STANDARD NORMAL DISTRIBUTION

INFERENTIAL STATISTICS

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Standard Normal Distribution

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```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from scipy import stats
```

Z-score

```python
# Creating a Dataframe
df = pd.DataFrame([1,2,2,3,3,3,4,4,5],columns=['Dataset'])
df
```

Open 'df' in Data Wrangler

```python
# Summary of Statistics
df.describe()
```

```python
# Z-scores
df['Z-score'] = stats.zscore(df['Dataset'],ddof=1)
df
```

Open 'df' in Data Wrangler

```python
# Load current dataset
df = pd.read_csv(r"raw\current-data.csv")
df
```

Open 'df' in Data Wrangler

```python
# Summary of DataFrame
df.info()
```

```python
# Summary of Statistics
df.describe()
```

```python
# Z-scores
df['Z-score'] = 
```

```python
# Z-scores Summary of Statistics
df['Z-score'].describe()
```

Histogram

```python
# Histogram plot
plt.hist(df['Current'], bins=5)
plt.show()
```

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Normal Distribution

```python
# Normal Distribution Curve
mean = df['Current'].mean()
std = df['Current'].std(ddof=1)

# x-axis
x_min = df['Current'].min()
x_max = df['Current'].max()

x = np.linspace(x_min, x_max, 100)
p = stats.norm.pdf(x, mean, std)

plt.plot(x, p)

plt.show()
```

Python

```python
# Histogram plot
plt.hist(df['Current'], bins=5)

# Normal Distribution Curve
p = stats.norm.pdf(x, mean, std)

plt.plot(x, p)
plt.show()
```

Python

Standard Normal Distribution N(0,1)

```python
# Standard Normal Distribution N(0,1)
# x-axis
x_max = df['Z-score'].max()
x_min = df['Z-score'].min()

x = np.linspace(x_min,x_max,100)

p = stats.norm.pdf(x, df['Z-score'].mean(), df['Z-score'].std(ddof=1))

plt.plot(x, p)
plt.show()
```

Python