in i	mport pandas as pd mport matplotlib.pyplot as plt mport numpy as np
Out[3]:	ars = pd.read_csv('/Users/chukwunonsodavid/Downloads/carprices.csv') ars 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
	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
99 99 99	997 84782.62 133921.85 36618.12 89840.84 97 998 85576.71 209178.28 54766.97 36045.10
100	99 1000 32039.44 85010.23 55584.37 46337.29 00 rows × 5 columns ars.plot(x="id", y="Toyota");
90	000 -
50 40	000 - 0
Tn [10]:	000 1000 1000 1000 1000 1000 1000 1000
60	000 - Toyota
30 20	000 - 0
	s = pd.Series(cars.Toyota, index=pd.date_range("1/1/2000", periods=1000)) s = ts.cumsum()
(s.plot(); 0.04 - 0.02 -
-O	0.00 -
Tn [20]:	n.04 - Jan Jul Jan Jul Jan Jul 2000 2001 2002
In [32]: t	<pre>or p in cars.Toyota: price.append(float(p)) s = pd.Series(price, index=cars.id) s = ts.cumsum()</pre>
	le7
3 · 2 ·	
o · In [69]:	0 200 400 600 800 1000 id
b h f	<pre>oyota_price = [] enz_price = [] onda_price = [] ord_price = [] or p in cars.head(50).Toyota: toyota_price.append(float(p))</pre>
f	<pre>or p in cars.head(50).Benz: benz_price.append(float(p)) or p in cars.head(50).Honda: honda_price.append(float(p)) or p in cars.head(50).Ford:</pre>
f d d	<pre>ford_price.append(float(p)) ourdata = zip(toyota_price, benz_price, honda_price, ford_price) f = pd.DataFrame(fourdata, index=cars.head(50).id, columns=["Toyota", "Benz", "Honda", "Ford"]) f = df.cumsum() lt.figure();</pre>
<f< td=""><td>f.plot(); rigure size 432x288 with 0 Axes> le6 Toyota Benz Honda</td></f<>	f.plot(); rigure size 432x288 with 0 Axes> le6 Toyota Benz Honda
6 · 5 · 4 · 3 · 2 · ·	Ford
1 · 0 ·	0 10 20 30 40 50 id
b h f	<pre>oyota_price = [] enz_price = [] onda_price = [] ord_price = [] or p in cars.head(10).Toyota: toyota_price.append(float(p))</pre>
f	<pre>or p in cars.head(10).Benz: benz_price.append(float(p)) or p in cars.head(10).Honda: honda_price.append(float(p))</pre>
f	<pre>or p in cars.head(10).Ford: ford_price.append(float(p)) ourdata = zip(toyota_price, benz_price, honda_price, ford_price) f2 = pd.DataFrame(fourdata, columns=["Toyota", "Benz", "Honda", "Ford"]) f2.plot.bar();</pre>
25	0000 - Toyota Benz Honda Ford
10	
	f2.plot.bar(stacked=True);
35 30 25 20	0000 - 00
10	
In [71]: d	f2.plot.barh(stacked=True);
6 · 4 · 3 · 2 ·	Tōyota Benz
Tn [76].	Benz Honda 50000 100000 150000 200000250000 300000400000 f4 = pd.DataFrame(
)	<pre>{ "Toyota": toyota_price, "Benz": benz_price, "Honda": honda_price, }, columns=["Toyota", "Benz", "Honda"],</pre>
d <f< td=""><td><pre>lt.figure(); f4.plot.hist(alpha=0.5); igure size 432x288 with 0 Axes> Toyota Benz Honda</pre></td></f<>	<pre>lt.figure(); f4.plot.hist(alpha=0.5); igure size 432x288 with 0 Axes> Toyota Benz Honda</pre>
Frequency	25 - 20 - 15 - 10 -
In [77]:	5 - 50000 100000 150000 200000 250000 f4.plot.hist(stacked=True, bins=20);
	30 - Toyota Benz Honda
Frequency	15 - 10 - 5 -
In [78]: d	50000 100000 150000 200000 250000 f4["Toyota"].plot.hist(orientation="horizontal", cumulative=True);
70 60	000 - 000 - 000 -
40 30	000 - 0
	f4.plot.hist(orientation="horizontal", stacked=True, bins=20);
15	0000 - Honda
	0000 - 00
In [86]: d	f4["Toyota"].diff().hist();
4 -	
o - In [88]: d	f2.diff().hist(color="k", alpha=0.5, bins=50);
2	Toyota Benz 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
0 · 2 · 1 ·	-50000 Honda 50000 0 -100000 Ford 100000 1.0 0.5
b h	oyota_price = [] enz_price = [] onda_price = []
f f	<pre>onda_price = [] ord_price = [] or p in cars.head(10).Toyota: toyota_price.append(float(p)) or p in cars.head(10).Benz: benz_price.append(float(p))</pre>
f	<pre>or p in cars.head(10).Honda: honda_price.append(float(p)) or p in cars.head(10).Ford: ford_price.append(float(p))</pre>
d d	<pre>ourdata = zip(toyota_price, benz_price, honda_price, ford_price) f = pd.DataFrame(fourdata, columns=["Toyota", "Benz", "Honda", "Ford"]) f.plot.box();</pre>
15	
Tn [100	olor = {
}	<pre>olor = { "boxes": "DarkGreen", "whiskers": "DarkOrange", "medians": "DarkBlue", "caps": "Gray", f.plot.box(color=color, sym="r+");</pre>
20	
10	
	Toyota Benz Honda Ford f.plot.box(color=color, vert=False, positions=[1, 4, 5, 6]); Ford
Но	anda - IIII-lo Benz - IIII-lo
	yota
b. 25	<pre>lt.figure(); p = df.boxplot() 0000</pre>
15	
In [112	oyota_price = []
b h f	<pre>enz_price = [] onda_price = [] ord_price = [] or p in cars.head(10).Toyota: toyota_price.append(float(p))</pre>
f	<pre>or p in cars.head(10).Benz: benz_price.append(float(p)) or p in cars.head(10).Honda: honda_price.append(float(p)) or p in cars.head(10).Ford: </pre>
f d d	<pre>ford_price.append(float(p)) ourdata = zip(toyota_price, benz_price, honda_price, ford_price) f = pd.DataFrame(fourdata, columns=["Toyota", "Benz", "Honda", "Ford"]) f.plot.area();</pre> Toyota
35 30 25	0000 - Benz Toyota Benz O000 -
15 10	
25	<pre>f.plot.area(stacked=False); 0000 - 0000 -</pre>
15	0000 - 0000 - Ford
In []:	