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Exercise Set 21: "Compare Two Collections"

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ENGR 1330 Exercise Set 21

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import statistics import pandas as pd import numpy as np import matplotlib.pyplot as plt data= {"Amazon Branded Boxes":[1.25,1.16,1.33,1.15,1.23,1.20,1.32,1.28,1.21,1.14,1.17,1 "Walmart Branded Boxes":[0.89,1.01,0.97,0.95,0.94,1.02,0.98,1.06,0.98,0.94,1.02,0.98]}

Exercise

The data below are the impact impact strength of packaging materials in foot-pounds of two branded boxes. Produce a histogram of the two series, and determine if there is evidence of a difference in mean strength between the two brands.

Amazon Branded Boxes	Walmart Branded Boxes
1.25	0.89
1.16	1.01
1.33	0.97
1.15	0.95
1.23	0.94
1.20	1.02
1.32	0.98
1.28	1.06
1.21	0.98
1.14	0.94
1.17	1.02
1.34	0.98

Deliverables:

- Working scripts that produce perform the necessary plot
- Narrative (or print blocks) that supply answer questions

- CCMR citations for sources (URL for outside sources is OK)

Hints:

- A suggested set of code cells is listed below
- Add/remove cells as needed for your solution

In [8]:
```
#imports
import statistics
import numpy
import pandas
import matplotlib.pyplot as plt
```

In [16]:
```
lists ={"Amazon Branded Boxes":[1.25,1.16,1.33,1.15,1.23,1.20,1.32,1.28,1.21,1.14,1.17,
"Walmart Branded Boxes":[0.89,1.01,0.97,0.95,0.94,1.02,0.98,1.06,0.98,0.94,1.02,.98]}
```

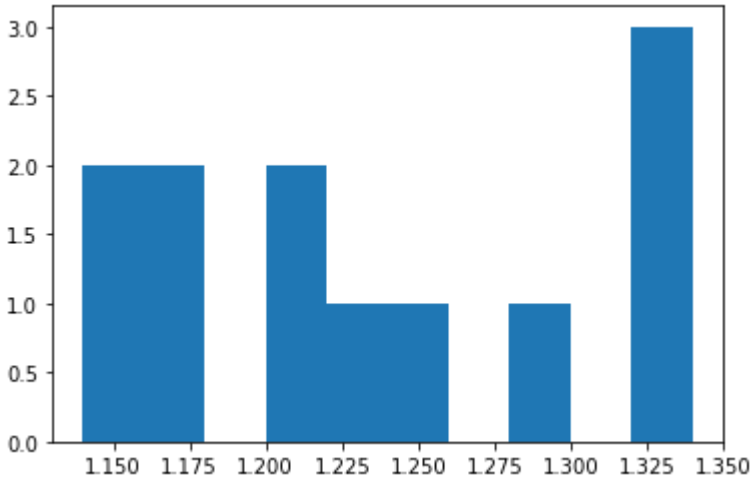
In [17]:
```
# describe lists/dataframe

df=pd.DataFrame(lists)
print(df)
df.describe()
```

```
    Amazon Branded Boxes  Walmart Branded Boxes
0                   1.25                   0.89
1                   1.16                   1.01
2                   1.33                   0.97
3                   1.15                   0.95
4                   1.23                   0.94
5                   1.20                   1.02
6                   1.32                   0.98
7                   1.28                   1.06
8                   1.21                   0.98
9                   1.14                   0.94
10                  1.17                   1.02
11                  1.34                   0.98
```

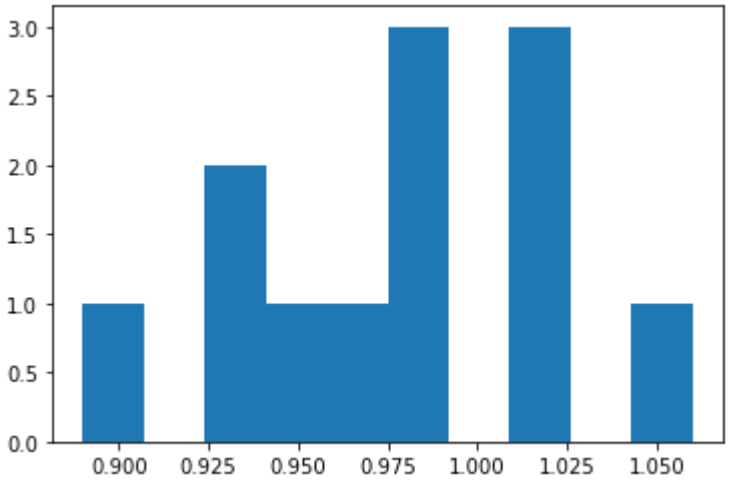
Out[17]:

	Amazon Branded Boxes	Walmart Branded Boxes
count	12.000000	12.000000
mean	1.231667	0.978333
std	0.072216	0.045494
min	1.140000	0.890000
25%	1.167500	0.947500
50%	1.220000	0.980000
75%	1.290000	1.012500
max	1.340000	1.060000

In [18]:
```
# histograms
plt.hist(lists['Amazon Branded Boxes'])
plt.show()
plt.hist(lists['Walmart Branded Boxes'])
plt.show
```



Out[18]: <function matplotlib.pyplot.show(close=None, block=None)>



interpret findings (could be a markdown cell, or embed into code)

The Amazon branded boxes are overall better as they have

have a higher strength on averge.

In [ ]: