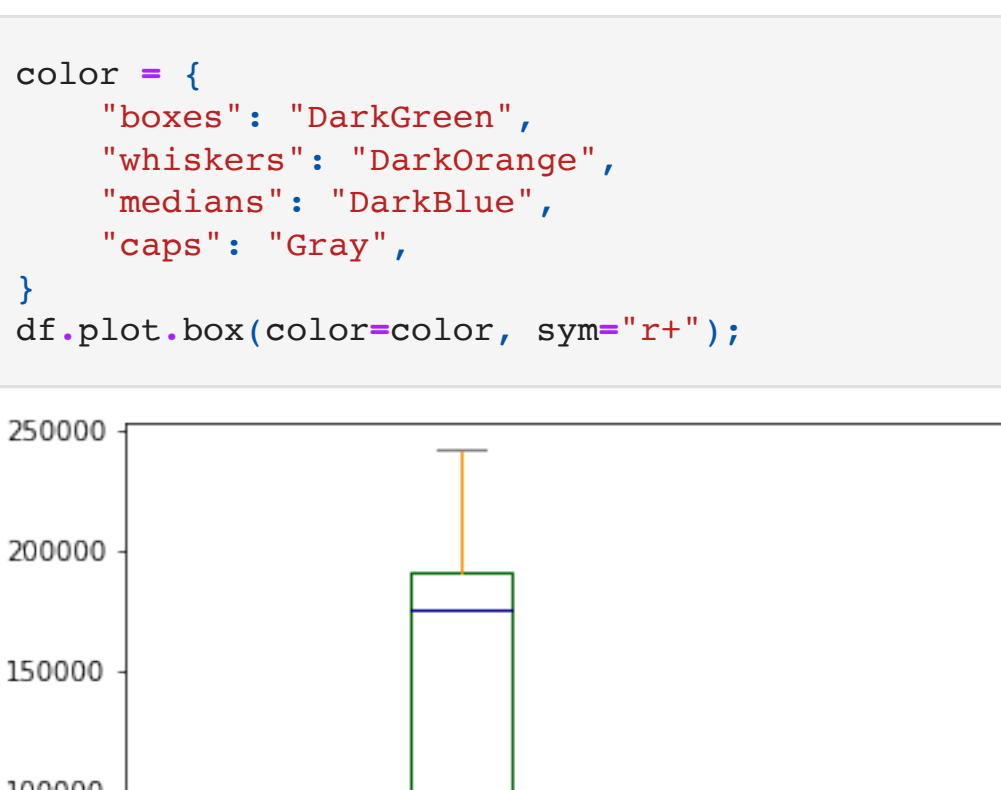
for p in cars.head(10).Honda:
    honda_price.append(float(p))

for p in cars.head(10).Ford:
    ford_price.append(float(p))

