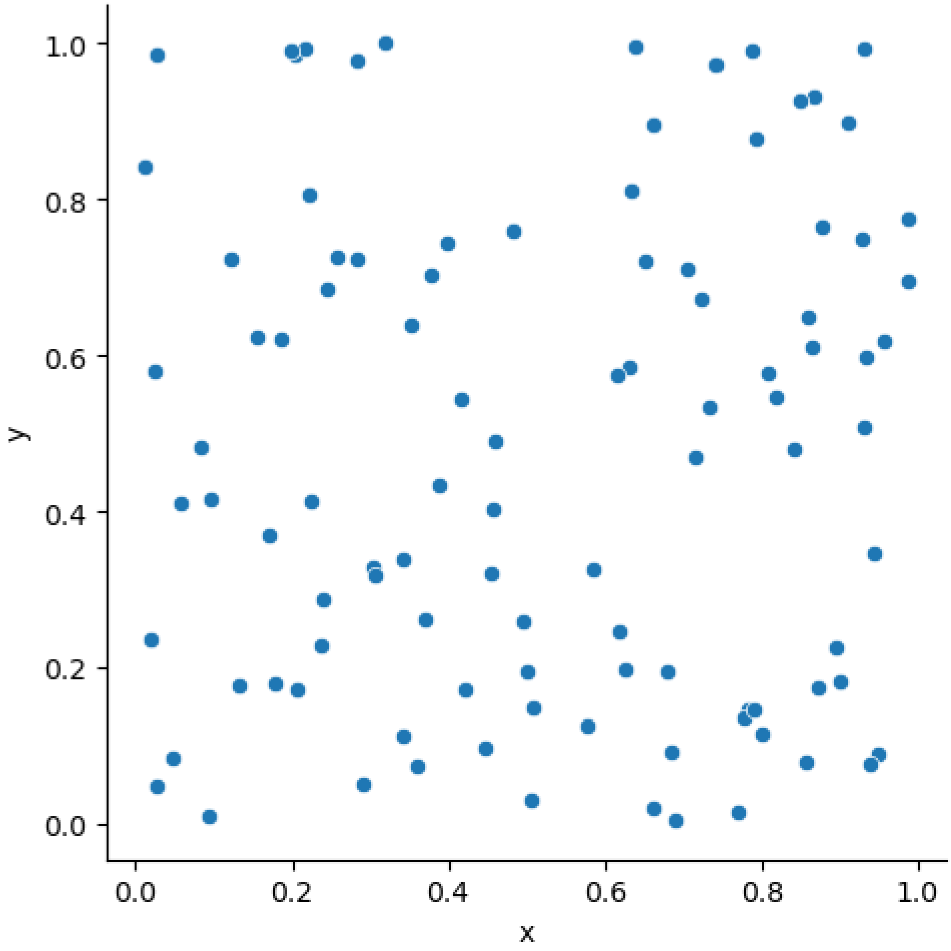
In [1]:

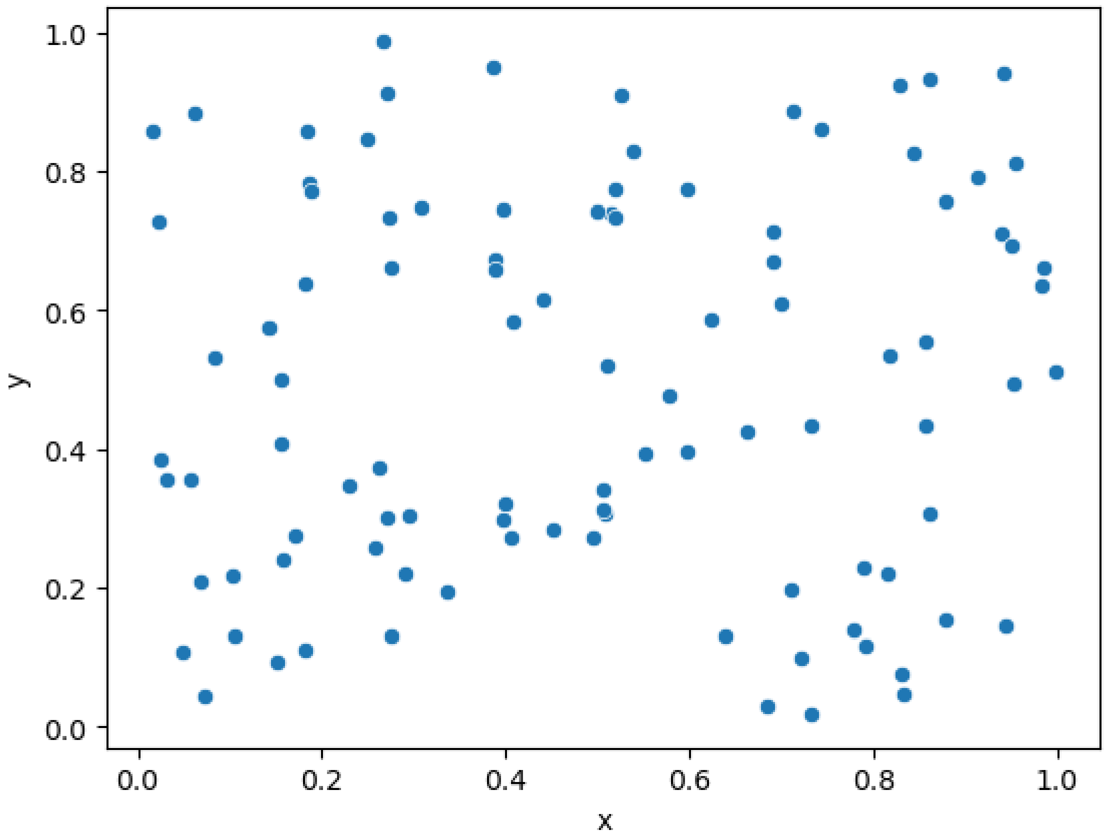
```
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
import pandas as pd

# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca

# Relational Plot (Relplot)
sns.relplot(x='x', y='y', data=data)
```

Out[1]:

```
<seaborn.axisgrid.FacetGrid at 0x259db41a750>
```



```
In [2]: data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
        # Scatter Plot (scatterplot)
        plt.figure()
        sns.scatterplot(x='x', y='y', data=data)

Out[2]: <Axes: xlabel='x', ylabel='y'>
```

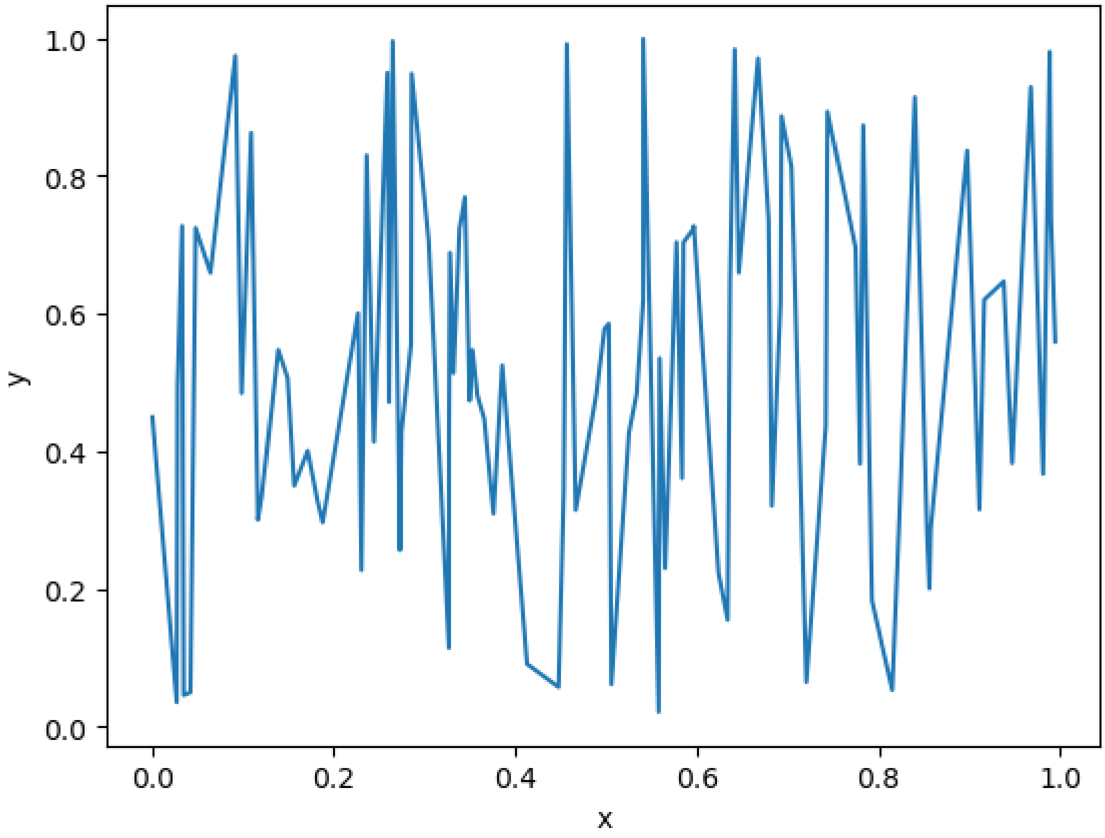


In [3]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
# Line Plot (lineplot)
plt.figure()
sns.lineplot(x='x', y='y', data=data)
```

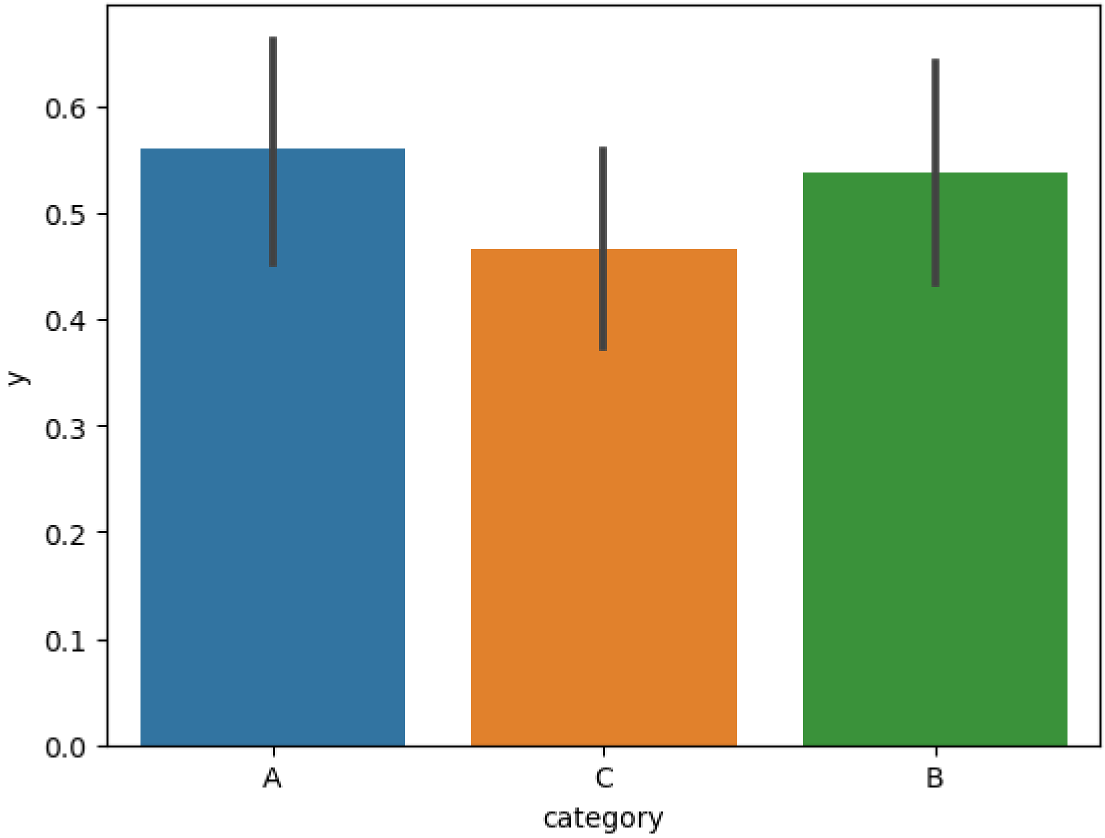
Out[3]:

```
<Axes: xlabel='x', ylabel='y'>
```



```
In [12]: # Create some example data
         data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
         # Categorical Plots

         # Bar Plot
         plt.figure()
         sns.barplot(x='category', y='y', data=data)
```

```
Out[12]: <Axes: xlabel='category', ylabel='y'>
```

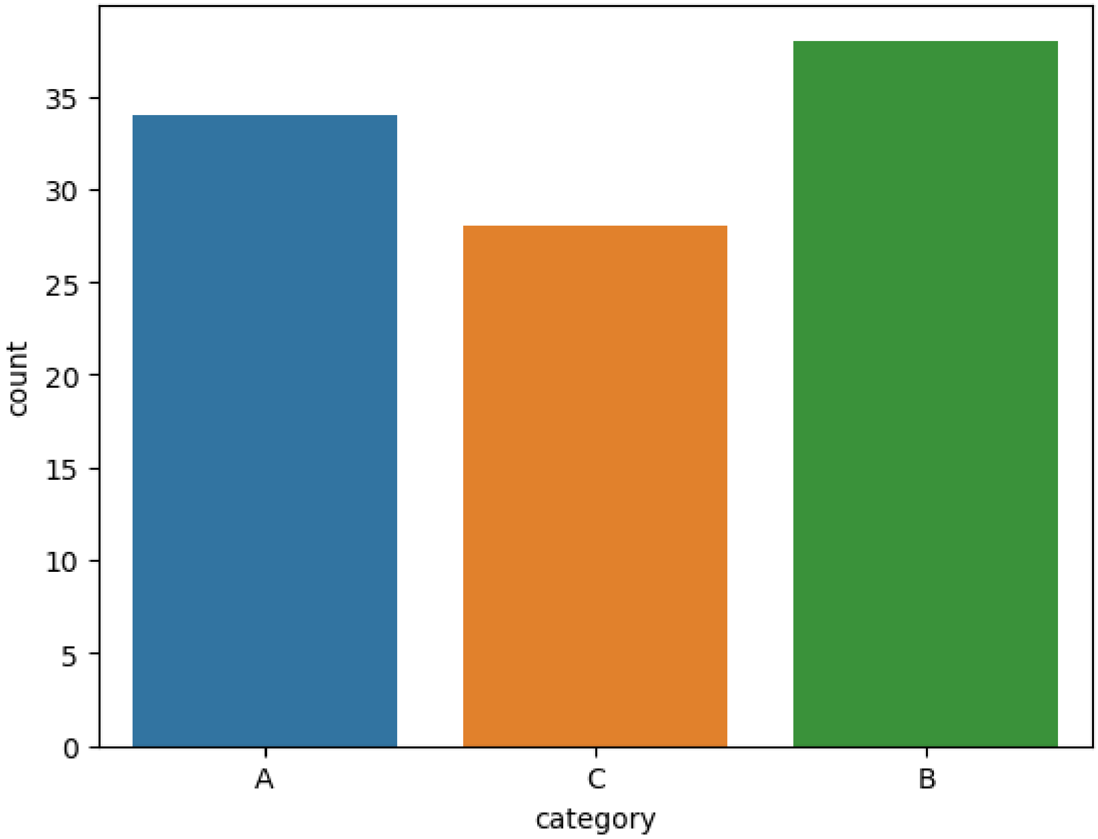


In [13]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
# Count Plot
plt.figure()
sns.countplot(x='category', data=data)
```

Out[13]:

```
<Axes: xlabel='category', ylabel='count'>
```

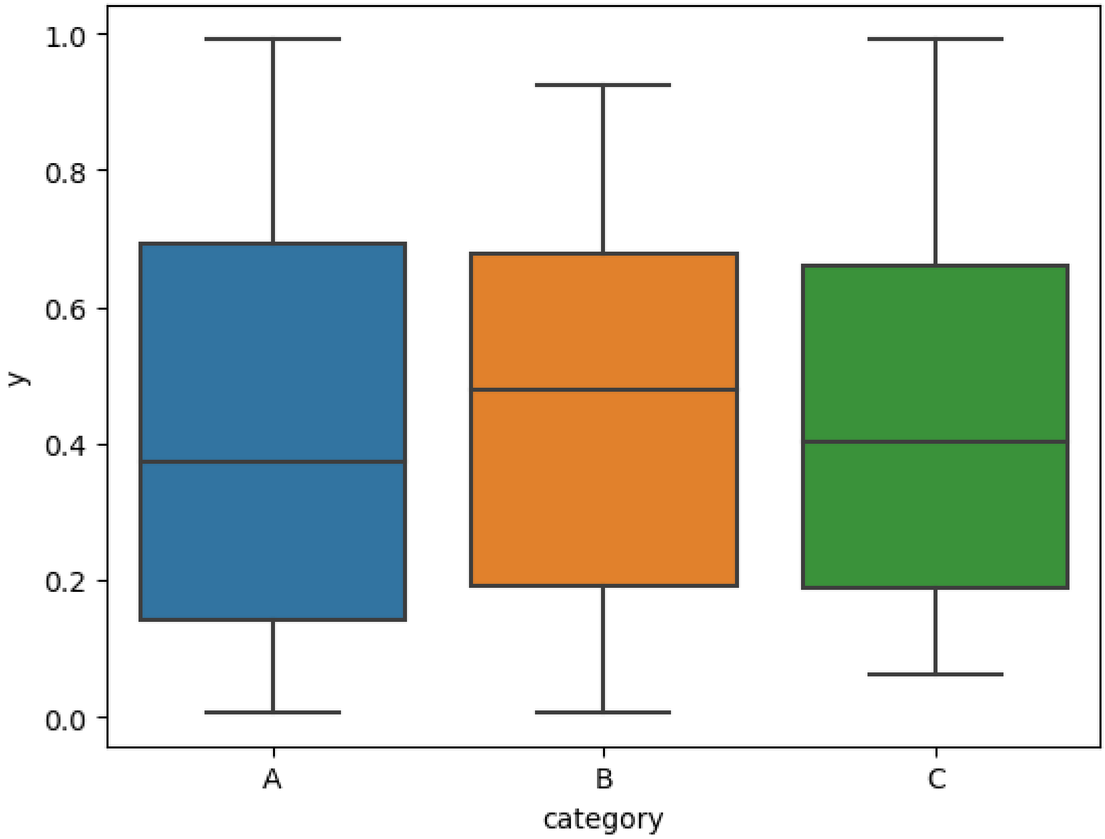


In [14]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
# Box Plot
plt.figure()
sns.boxplot(x='category', y='y', data=data)
```

Out[14]:

```
<Axes: xlabel='category', ylabel='y'>
```

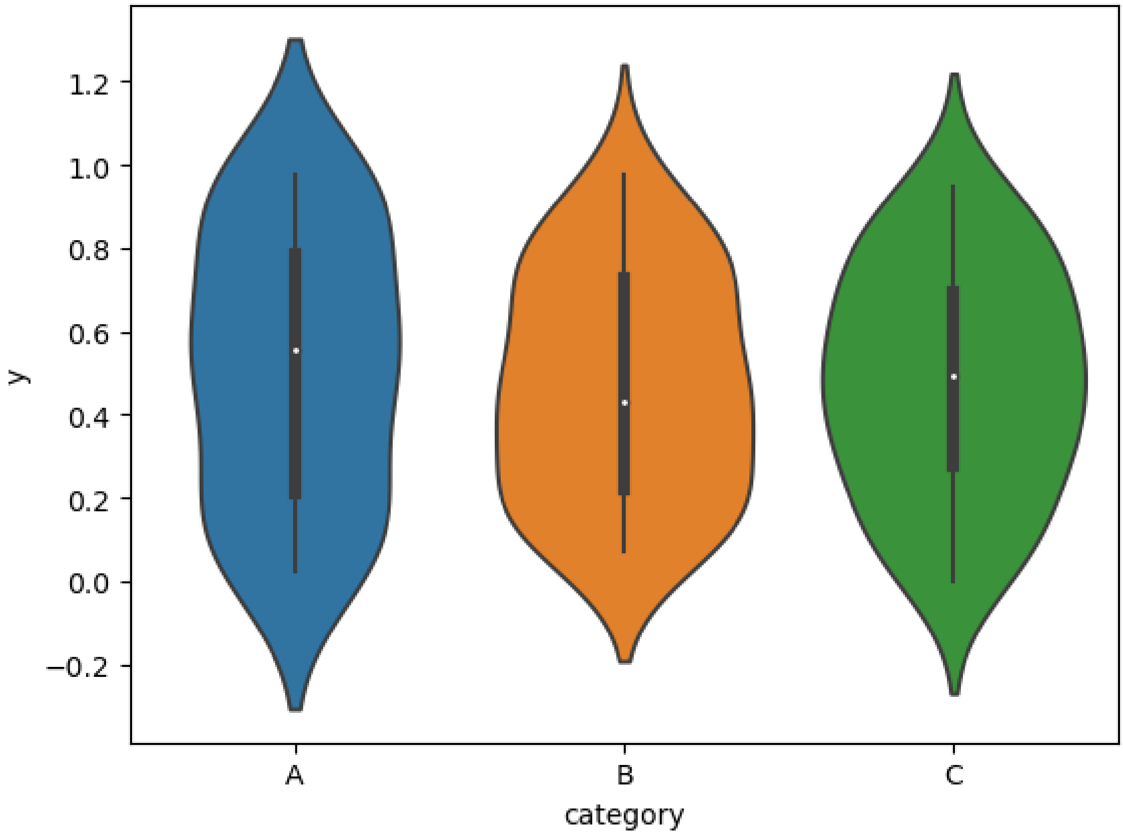


In [15]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
# Violin Plot
plt.figure()
sns.violinplot(x='category', y='y', data=data)
```

Out[15]:

```
<Axes: xlabel='category', ylabel='y'>
```

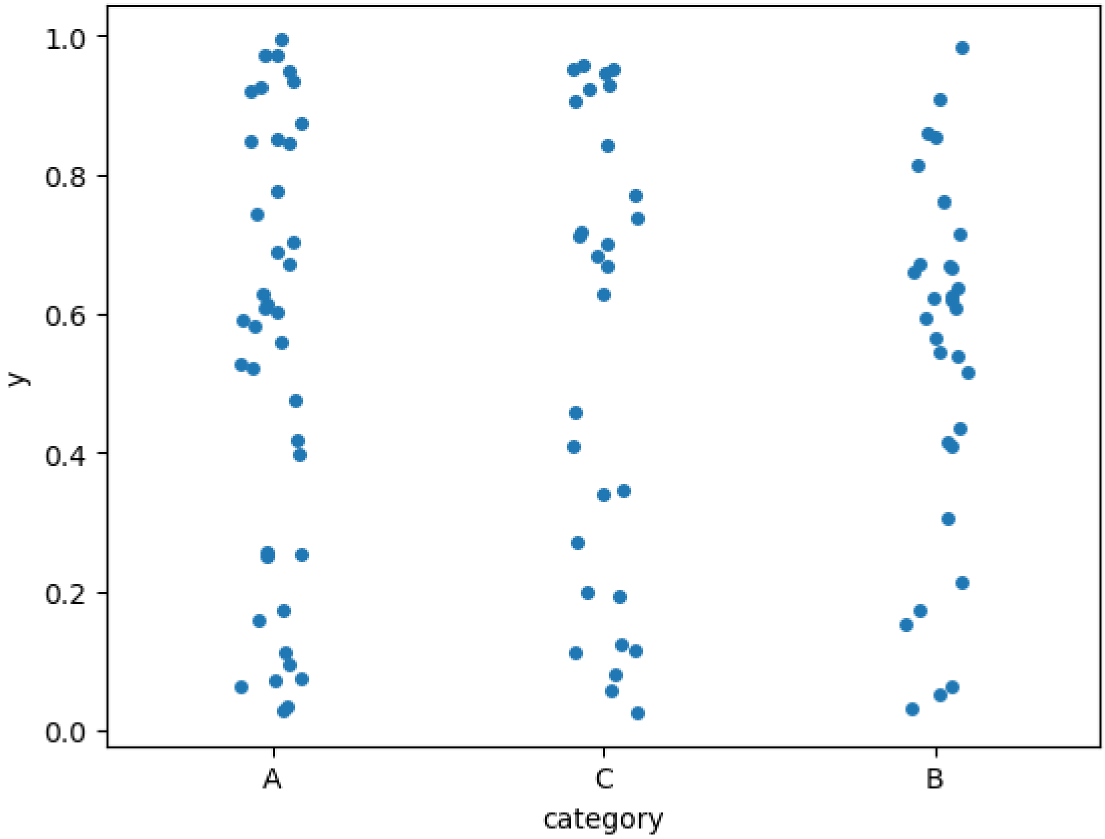


In [16]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
# Strip Plot
plt.figure()
sns.stripplot(x='category', y='y', data=data)
```

Out[16]:

```
<Axes: xlabel='category', ylabel='y'>
```

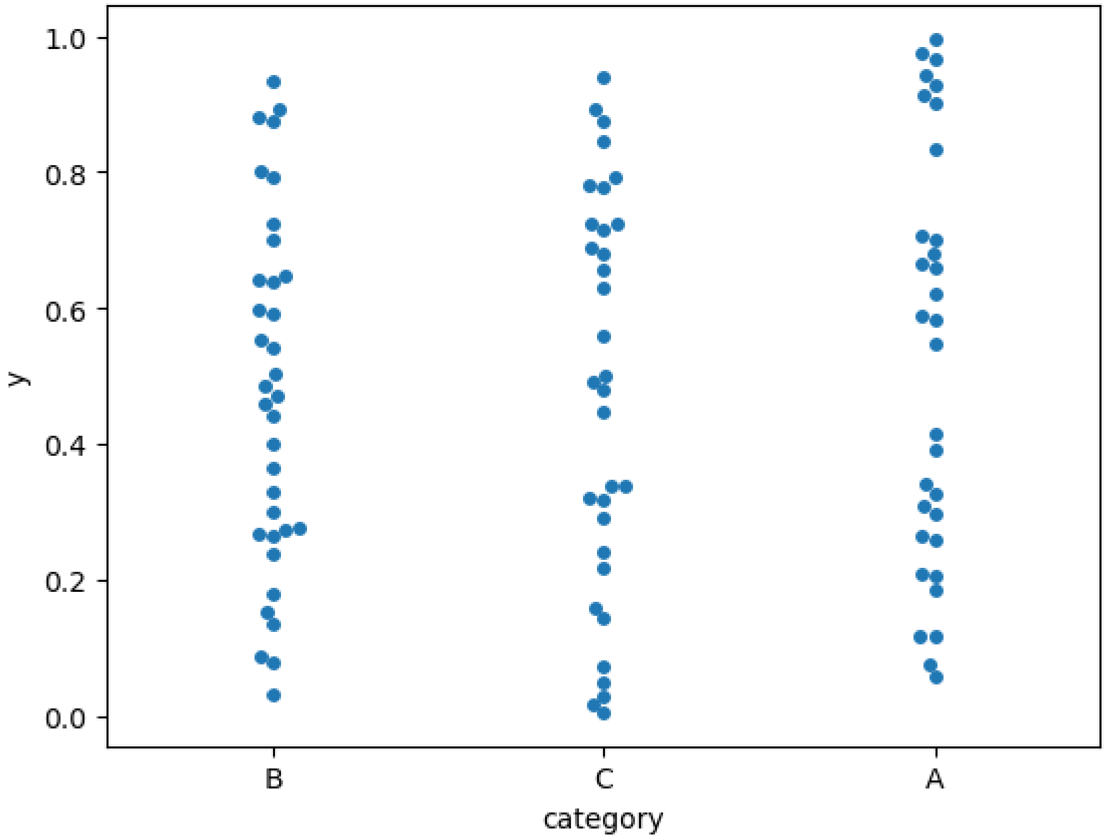


In [18]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
# Swarm Plot
plt.figure()
sns.swarmplot(x='category', y='y', data=data)
```

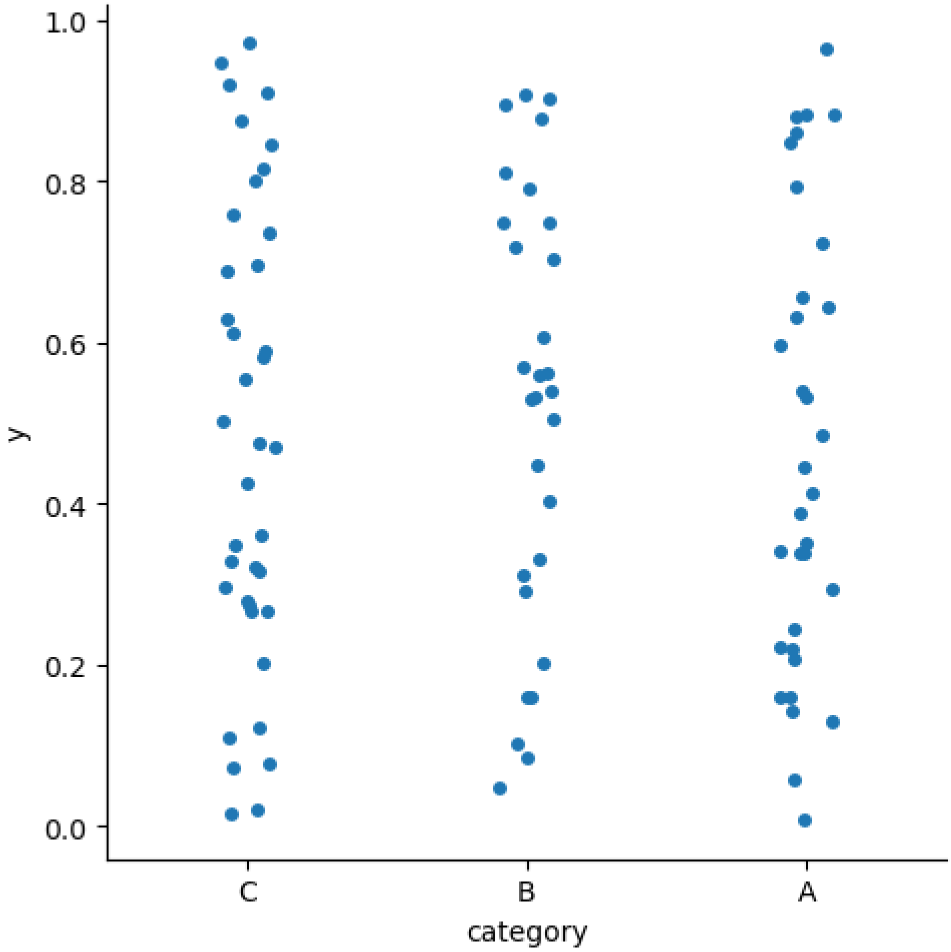
Out[18]:

```
<Axes: xlabel='category', ylabel='y'>
```



```
In [19]: # Create some example data
         data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100), 'ca
         # Factor Plot (deprecated in newer versions)
         # Use catplot instead
         plt.figure()
         sns.catplot(x='category', y='y', data=data)

         plt.show()
```

```
<Figure size 640x480 with 0 Axes>
```

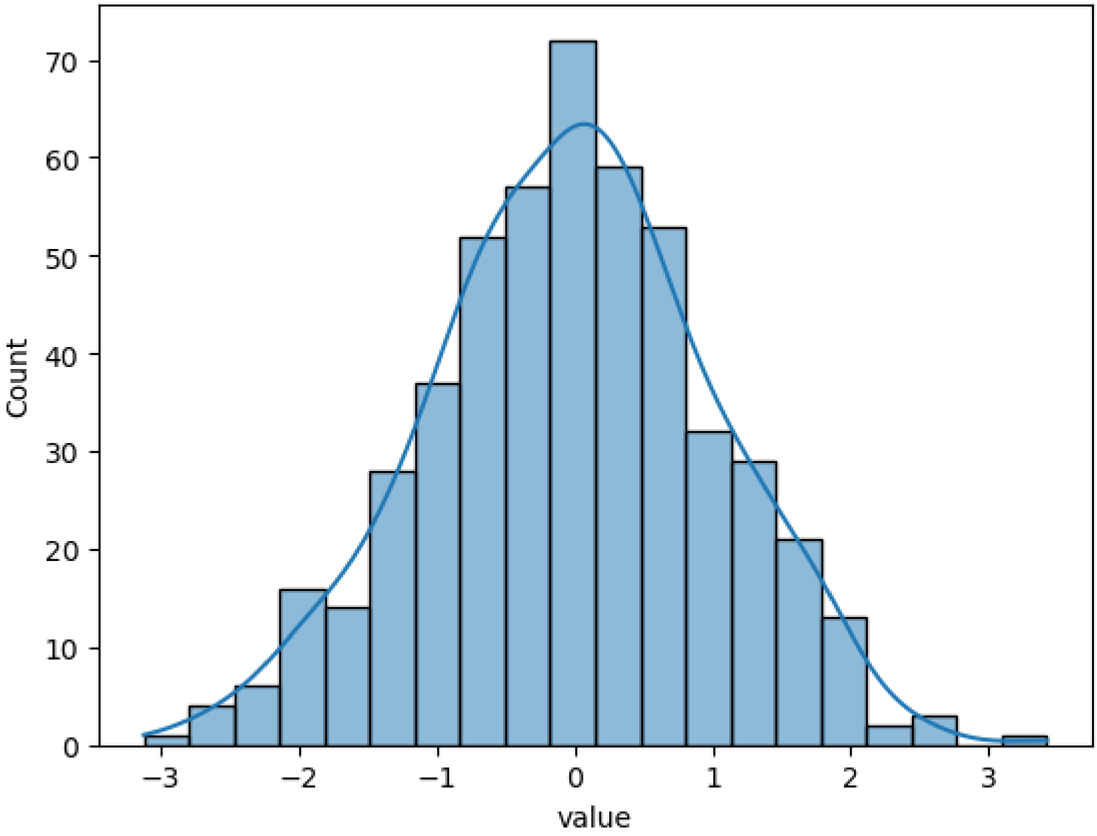


In [20]:

```
# Create some example data
data = pd.DataFrame({'value': np.random.randn(500)})
# Distribution Plots

# Histogram (histplot)
plt.figure()
sns.histplot(data['value'], kde=True)
```

Out[20]:

```
<Axes: xlabel='value', ylabel='Count'>
```



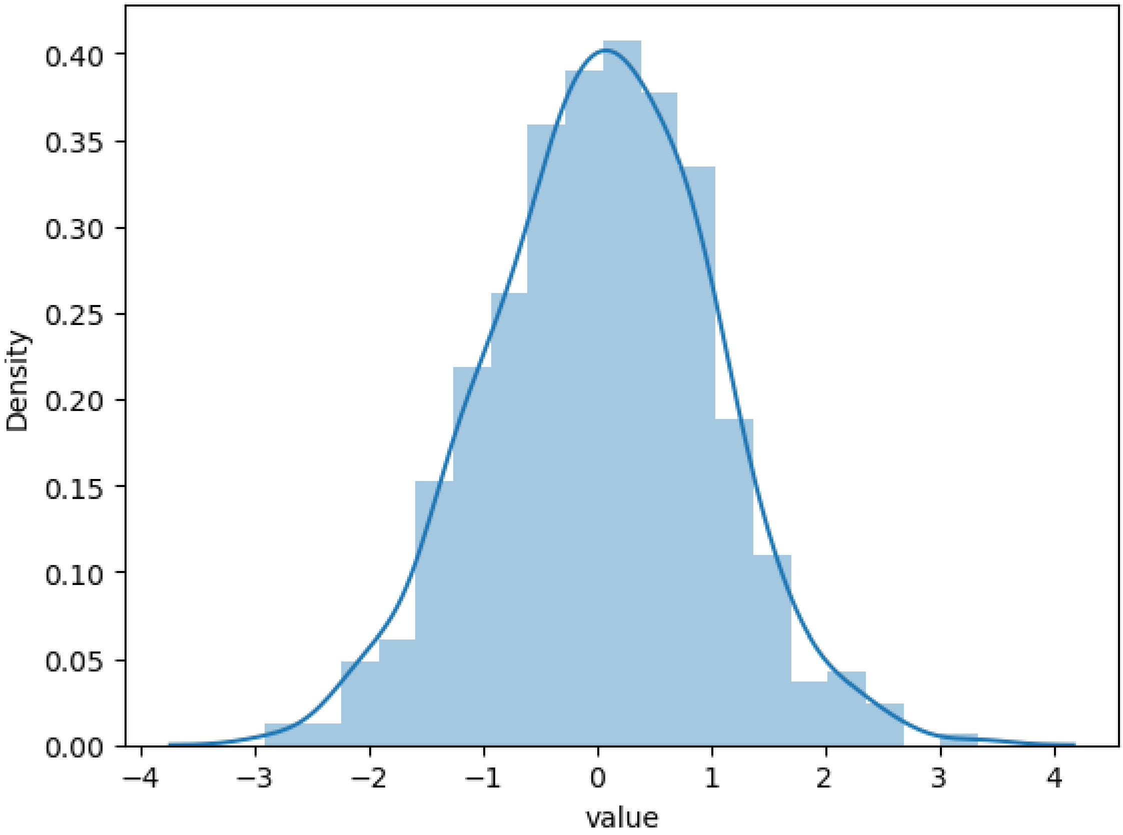
In [24]:

```python
# Create some example data
data = pd.DataFrame({'value': np.random.randn(500)})
# Distribution Plot (distplot)
plt.figure()
sns.distplot(data['value'], hist=True, kde=True)
```

```
C:\Users\Lenovo\AppData\Local\Temp\ipykernel_11336\1194914956.py:5: UserWa
rning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.
0.

Please adapt your code to use either `displot` (a figure-level function wi
th
similar flexibility) or `histplot` (an axes-level function for histogram
s).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751 (https://
gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751)

  sns.distplot(data['value'], hist=True, kde=True)
```

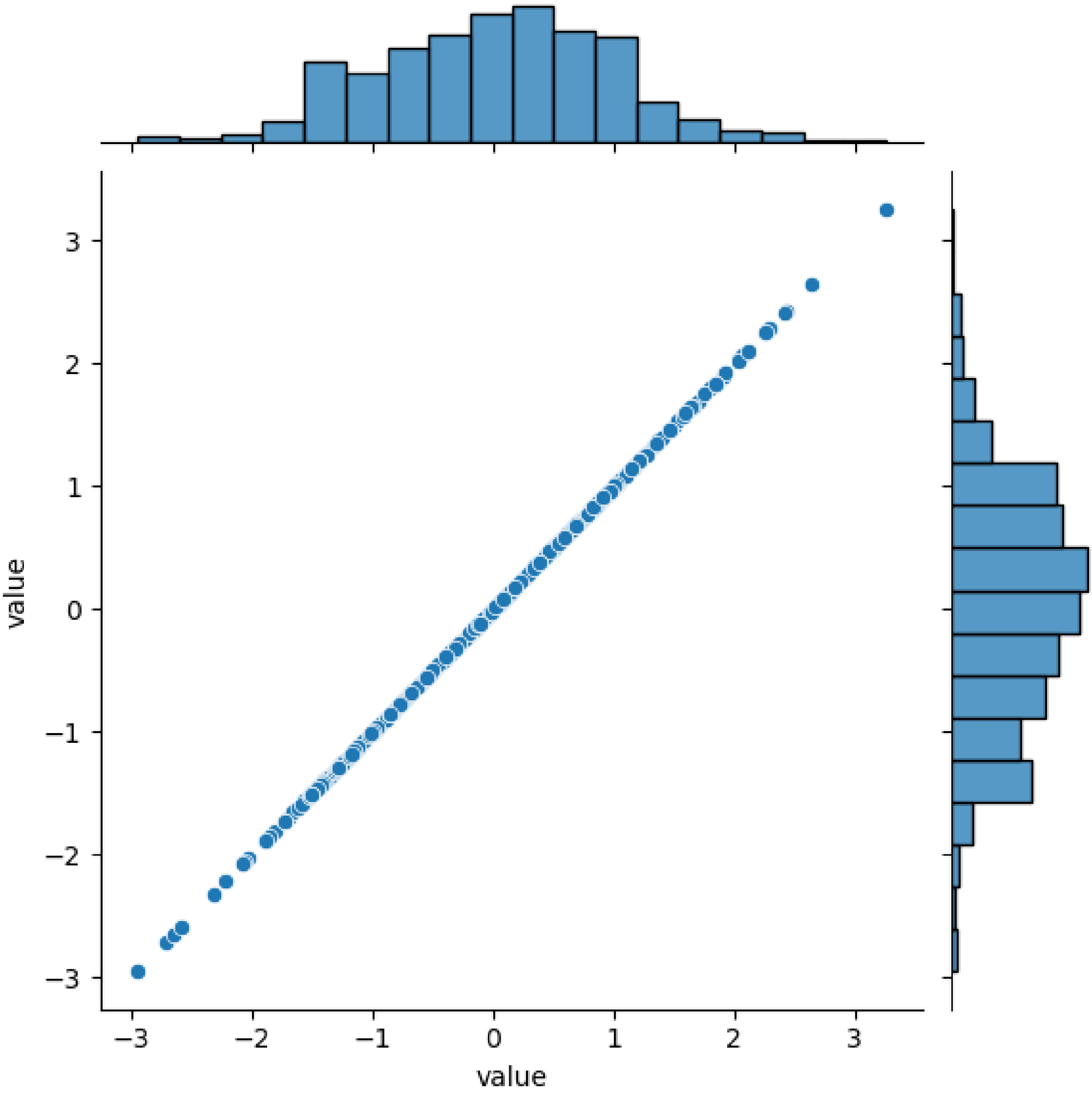
Out[24]:

```
<Axes: xlabel='value', ylabel='Density'>
```

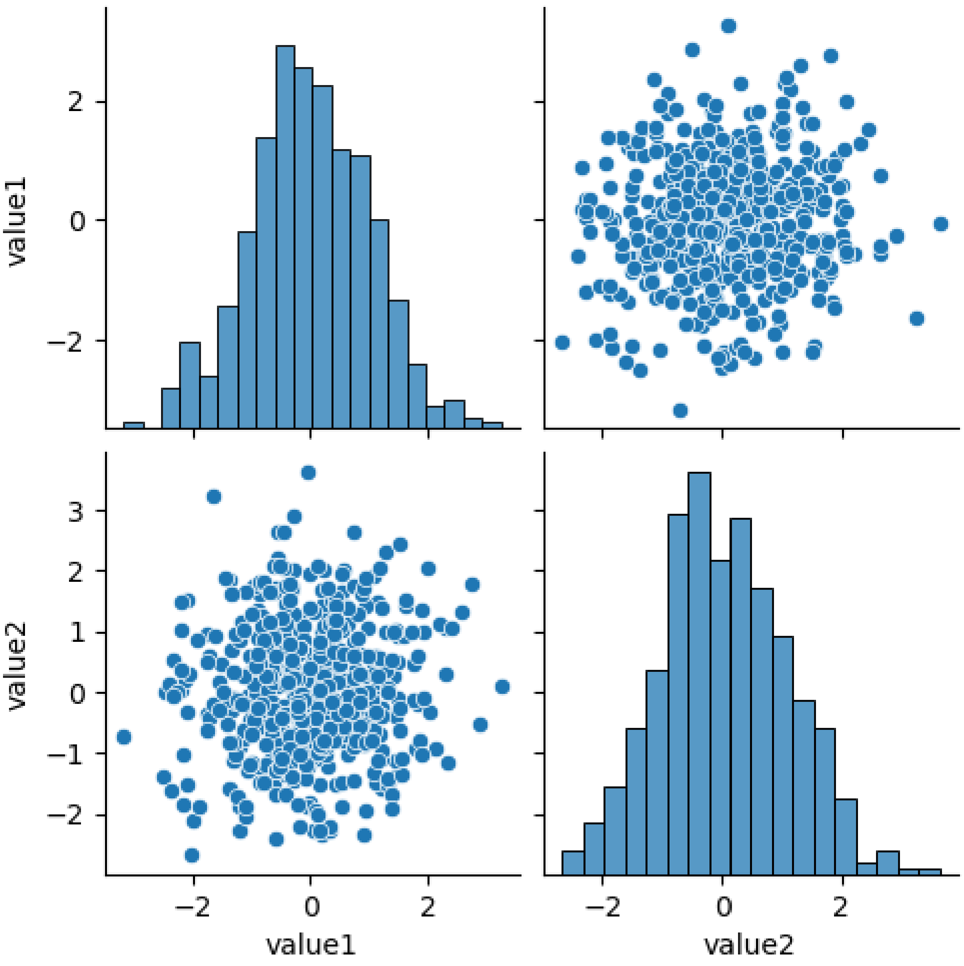


```
In [25]: # Create some example data
         data = pd.DataFrame({'value': np.random.randn(500)})

         # Joint Plot (jointplot)
         plt.figure()
         sns.jointplot(x='value', y='value', data=data, kind='scatter')
```

```
Out[25]: <seaborn.axisgrid.JointGrid at 0x259dc7c6650>

         <Figure size 640x480 with 0 Axes>
```



```
In [26]: # Create some example data
         data = pd.DataFrame({'value': np.random.randn(500)})

         # Pair Plot (pairplot)
         data_pairplot = pd.DataFrame({'value1': np.random.randn(500), 'value2': np.r
         sns.pairplot(data_pairplot)

Out[26]: <seaborn.axisgrid.PairGrid at 0x259ddf235d0>
```

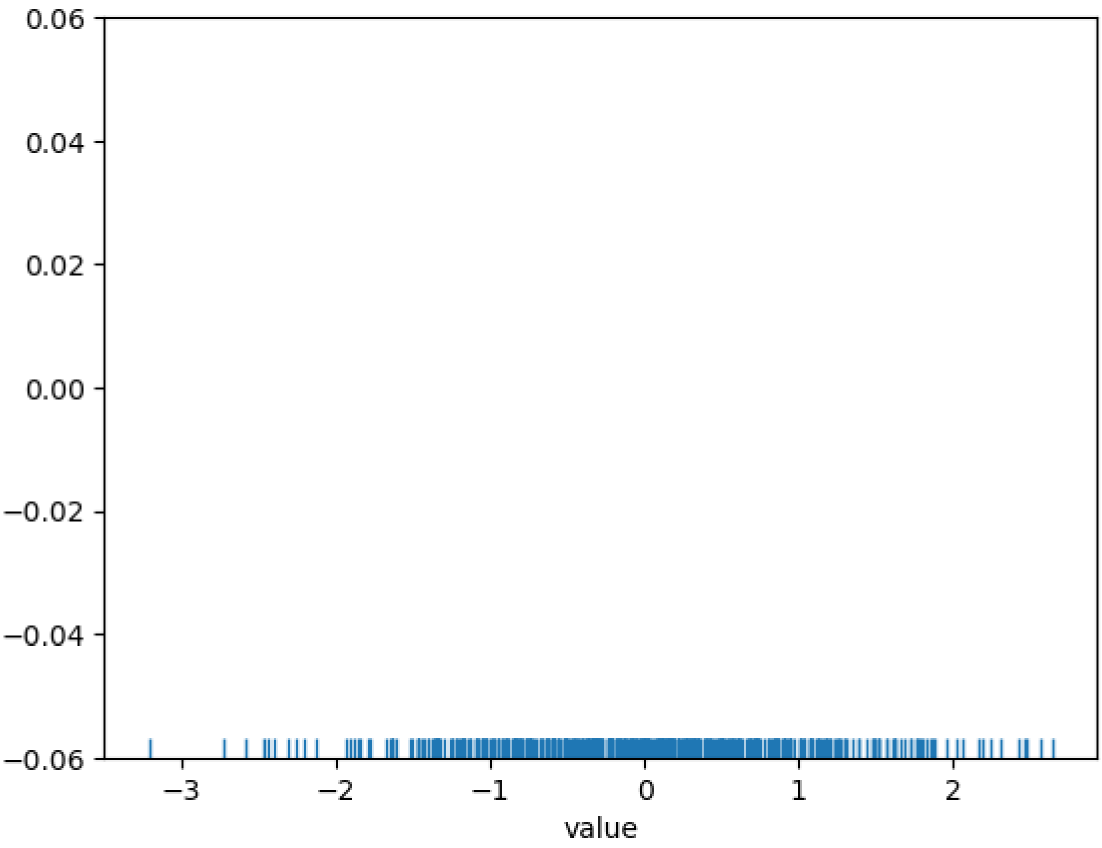


In [27]:

```python
# Create some example data
data = pd.DataFrame({'value': np.random.randn(500)})
# Rug Plot (rugplot)
plt.figure()
sns.rugplot(data['value'])
```

