

**Be Kind
To Yourself**



**LESS
STRESS!**

VISUALIZING SCORES

BDI

**HEALTH
IS
WEALTH**



**IT'S OKAY TO
ASK FOR HELP**

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Jones**

SCI | Final Project

INRTRODUCTION

- Purpose Of Presentation is to understand relationship between BDI and Yoga
- What is BDI?
- Goals
 - Visualize Distribution of BDI Scores
 - Analyze Feature Correlations
 - Asses Impact of Treatment Duration
 - Find Patterns & Trends

WE CAN
DO IT!



1

OVERVIEW OF VISUALIZATIONS

Types of Visualizations used

- Histogram of BDI Scores
- Heatmap of Feature Correlations
- Scatter Plot of BDI Scores by Treatment Duration
- Box Plot of Features
- Histogram of BDI Change Score

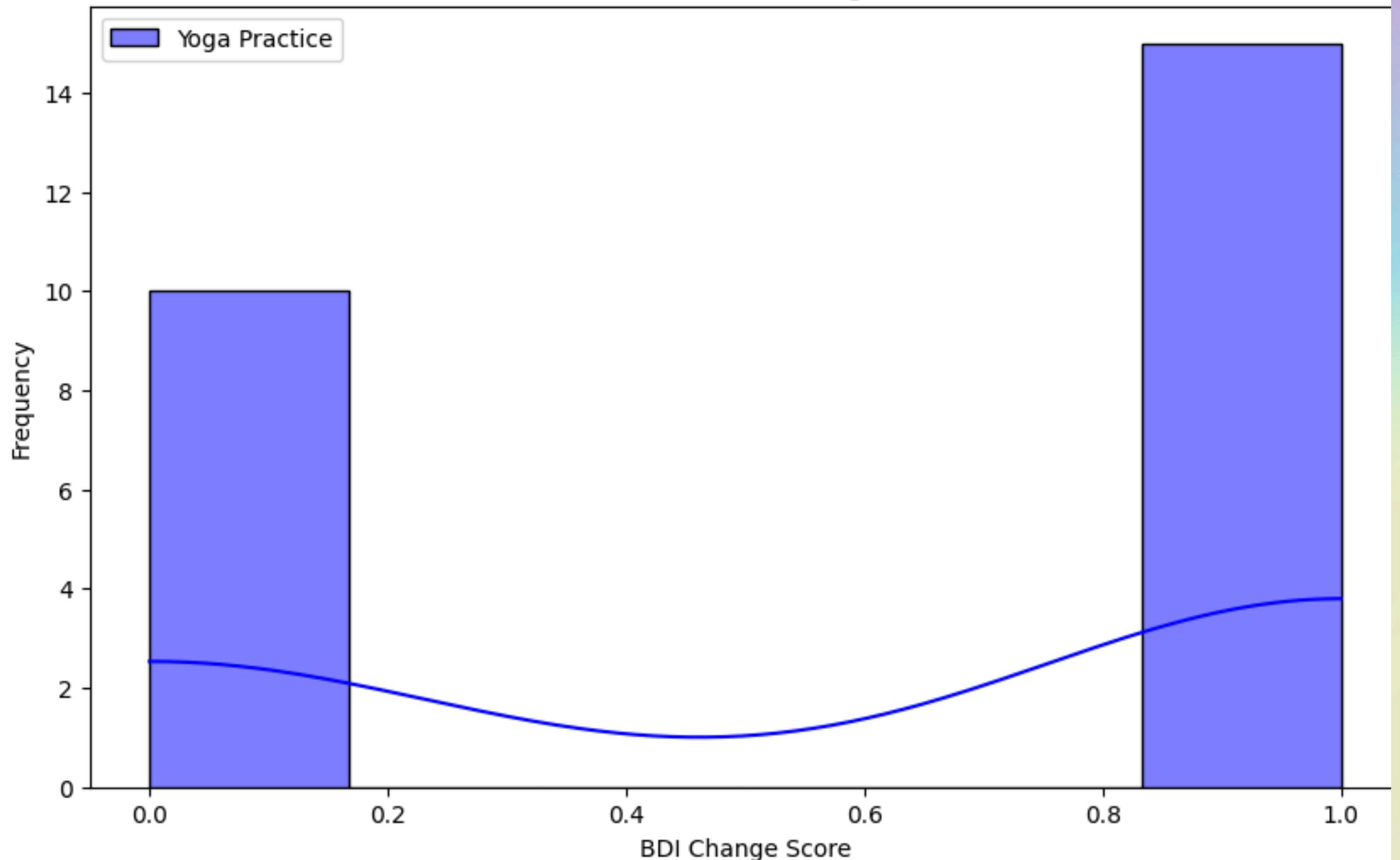


BDI SCORE HISTOGRAM

Illustration of BDI Change Scores

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Distribution of BDI Change Scores



Y-Axis = Frequency

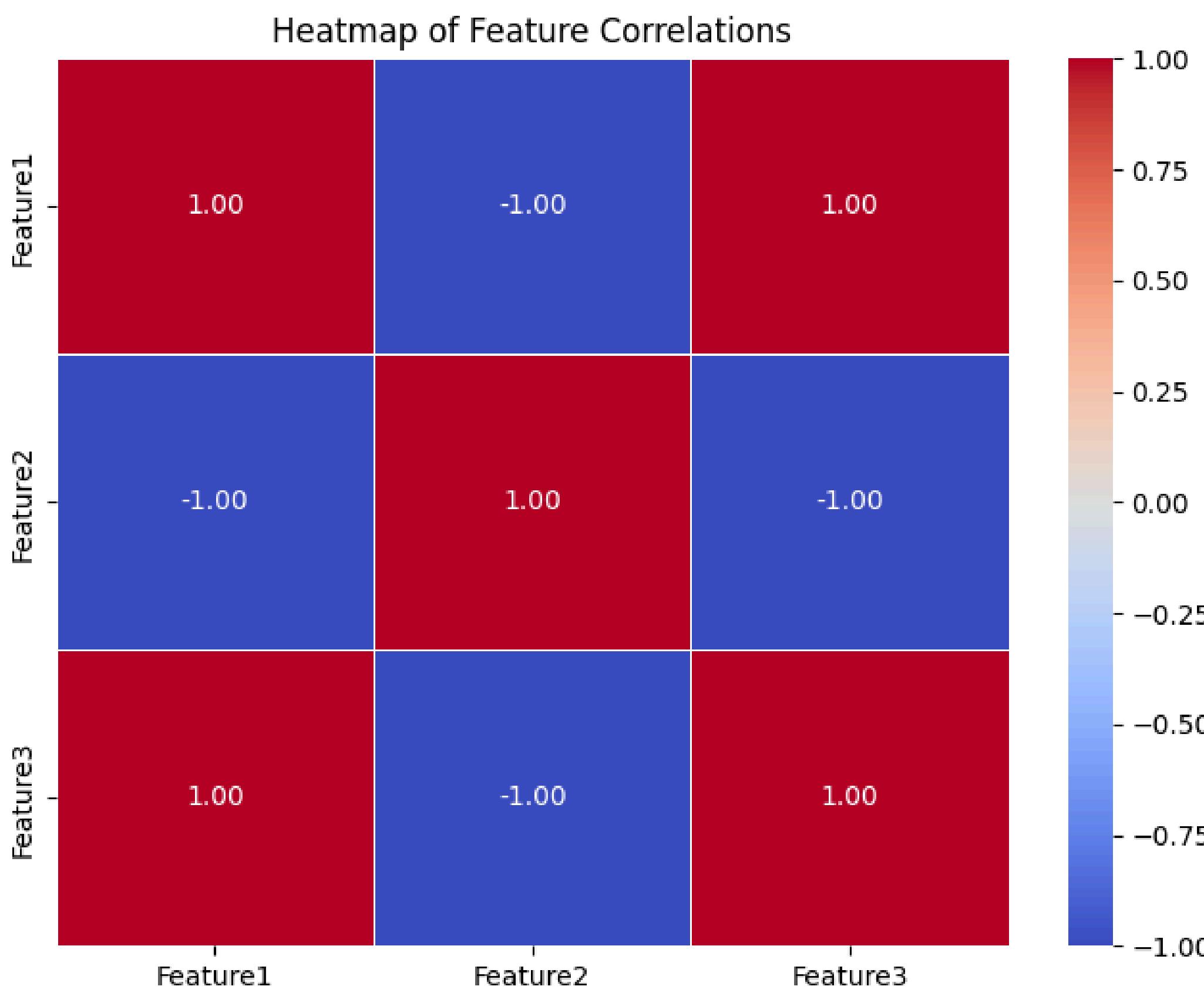
Frequency = How many
experienced a BDI change score

X-Axis = BDI Change Score

BDI Range = 0 to 1

- **Bimodal Distribution**
 - 2 Peaks in Data
 - Higher Peak = Max Improvement
 - Lower Peak = No Change
- **Frequencies**
 - High Frequency of Max. Improvement
 - High Frequency of No Change peaks at BDI Change score 0
 - Low/Moderate Change 0.1 - 0.9 (reinforced by KDE Line dip in the middle)

HEATMAP OF FEATURE CORRELATIONS



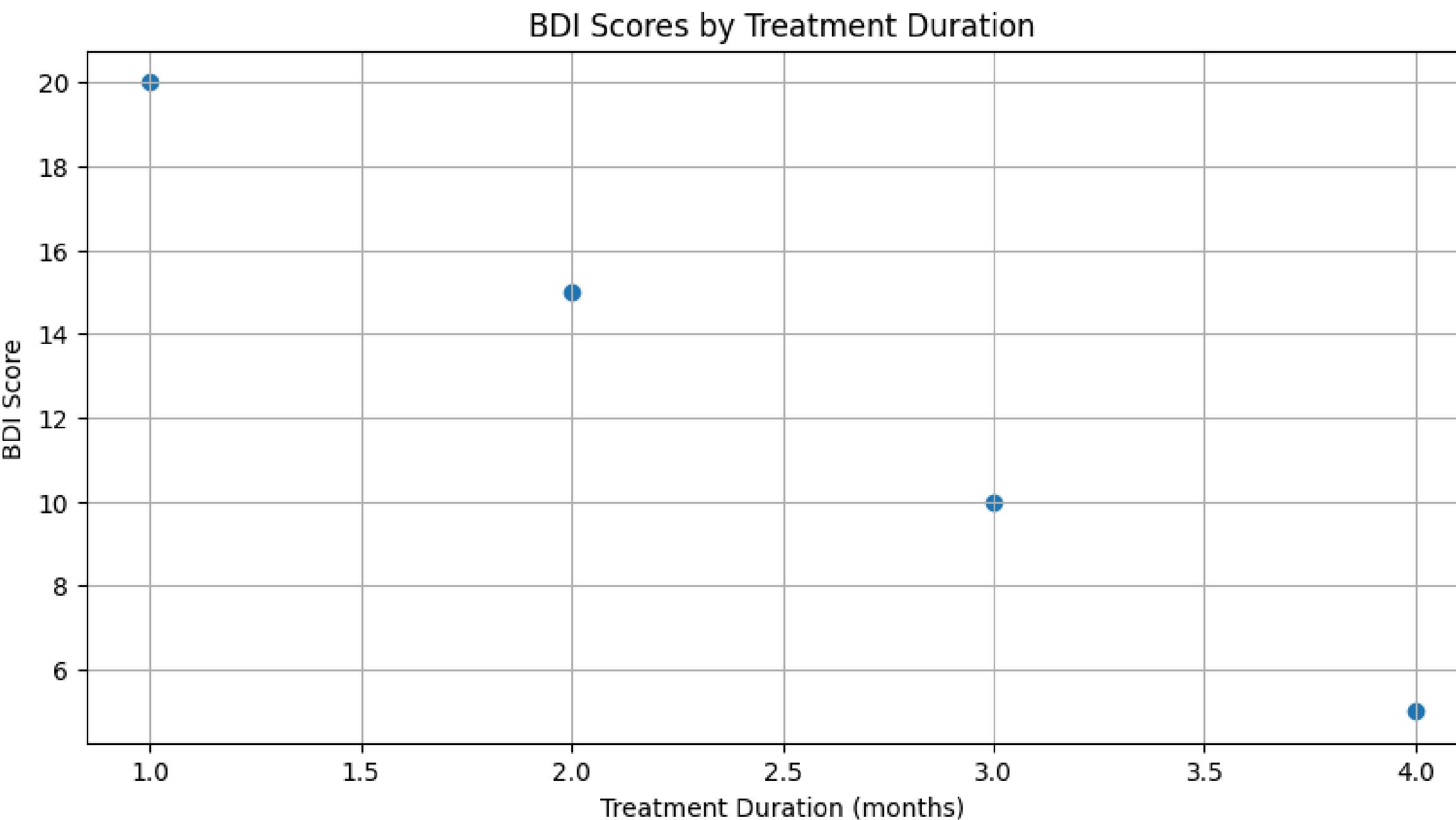
Perfect Positive Correlation (1.0)

- **Feature1 and Feature3 ~ Indicates that these two features move together perfectly**
- **As Feature1 increases, Feature3 increases proportionally, suggesting that the variability of one feature is mirrored by the other.**

Perfect Negative Correlation (-1.0)

- **Feature1 and Feature2 ~ Indicates an inverse relationship.**
- **Feature2 and Feature3 ~ As Feature2 increases, Feature3 decreases proportionally, indicating another inverse relationship and spread of variability between these features.**

SCATTER PLOT OF BDI SCORES BY TREATMENT DURATION



Initial High Scores |
1 month of treatment, BDI scores are relatively high (around 20)

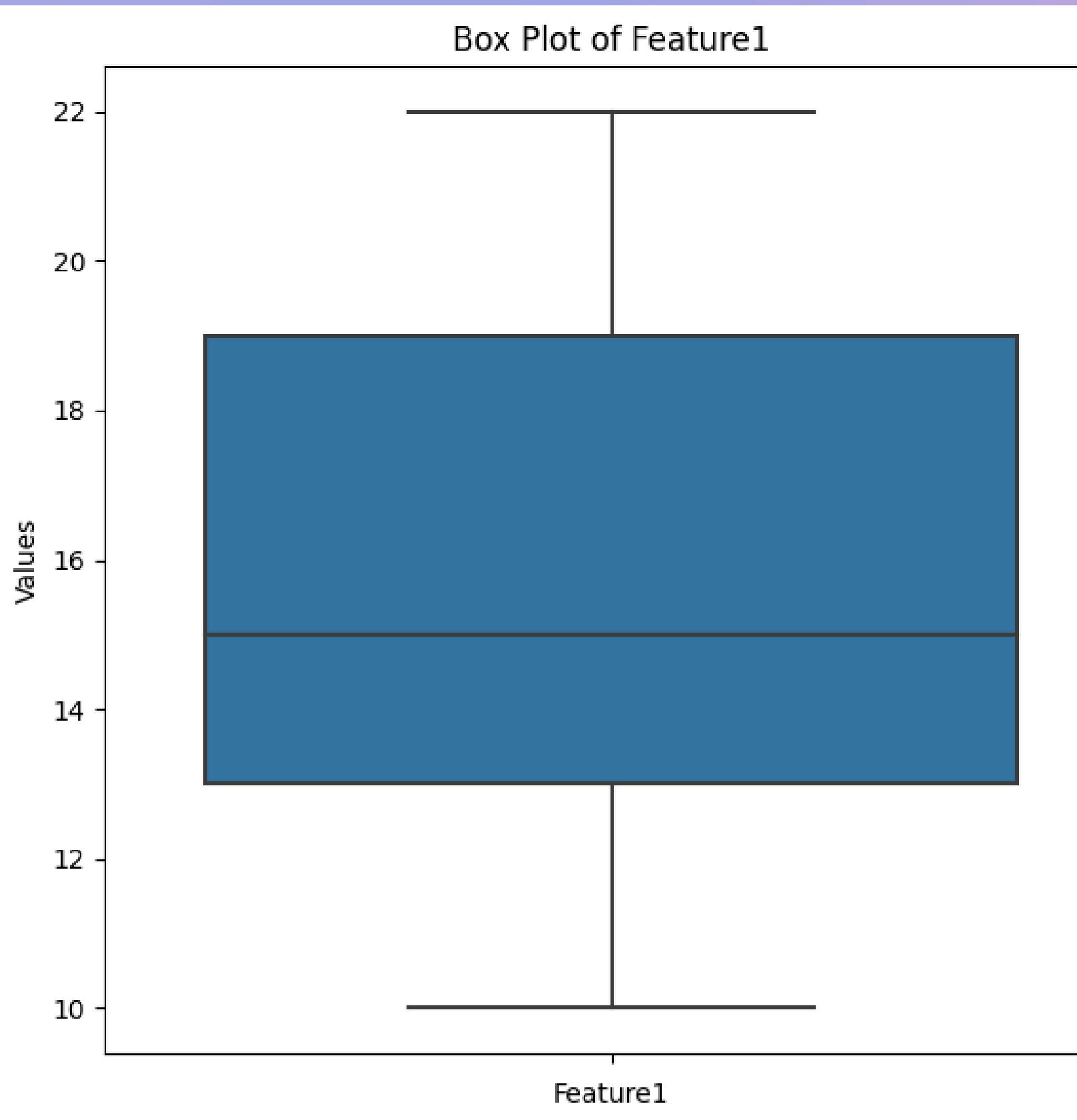
Decreasing Trend |
As treatment duration increases, BDI scores consistently decrease

Lowest Scores | 4 months, BDI scores drop to approx. 6

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BOX PLOT FEATURES 1

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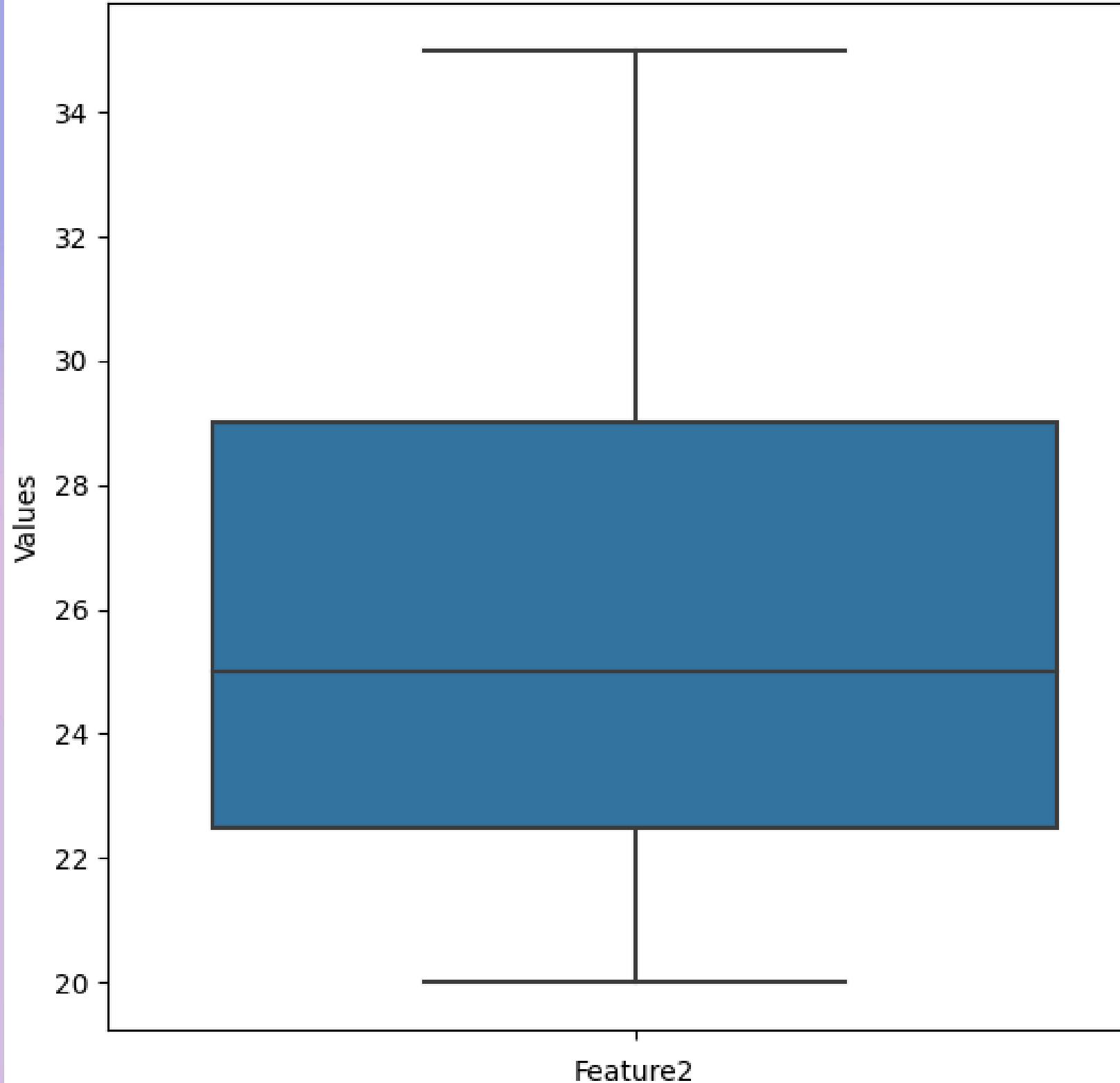


- **Feature 1**
 - **Median**
 - **Approximately 15**
 - **IQR**
 - **first quartile (Q1, around 13.5) to the third quartile (Q3, around 18)**
 - **Whiskers**
 - **extend from about 10 to 22**
 - **Specific Patterns or Changes**
 - **moderate variability with values ranging from 10 to 22**

BOX PLOT FEATURE 2

5A

Box Plot of Feature2

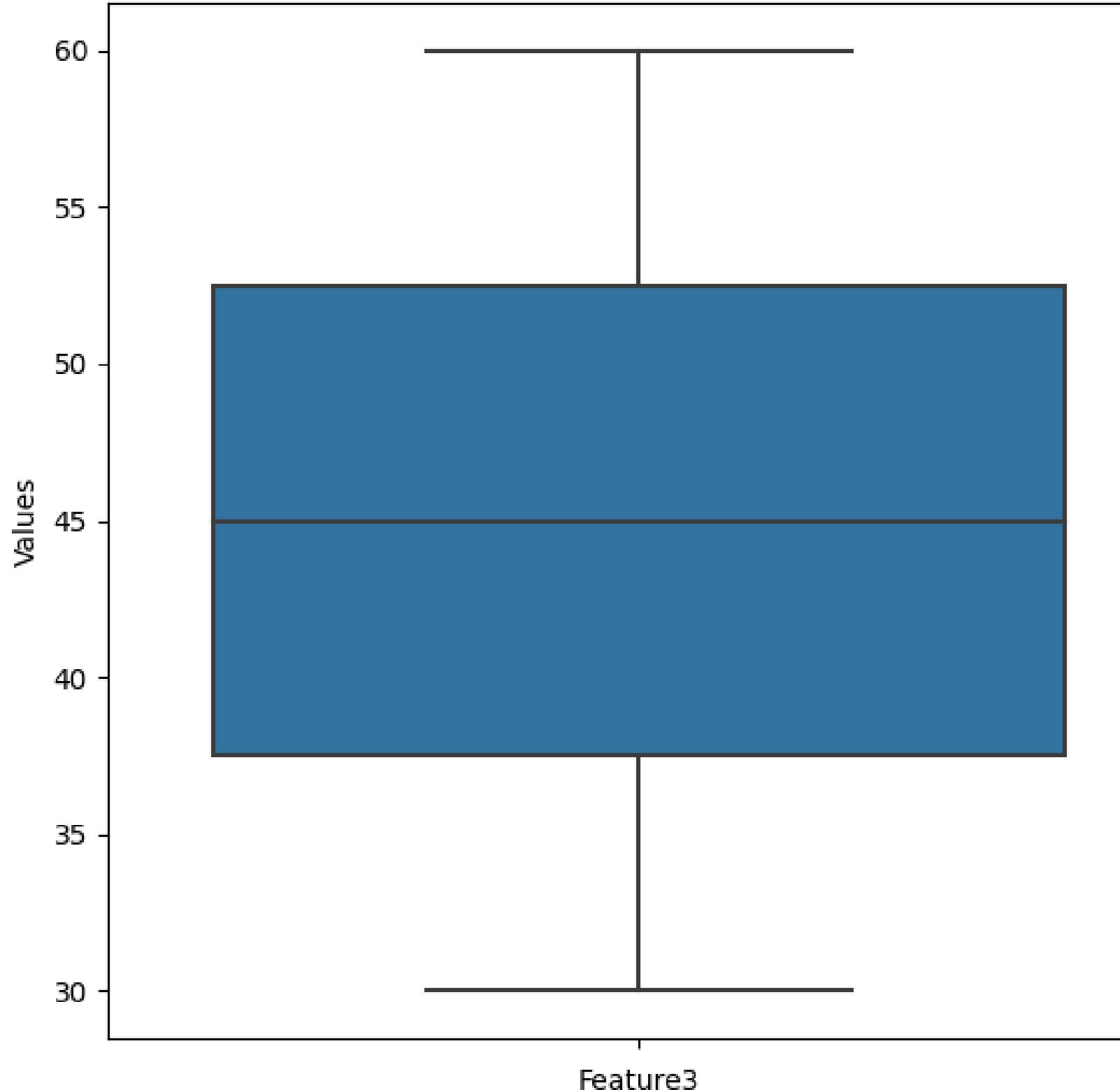


- **Feature 2**
 - Median
 - **Approximately 25**
 - IQR
 - **first quartile (Q1, around 24) to the third quartile (Q3, around 28)**
 - Whiskers
 - **extend from about 20 to 35**

BOX PLOT FEATURE 3

5B

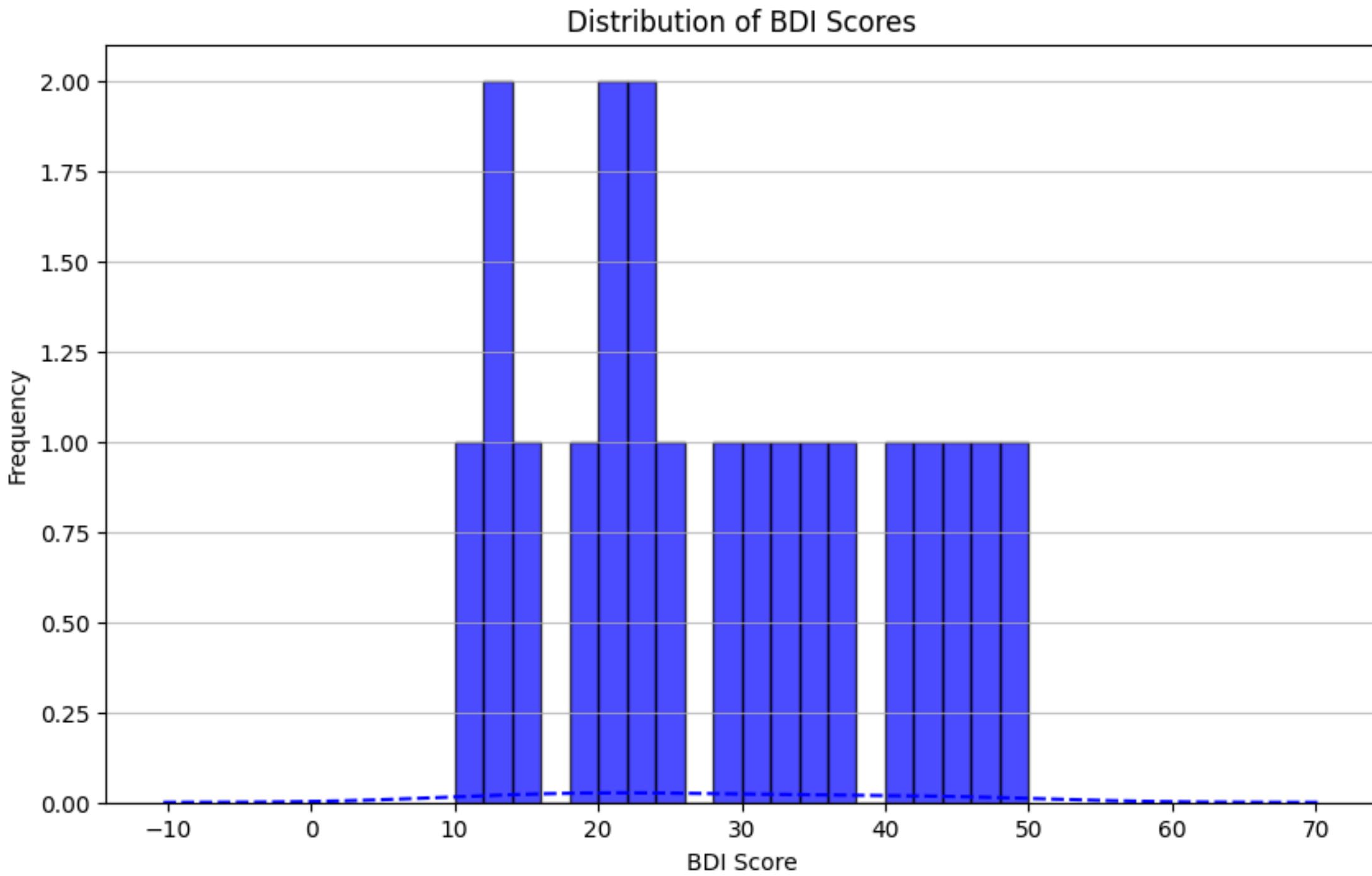
Box Plot of Feature3



- **Feature 3**
 - Median
 - **Approximately 45**
 - IQR
 - **First quartile (Q1, around 40) to the third quartile (Q3, around 50)**
 - Whiskers
 - **Extend from about 30 to 60**

BDI CHANGE SCORES HISTOGRAM

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- **High Frequency Peaks** There are distinct peaks at BDI scores of around 20, indicating a significant number of participants fall within this range
- **Moderate Scores:** The BDI scores are spread across a range of values, with a concentration around the 20-25 mark
- Peaks around 20 suggest that many participants have moderate levels of depression.

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PRACTICAL INSIGHTS

LESS
STRESS!

- BDI Score Distribution
 - generally around 20-25
 - Peaks of moderate depressions
- Box Plots
 - Ft .1 ~
 - Median approx. 15
 - moderate spread 10-22
 - Ft. 2 ~
 - Median approx. 25
 - Narrow spread 20-35
 - Ft. 3 ~
 - Median approx. 45
 - Wide spread 30-60

Heat Map Correlations

- Perfect Positive correlation between Ft. 1 & 3
- Perfect negative correlations between Feature1 & Feature2 and Feature2 & Feature3

Scatter Plot

- BDI decreases as treatment duration increases
- lowest scores observed at 4 months

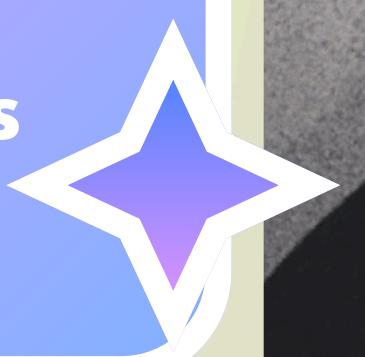
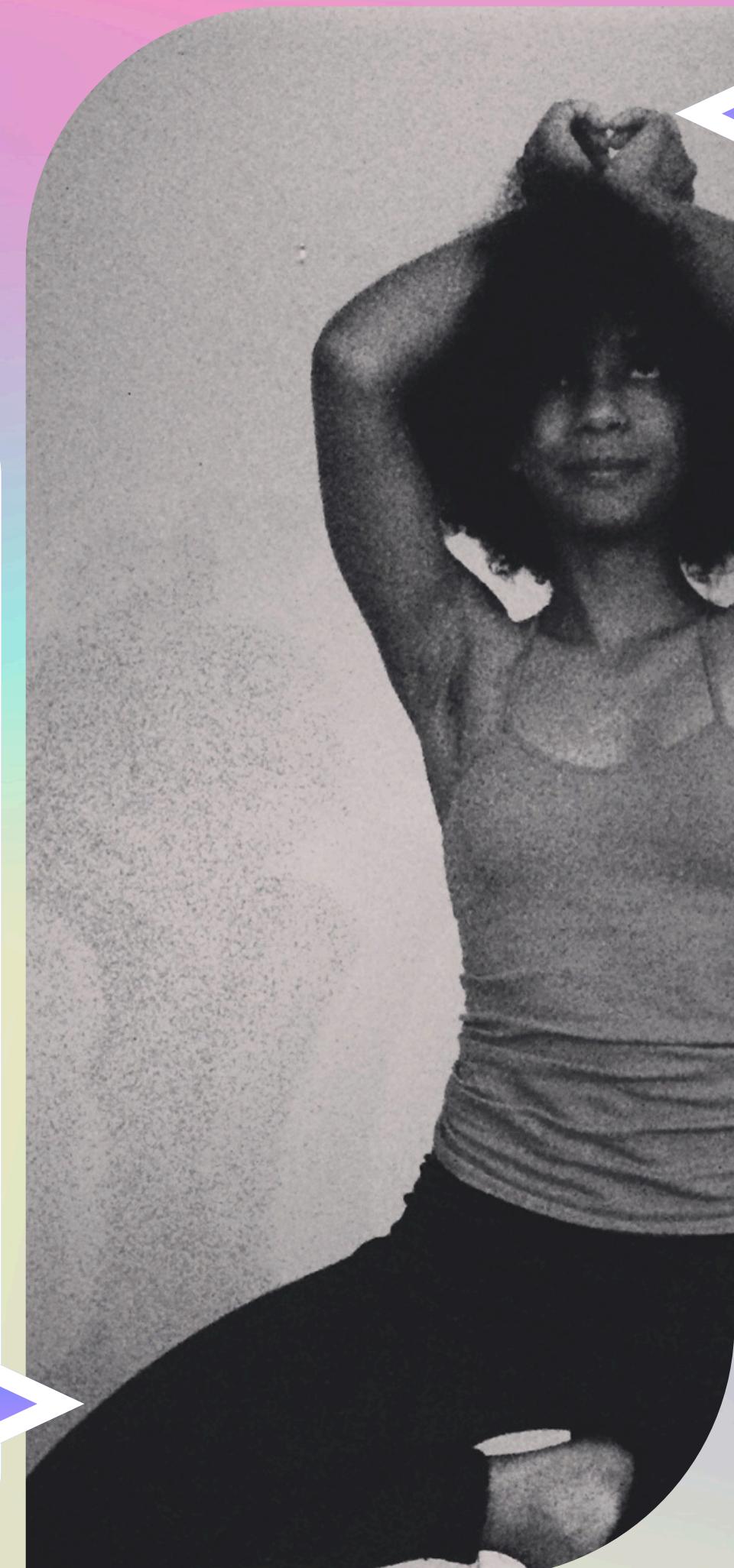
TAKE CARE
OF YOUR
MIND



REACH OUT
★ FOR ★
SUPPORT

9 CONCLUSION

- Visualizations showed distribution, correlations, and trends within the BDI scores and related features
 - BDI Score (20-25)
 - Box Plots show varied levels of variability
 - Heat Map showed Perfect Positive & Negative Correlations
 - Scatter Plot showed 4 months Yoga practice advised to achieve mental health improvements

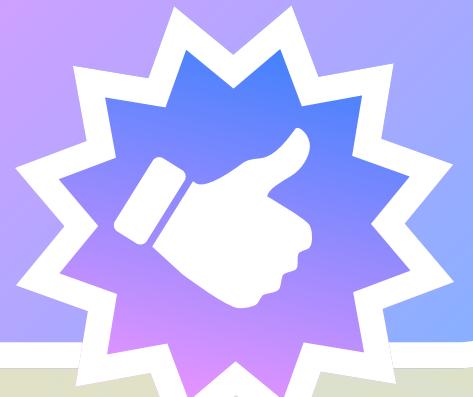




REMEMBER!
REMEMBER!
REMEMBER!

**PREVENT
CHRONIC
ILLNESS**

**HEALTHY
MIND
MAKES
HAPPY
LIFE!**



THANK
YOU