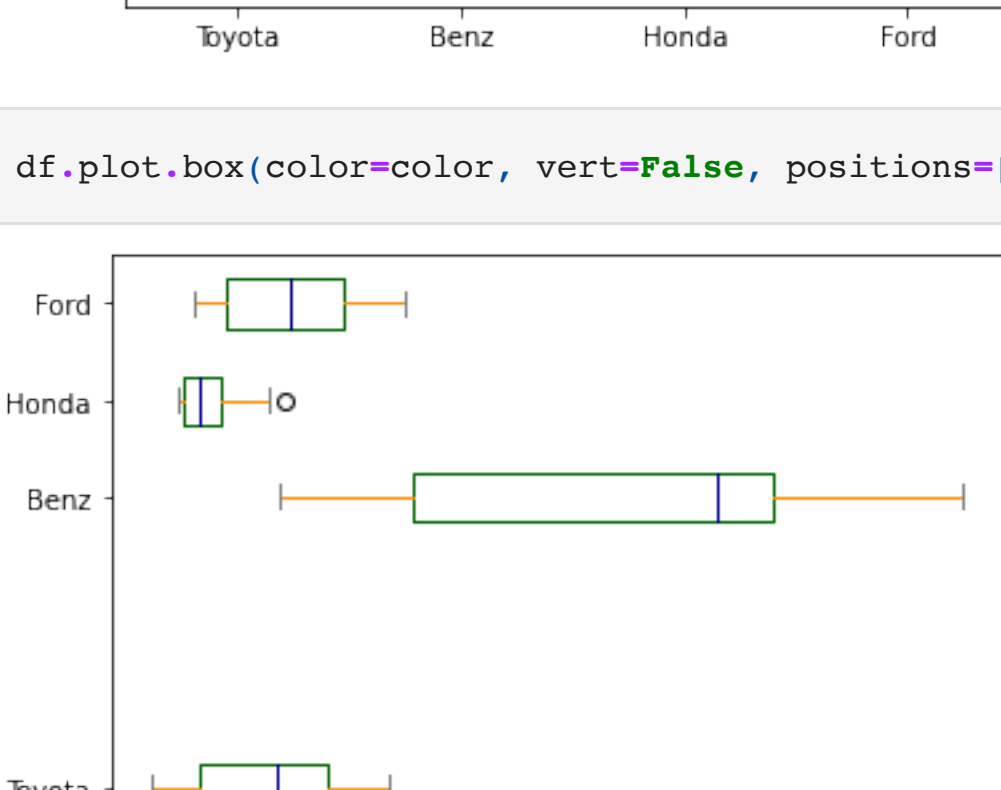
fourdata = zip(toyota_price, benz_price, honda_price, ford_price)
df = pd.DataFrame(fourdata, columns=["Toyota", "Benz", "Honda", "Ford"])
df.plot.box();
```



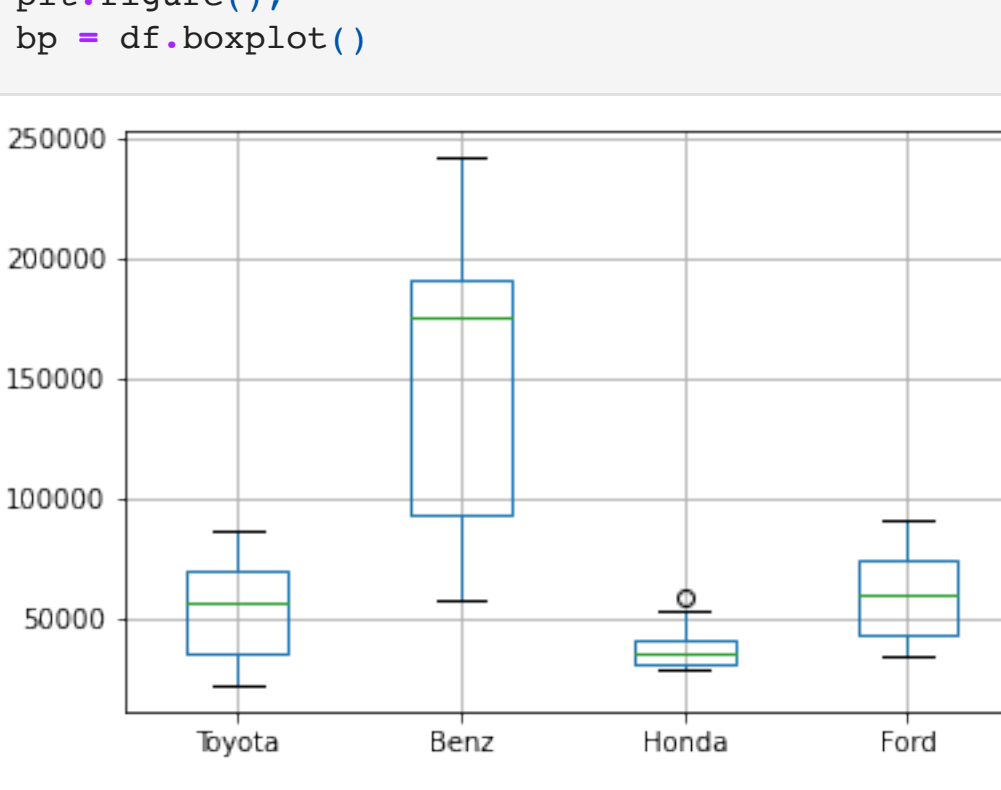
```
In [109]: color = {
    "boxes": "DarkGreen",
    "whiskers": "DarkOrange",
    "medians": "DarkBlue",
    "caps": "Gray",
}
df.plot.box(color=color, sym="r+");
```



```
In [110]: df.plot.box(color=color, vert=False, positions=[1, 4, 5, 6]);
```



```
In [111]: plt.figure();
bp = df.boxplot()
```



```
In [112]: toyota_price = []
benz_price = []
honda_price = []
ford_price = []

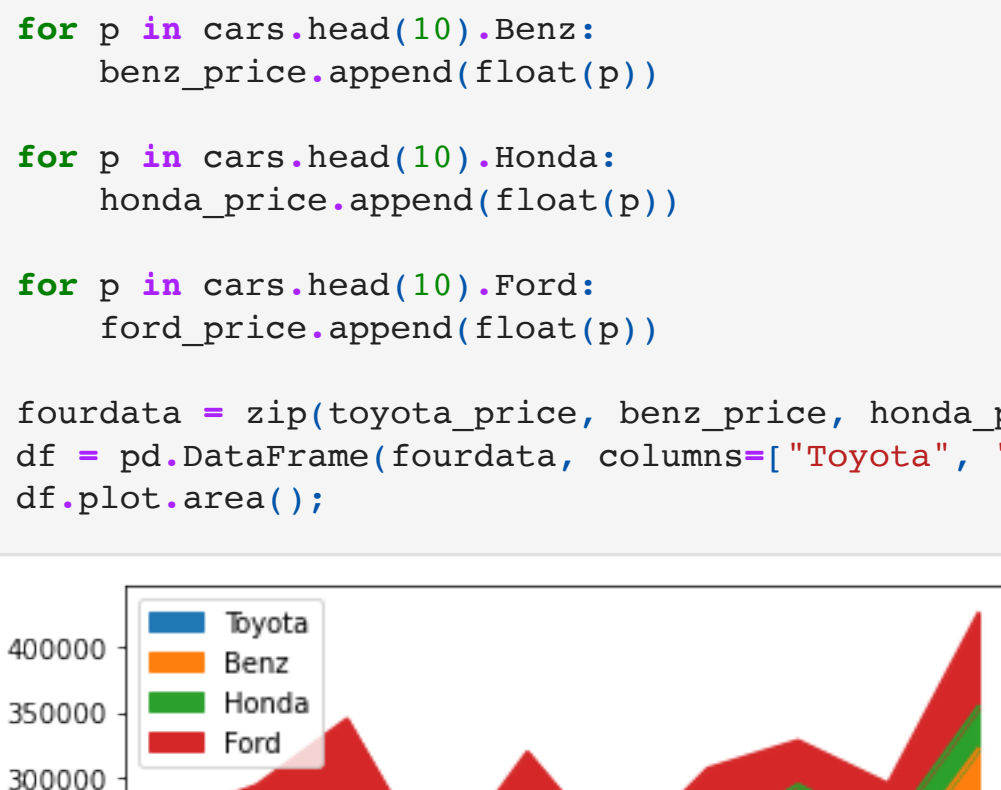
for p in cars.head(10).Toyota:
    toyota_price.append(float(p))

for p in cars.head(10).Benz:
    benz_price.append(float(p))

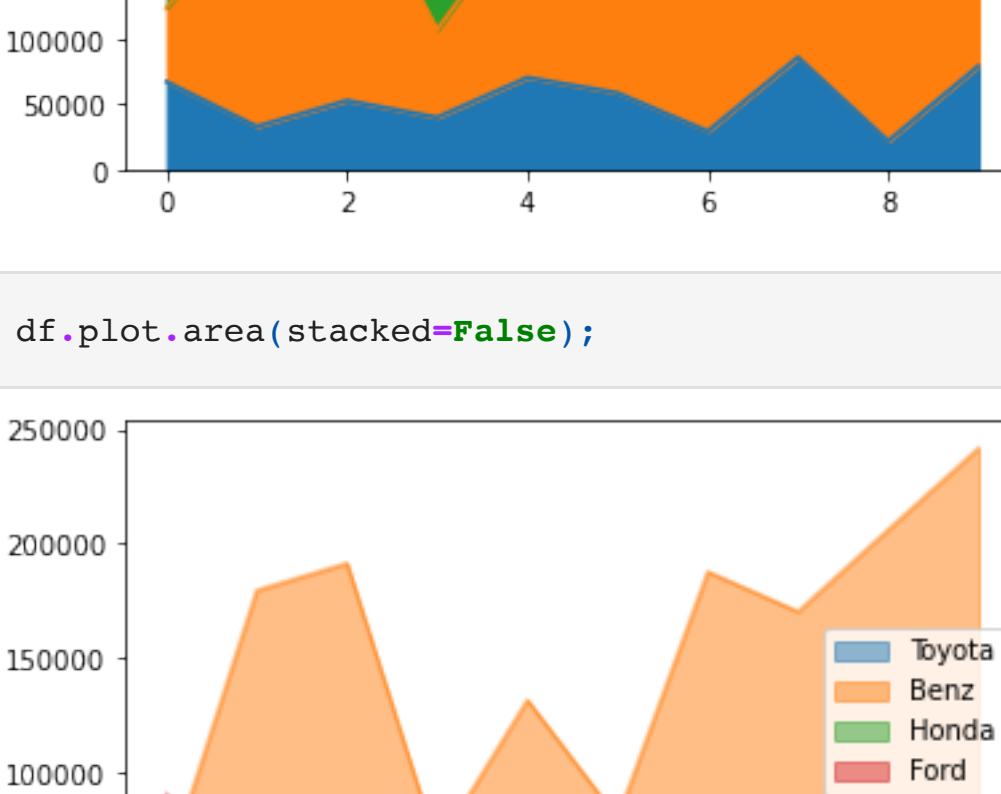
for p in cars.head(10).Honda:
    honda_price.append(float(p))

for p in cars.head(10).Ford:
    ford_price.append(float(p))

fourdata = zip(toyota_price, benz_price, honda_price, ford_price)
df = pd.DataFrame(fourdata, columns=["Toyota", "Benz", "Honda", "Ford"])
df.plot.area();
```



```
In [113]: df.plot.area(stacked=False);
```



```
In [ ]:
```