Out[27]:

```
<Axes: xlabel='value'>
```



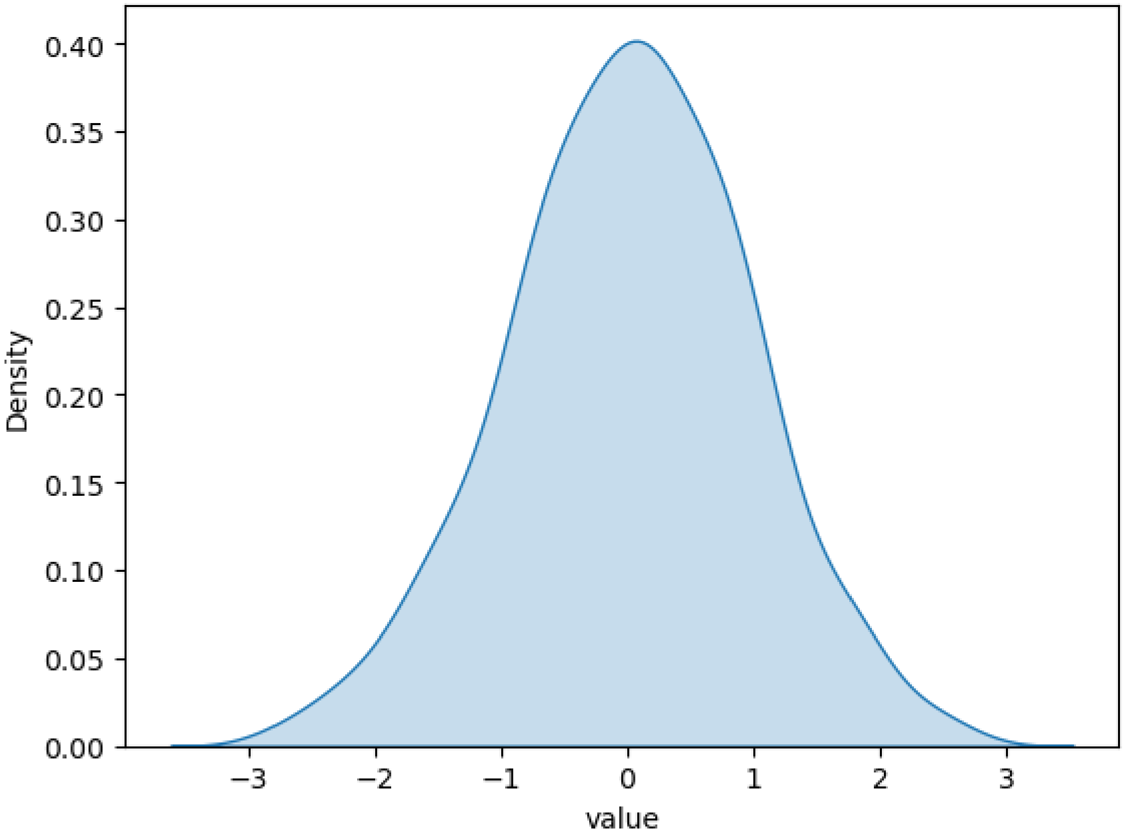
In [28]:

```
# Create some example data
data = pd.DataFrame({'value': np.random.randn(500)})
# Kernel Density Estimation Plot (kdeplot)
plt.figure()
sns.kdeplot(data['value'], shade=True)
```

```
C:\Users\Lenovo\AppData\Local\Temp\ipykernel_11336\1321748908.py:5: Future
Warning:

`shade` is now deprecated in favor of `fill`; setting `fill=True`.
This will become an error in seaborn v0.14.0; please update your code.

  sns.kdeplot(data['value'], shade=True)
```

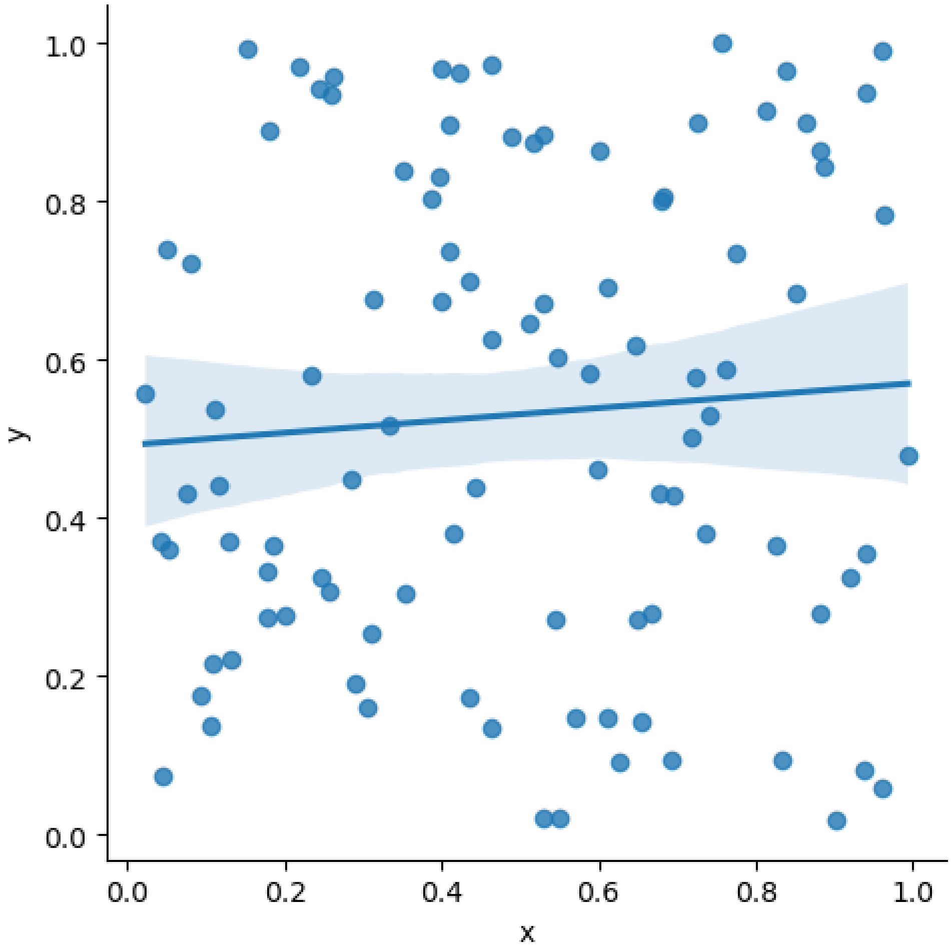
Out[28]:

```
<Axes: xlabel='value', ylabel='Density'>
```



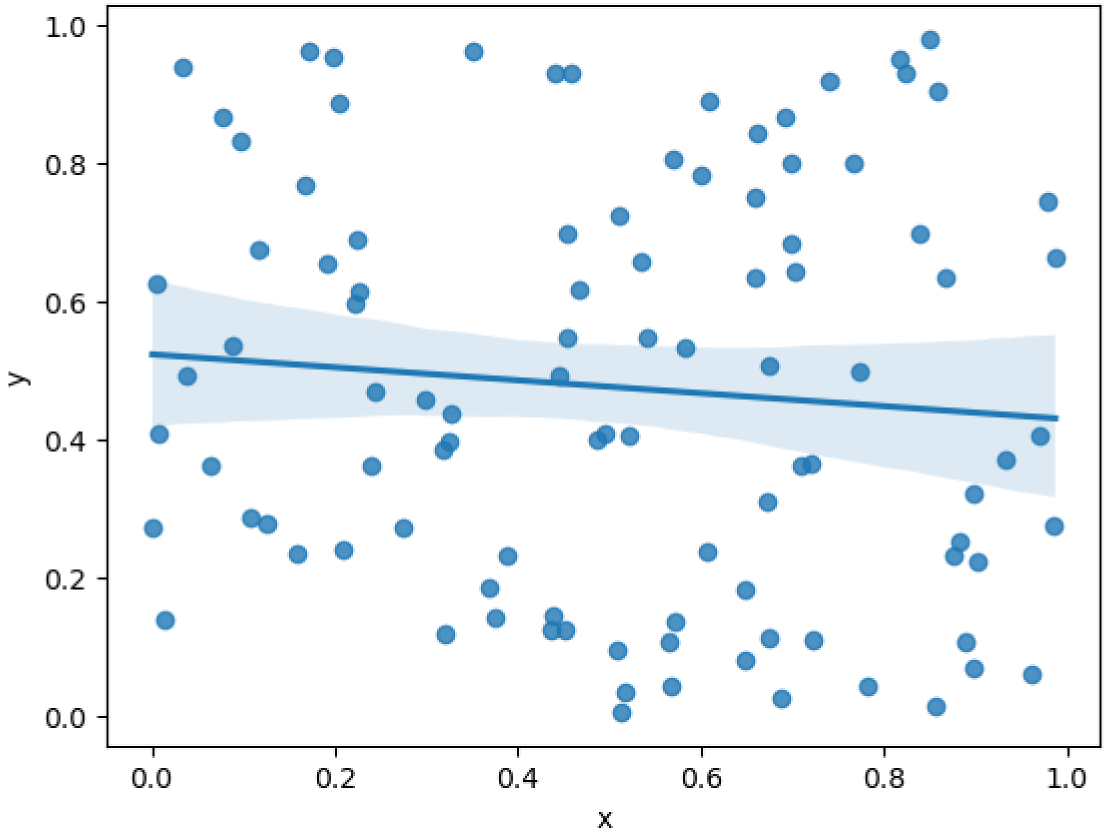
```
In [29]: # Create some example data
         data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100)})

         # Regression Plots

         # lmplot
         sns.lmplot(x='x', y='y', data=data)
```

```
Out[29]: <seaborn.axisgrid.FacetGrid at 0x259de5f71d0>
```



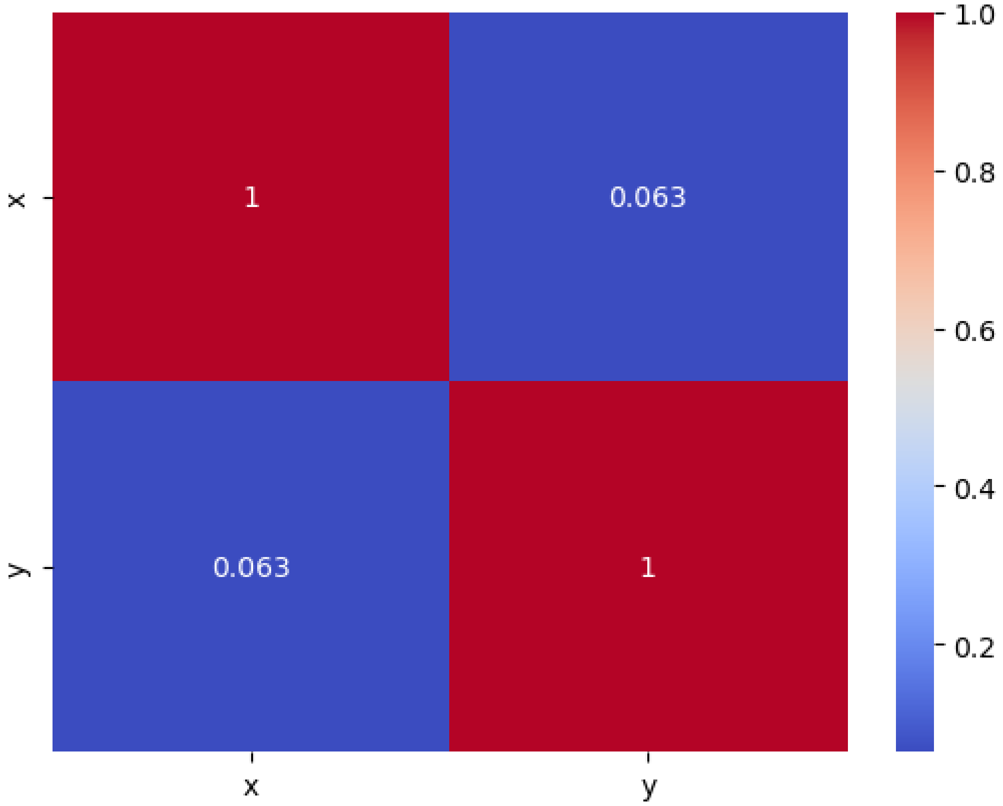
```
In [30]: # Create some example data
         data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100)})
         # regplot
         plt.figure()
         sns.regplot(x='x', y='y', data=data)
```

```
Out[30]: <Axes: xlabel='x', ylabel='y'>
```



In [33]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100)})

#Matrix plot

# Create a correlation matrix for heatmap and clustermap
correlation_matrix = data.corr()

# Heatmap
plt.figure()
sns.heatmap(correlation_matrix, annot=True, cmap='coolwarm')


plt.show()
```

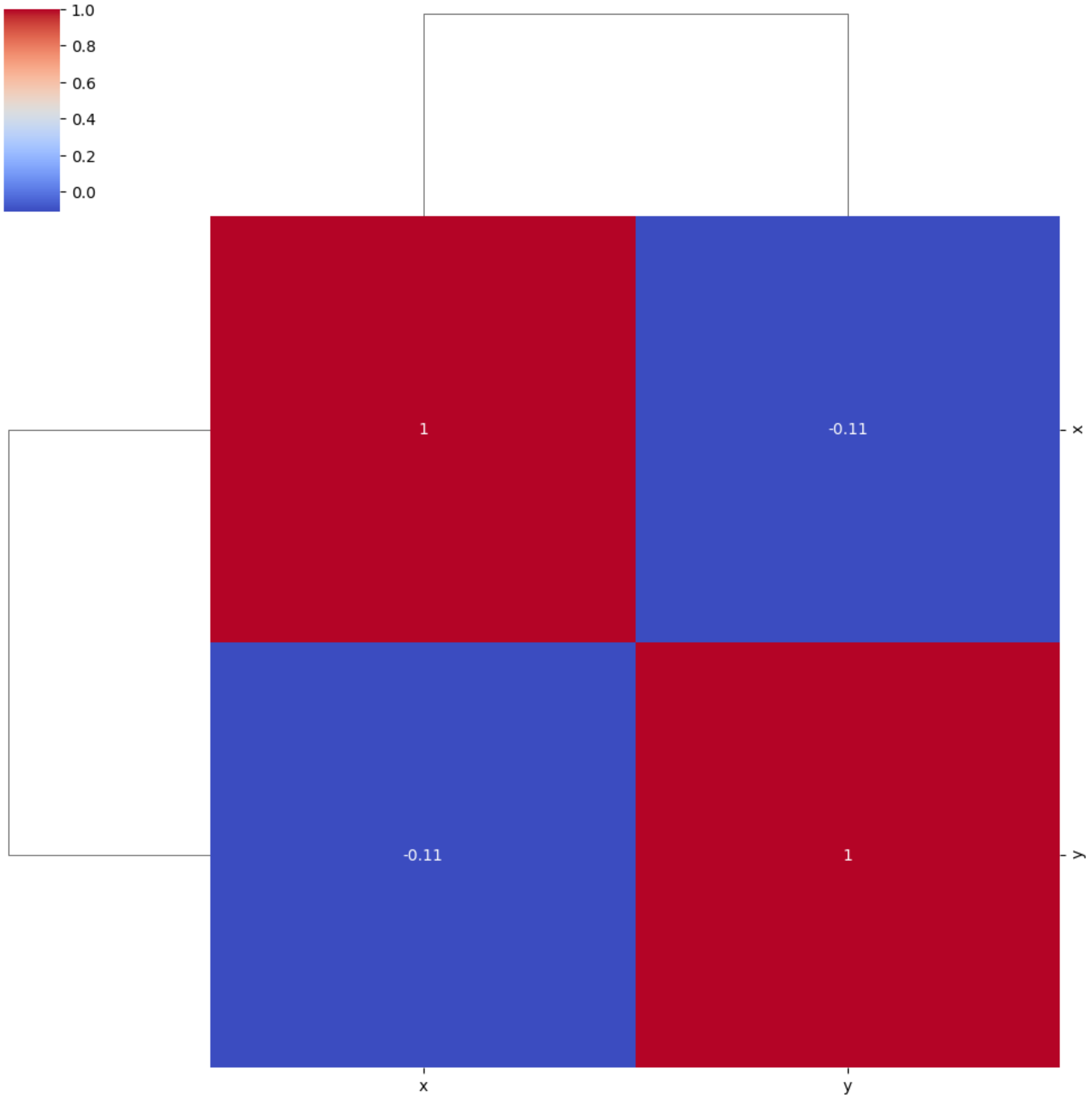


In [32]:

```
# Create some example data
data = pd.DataFrame({'x': np.random.rand(100), 'y': np.random.rand(100)})
# Clustermap
plt.figure()
sns.clustermap(correlation_matrix, annot=True, cmap='coolwarm')
```

Out[32]:

```
<seaborn.matrix.ClusterGrid at 0x259de768d90>

<Figure size 640x480 with 0 Axes>
```



In [ ]: