AGE BASED FASHION PREFRENCES

FASHION FUSION

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BUSINESS UNDERSTANDING

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DATA COLLECTION

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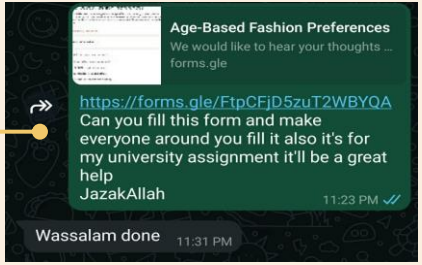
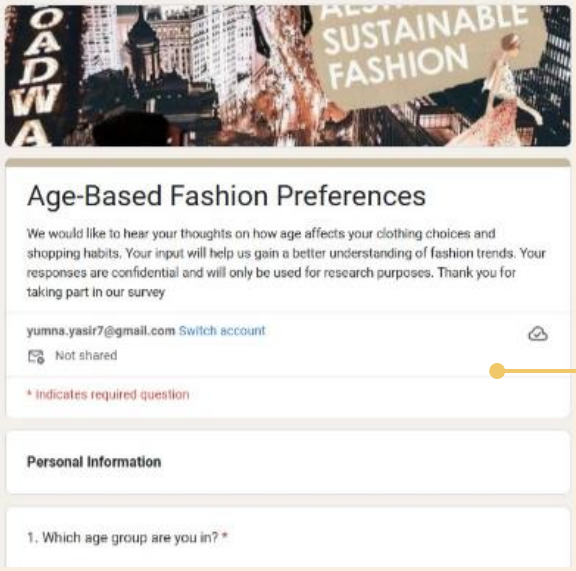


Google Form



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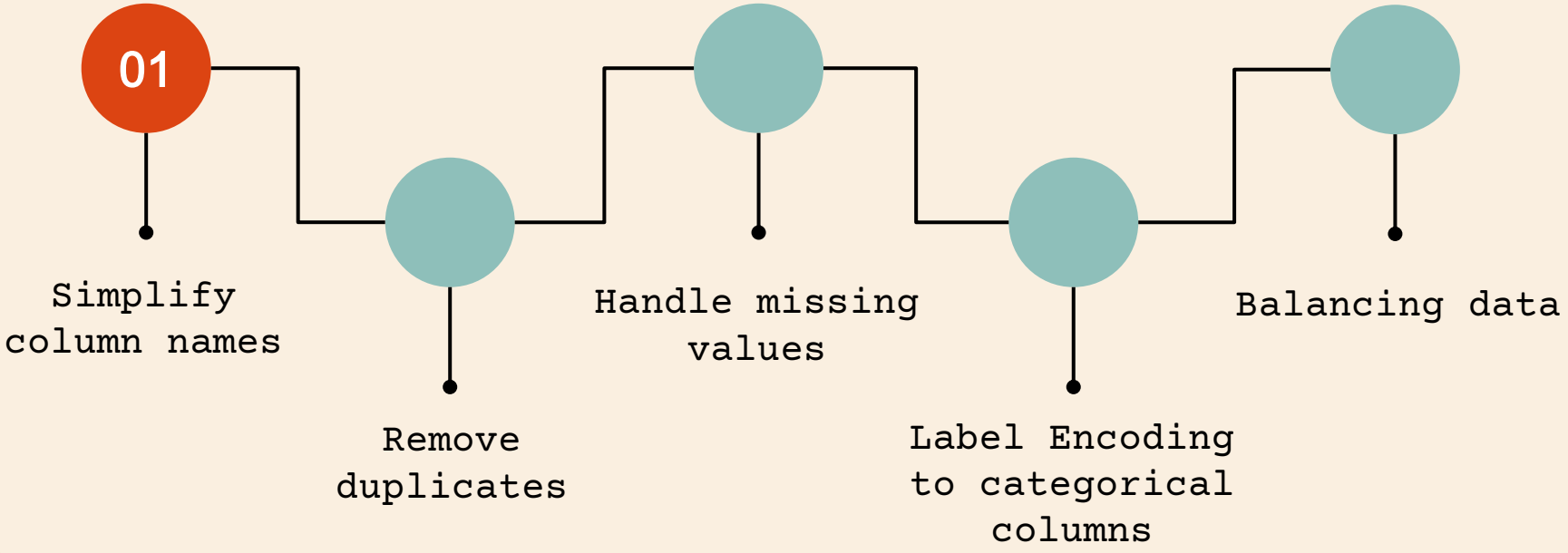
PREPROCESSING

PREPROCESSING



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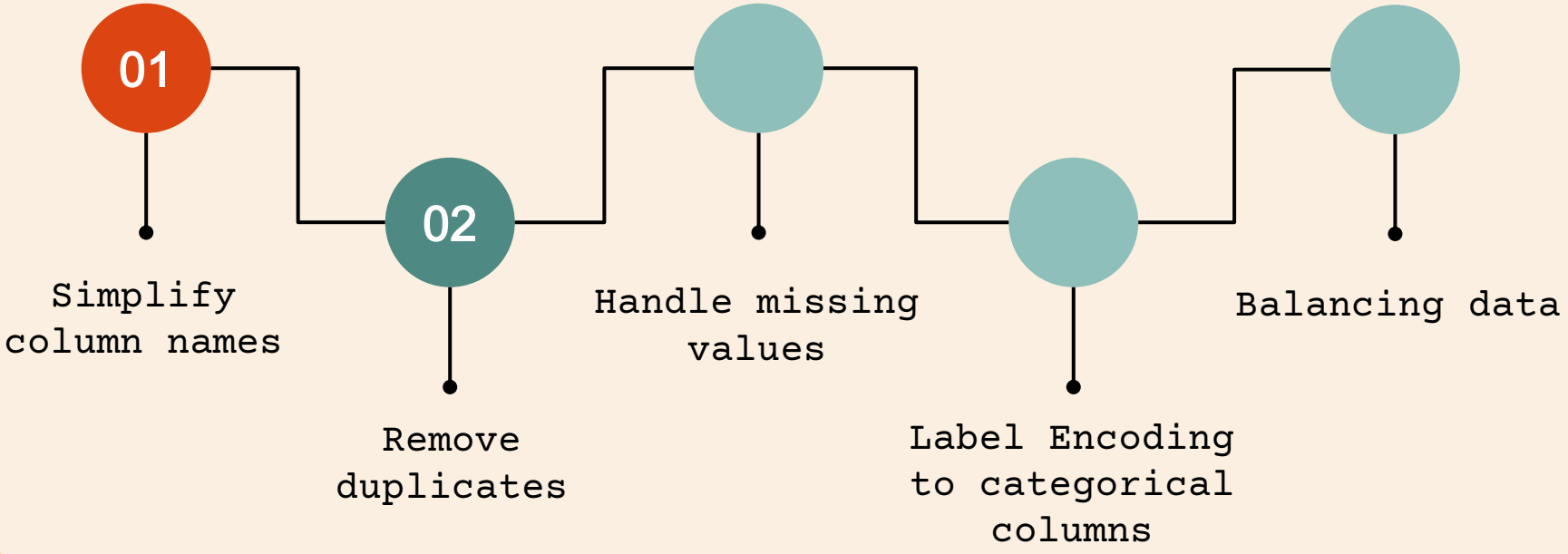

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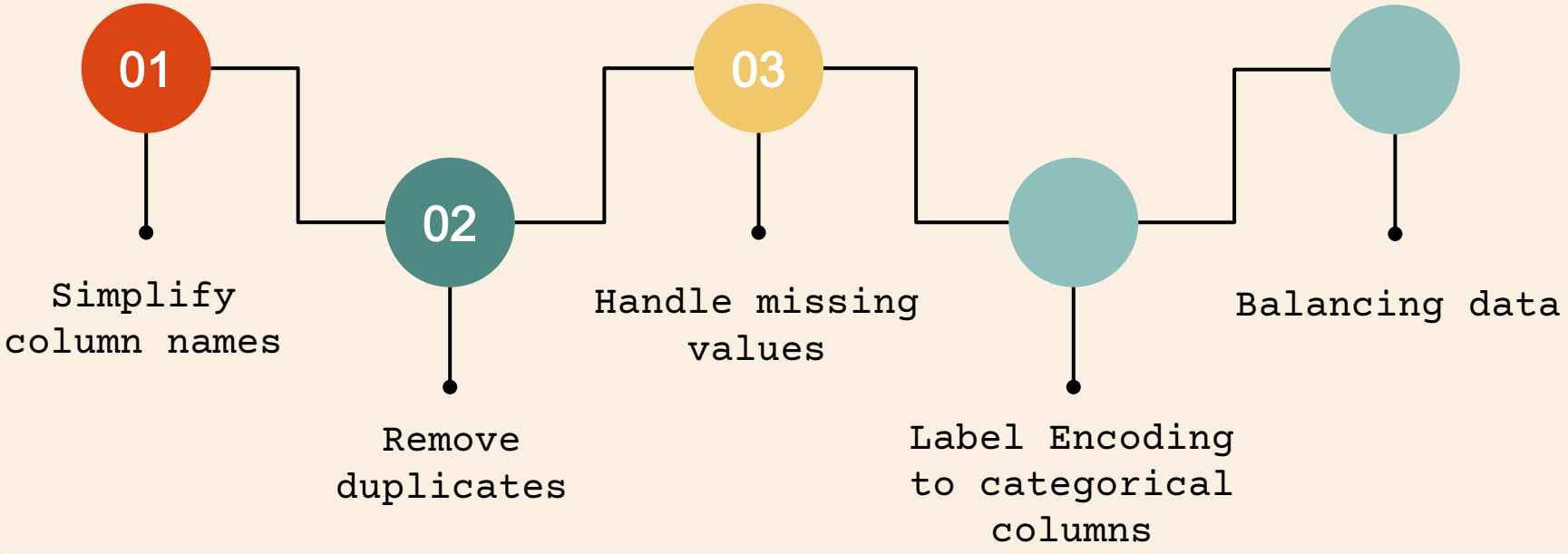

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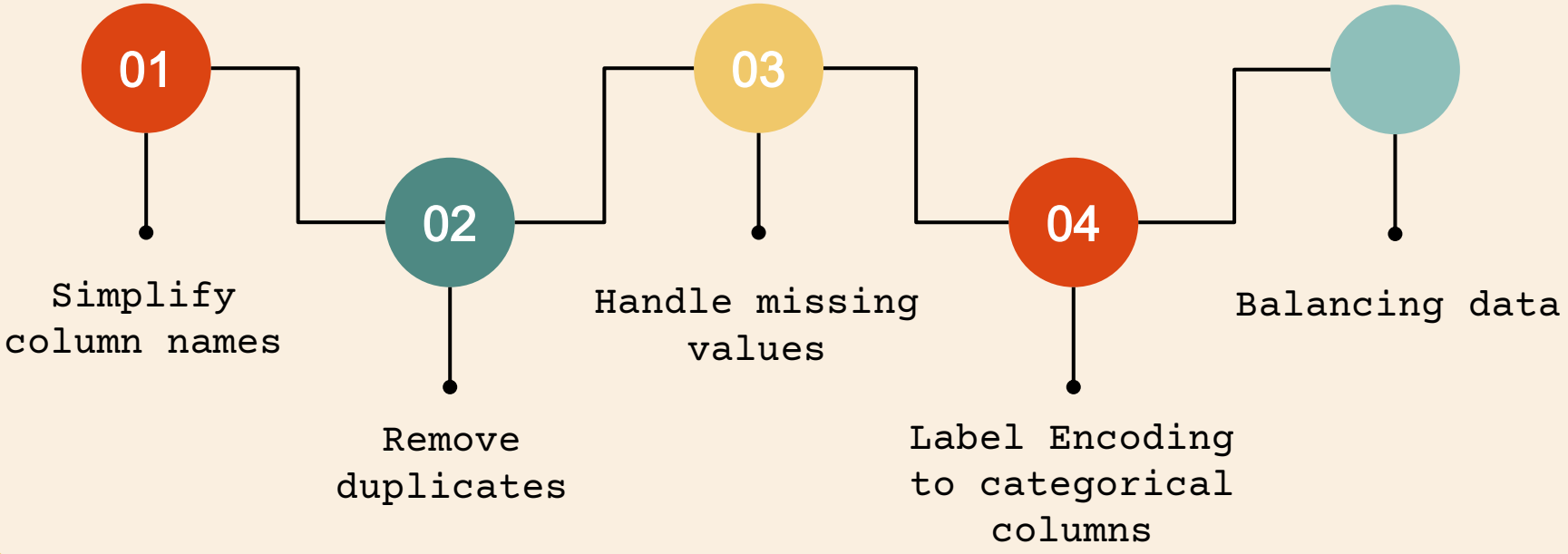
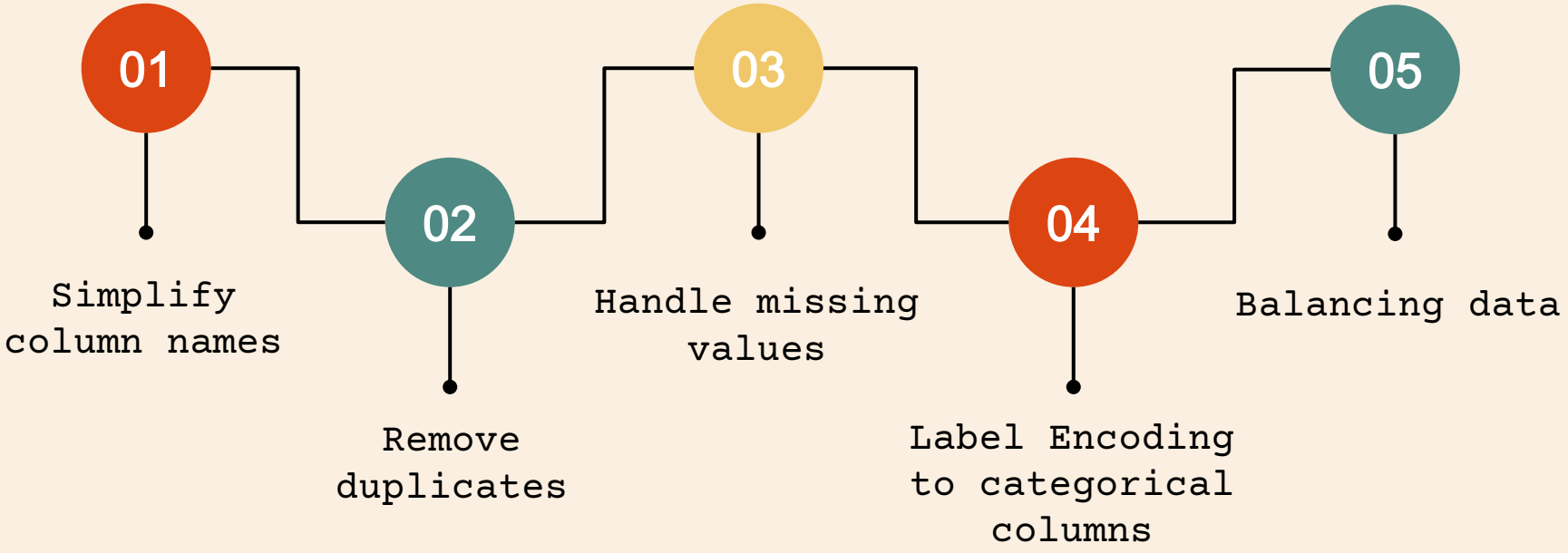


PREPROCESSING



OUTPUT

- Timestamp
- Designer_brands
- Style_Change
- Society_Expectation

```
Missing values
Timestamp                                                                  900
1. Which age group are you in?                                               0
2. What is your gender?                                                      0
4. How would you describe your style?                                        0
3. Where do you live?                                                        0
5. Do you prefer Eastern or Western clothing, or both?                       0
6. Pick your wardrobe essentials (Choose all that apply):                    0
7. Who inspires your fashion choices?                                        0
8. How often do you buy new clothes?                                         0
9. Where do you usually buy clothes?                                         0
10. When do you like to shop the most?                                       0
11. What do you do when you have a fashion emergency?                        0
12. Do you prefer designer brands for special events?                      900
13. If you could choose one store to get unlimited clothes from, which would it be?    0
14. Has your style changed over age?                                       900
15. Do you find it easy to find clothes that suit both your style and age?   0
16. Does society expect you to dress differently as you age?               900
17. What is your average spending on clothes?                                0
18. How much of your income goes to buying clothes?                          0
19. On a scale from 1 to 10, how much do you follow seasonal fashion trends?    0
dtype: int64
```

OUTPUT

```
Age_Group                0
Gender                   0
Location                 0
Clothing_Preference      0
Shopping_Frequency       0
Fashion_Emergency        0
Designer_Brands          0
Favorite_Store           0
Style_Change             0
Style_Age_Fit            0
Society_Expectations     0
Spending                 0
Income_Percentage        0
Fashion_Trend_Scale      0
dtype: int64
```

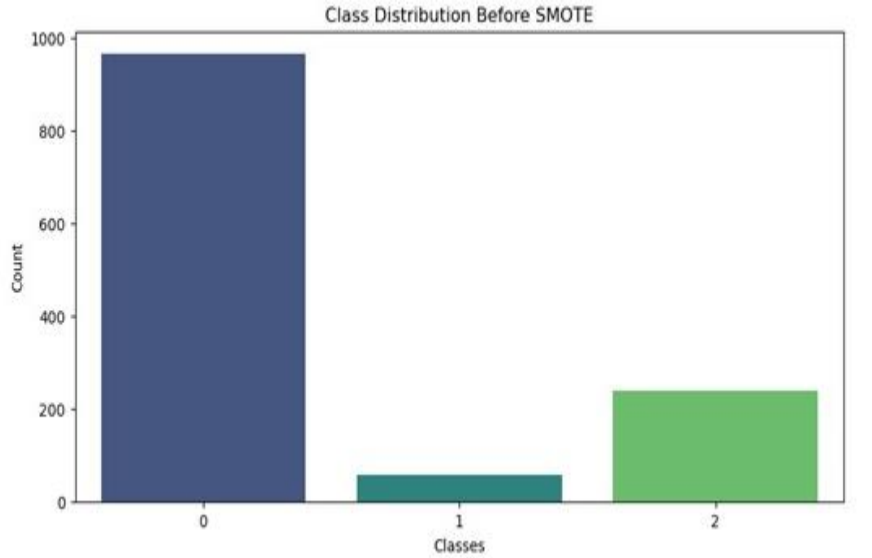
Handled Missing Values

Remove Duplicate Values

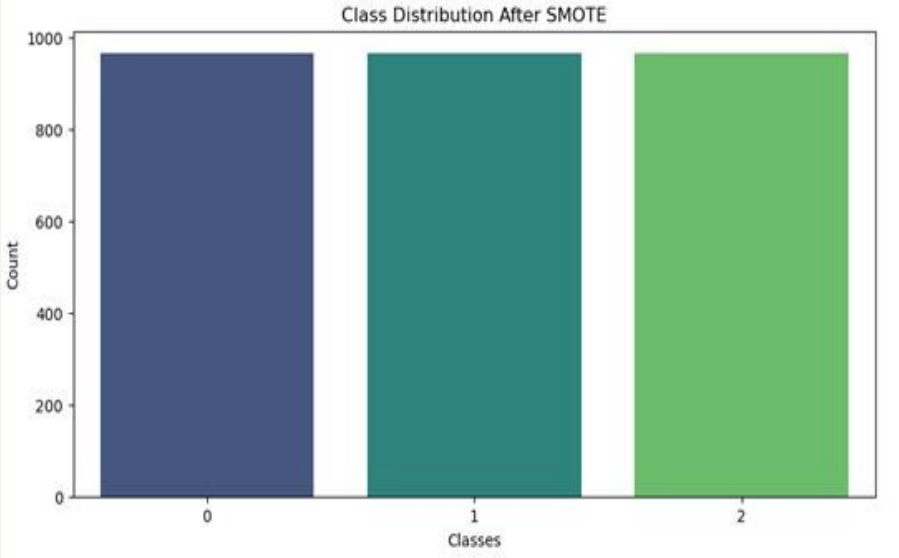
Simplified Column Names

BALANCING DATA

Before SMOTE



After SMOTE



04

FEATURE ENGINEERING

OUTPUT

	Age_Group	Gender	Location	Clothing_Preference	Shopping_Frequency	\
0	0	1	3	2	2	
1	0	0	3	0	0	
2	0	3	6	2	2	
3	0	1	6	2	1	
4	0	1	3	1	2	

	Fashion_Emergency	Designer_Brands	Favorite_Store	Style_Change	\
0	2	4	2	2	
1	4	4	2	2	
2	4	1	0	0	
3	4	1	0	0	
4	0	4	0	2	

	Style_Age_Fit	Society_Expectations	Spending	Income_Percentage	\
0	2	0	5	7	
1	2	0	3	7	
2	0	0	3	7	
3	2	0	5	7	
4	2	0	1	3	

	Fashion_Trend_Scale
0	1
1	5
2	10
3	5
4	9

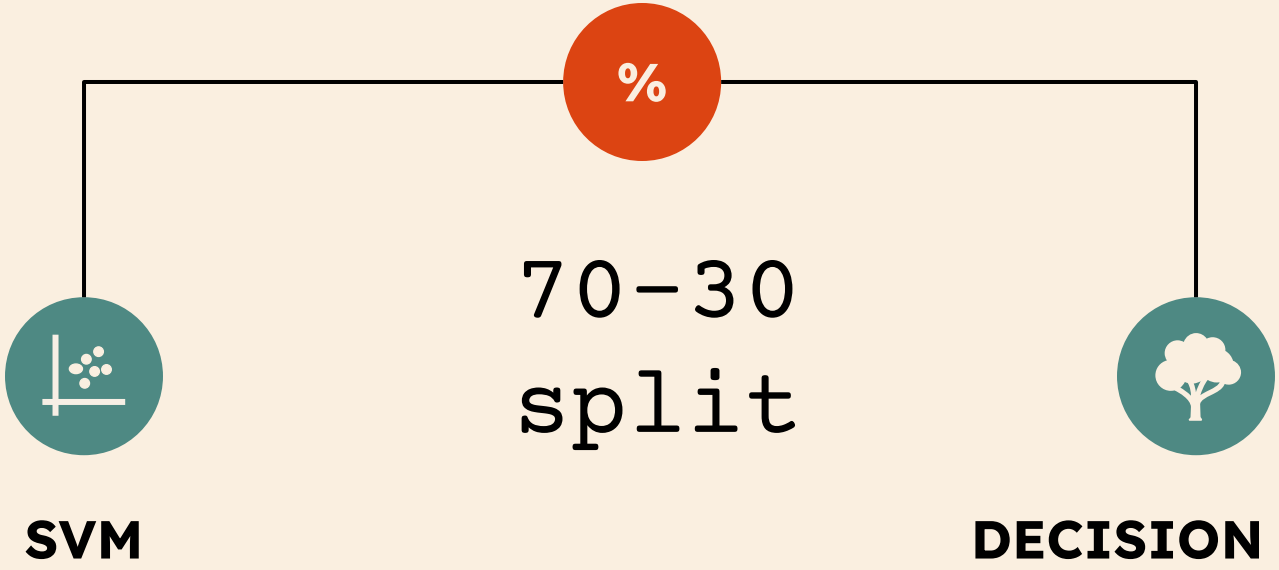
WHY DID WE DO FEATURE ENGINEERING?

05

MODEL APPLY

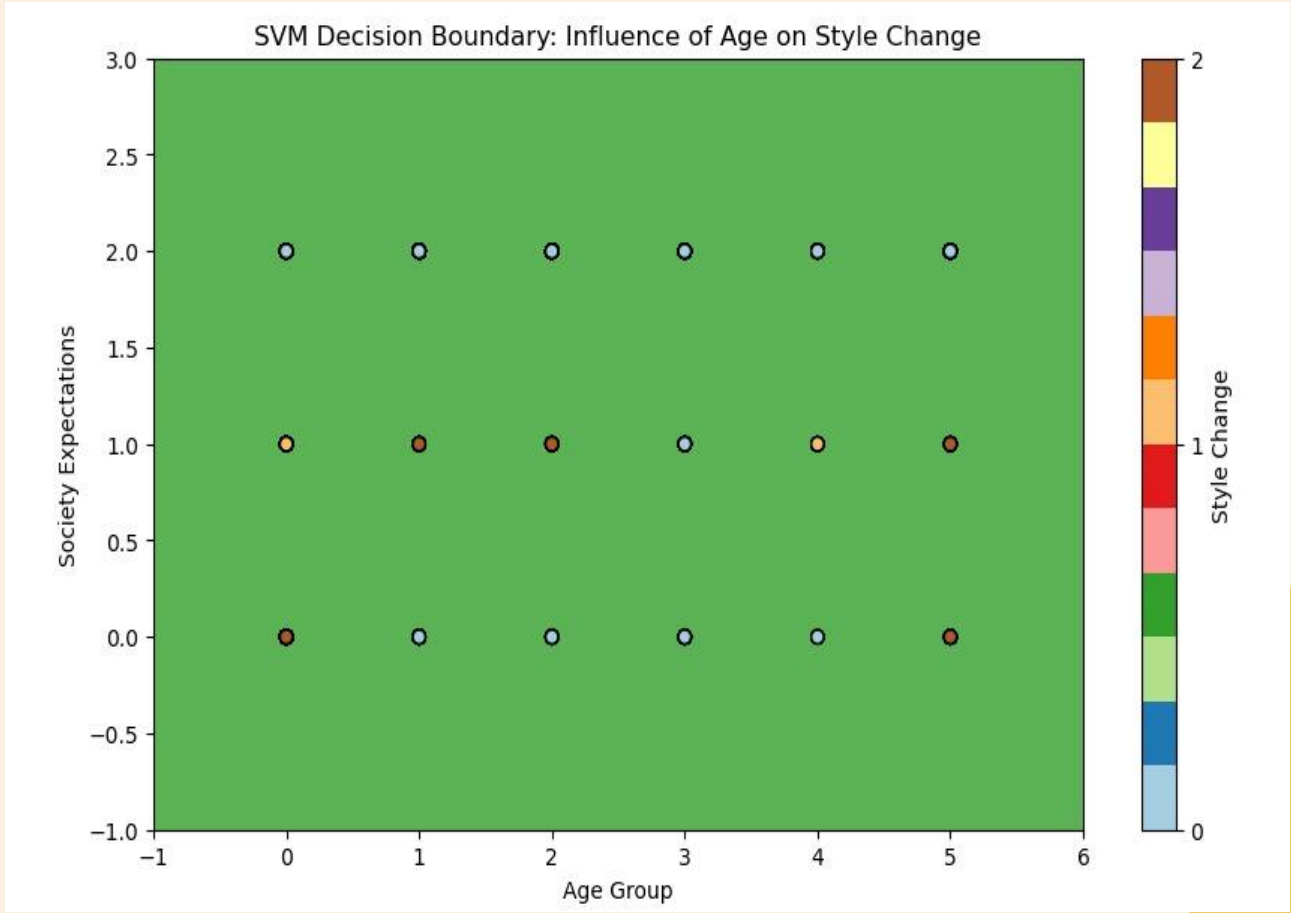
SVM & Decision Tree

MODEL APPLY



SVM

SVM


SVM Decision Boundary: Influence of Age on Style Change
Society Expectations
Age Group
Style Change
3.0
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1
0
1
2
3
4
5
6
2
1
0

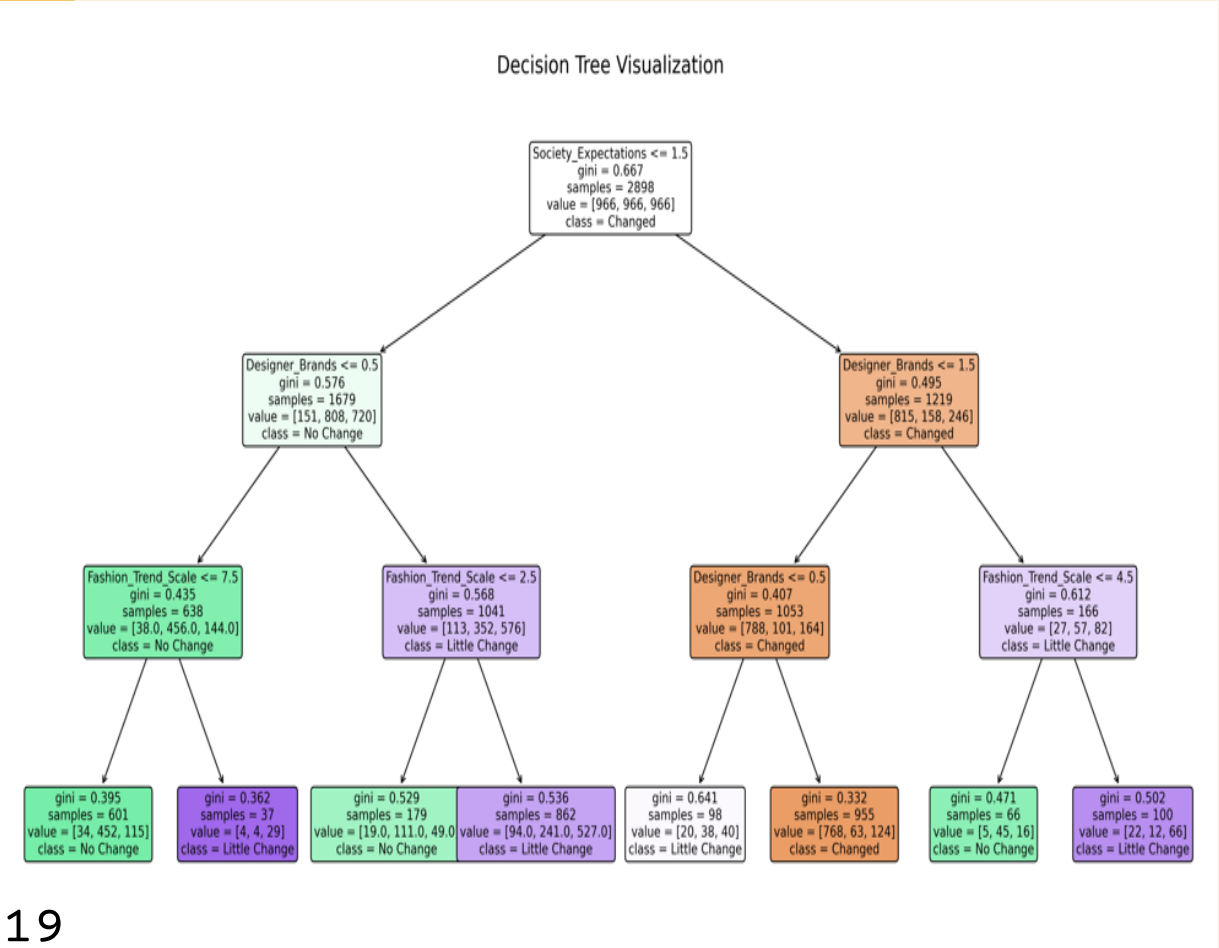
SVM

Accuracy is 76%

SVM:

Accuracy: 0.76

	precision	recall	f1-score	support
0	0.86	0.88	0.87	242
1	0.05	0.07	0.06	14
2	0.54	0.43	0.48	60
accuracy			0.76	316
macro avg	0.48	0.46	0.47	316
weighted avg	0.76	0.76	0.76	316



DECISION TREE

DECISION TREE

Decision Tree Classifier
Accuracy: 0.76

Classification Report:

	precision	recall	f1-score	support
0	0.94	0.81	0.87	242
1	0.08	0.14	0.11	14
2	0.49	0.70	0.58	60
accuracy			0.76	316
macro avg	0.51	0.55	0.52	316
weighted avg	0.82	0.76	0.78	316

Accuracy is 76%

DECISION TREE

Accuracy is 76%

Decision Tree Classifier
Accuracy: 0.76

Classification Report:

	precision	recall	f1-score	support
0	0.94	0.81	0.87	242
1	0.08	0.14	0.11	14
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macro avg	0.51	0.55	0.52	316
weighted avg	0.82	0.76	0.78	316

WHY IS THE ACCURACY OF BOTH APPLIED MODELS THE SAME?

VISULIZATION

06

VISUALIZATION

01

BAR PLOT

02

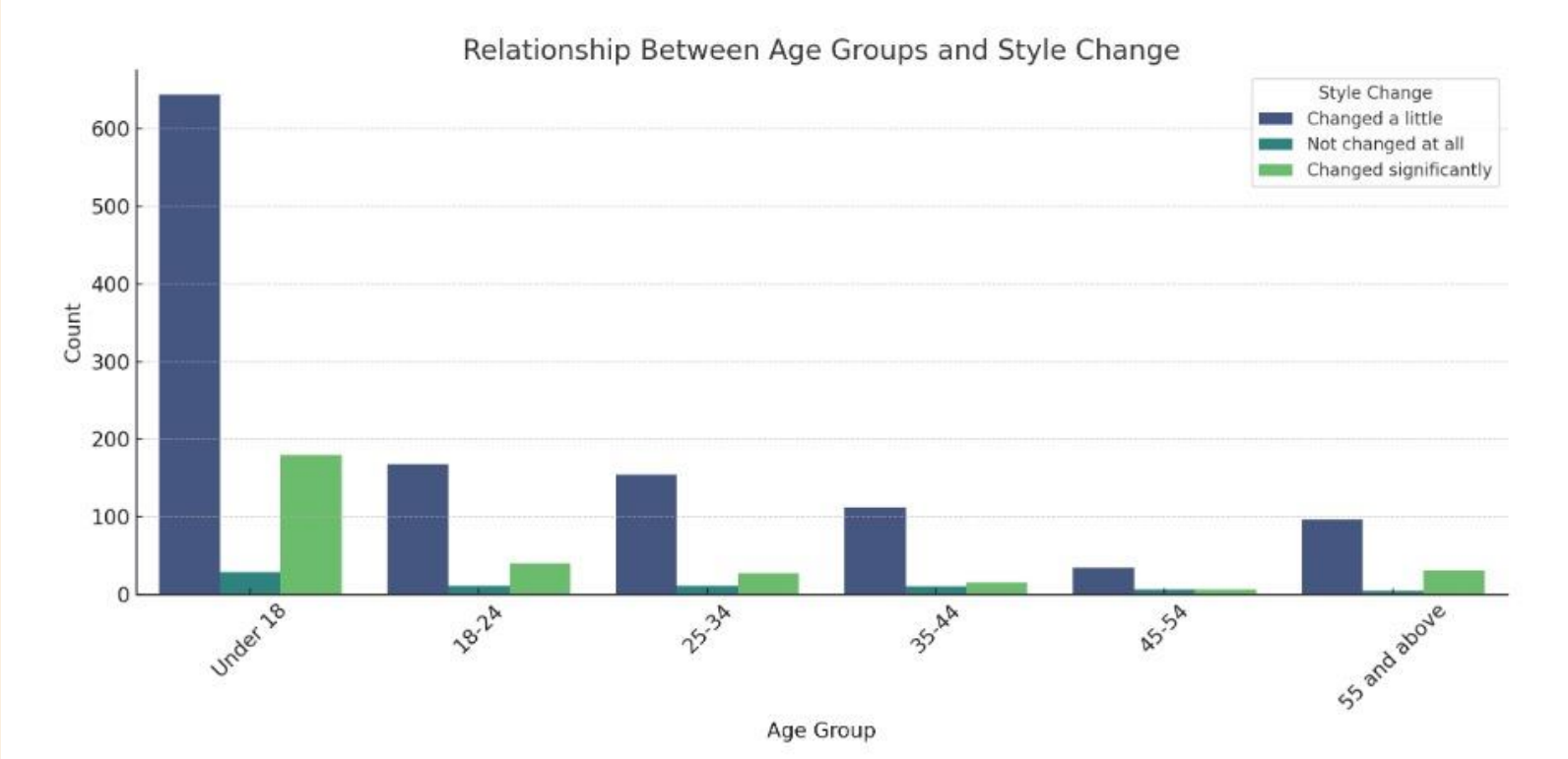
COMPARISON MATRIX

03

PREDICTED CLASS DISTRIBUTION

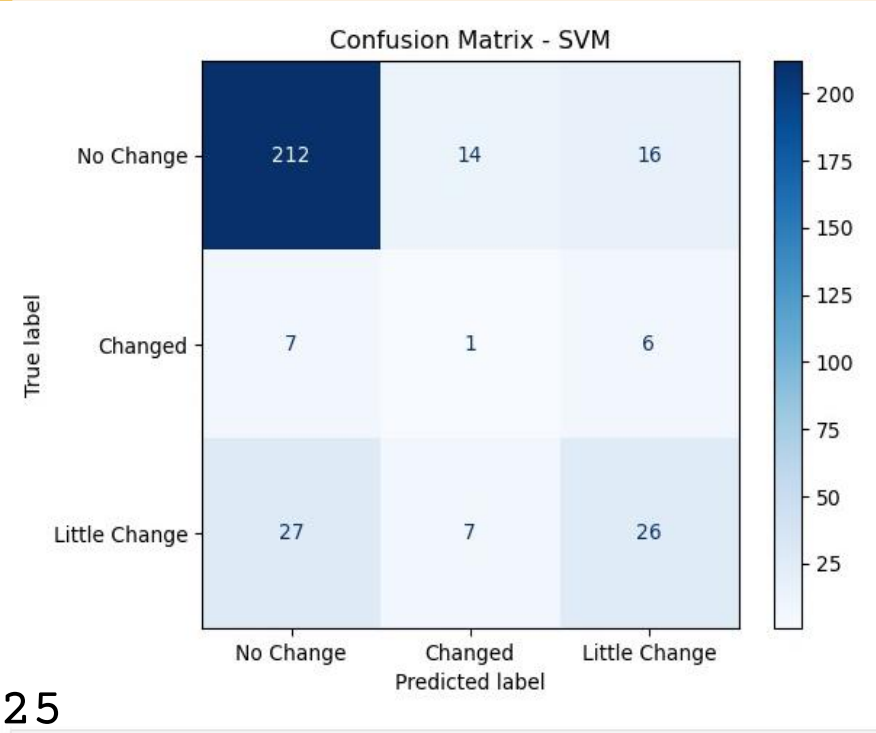
01

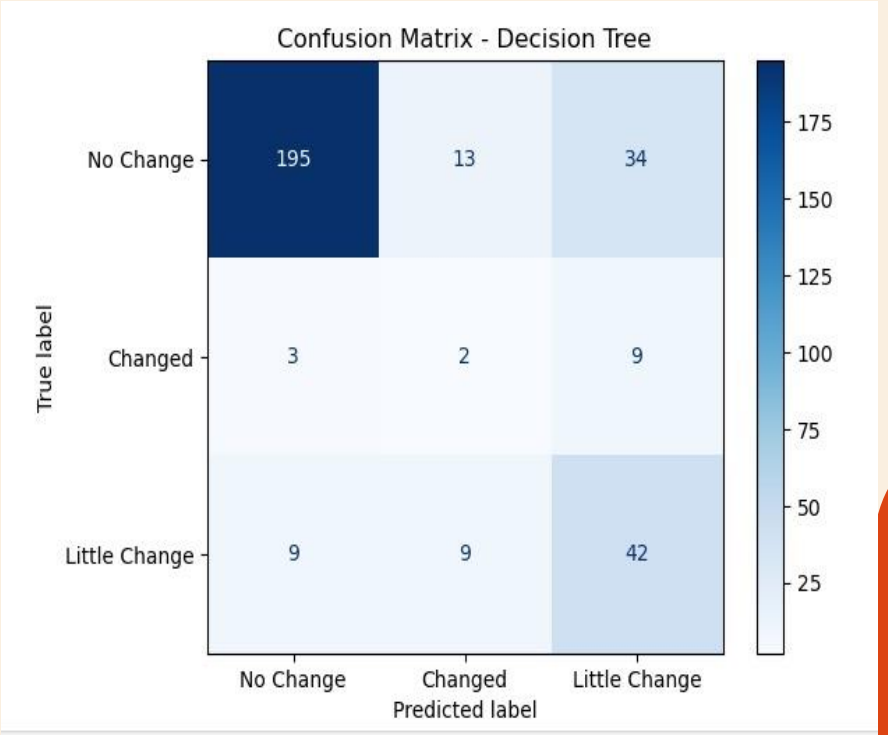
BAR PLOT


Relationship Between Age Groups and Style Change
Style Change
Changed a little
Not changed at all
Changed significantly
Count
0
100
200
300
400
500
600
Under 18
18-24
25-34
35-44
45-54
55 and above
Age Group

02

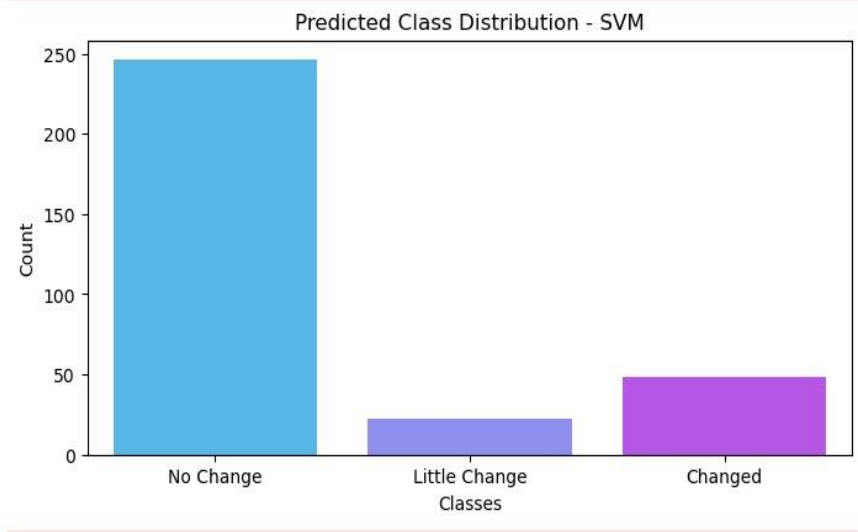
COMPARISON MATRIX

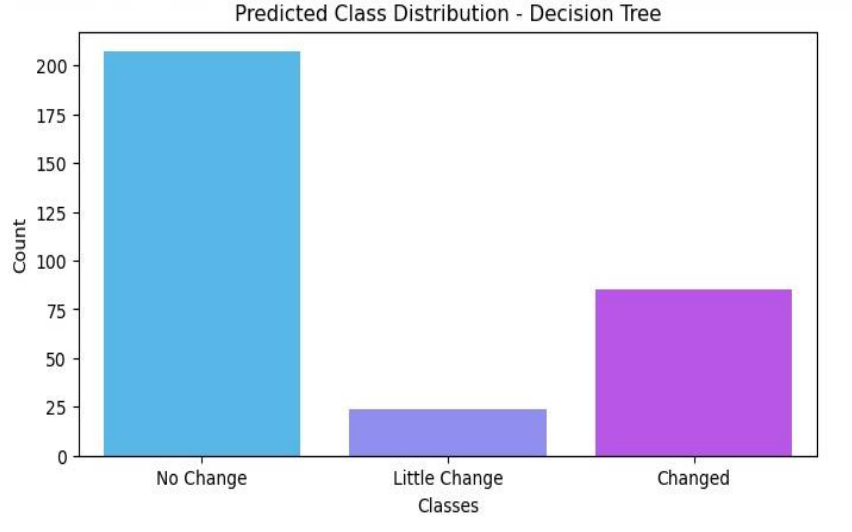




03

PREDICTED CLASS DISTRIBUTION





07 ANOMALY DETECTION

METHODS

Z

Z-SCORE

The Z-score tells us how far a value is from the average (mean) in terms of standard deviations

IQR

IQR

The IQR (Interquartile Range) focuses on the middle 50% of the data and checks if any value is too far outside that range.

Z-SCORE

- Most attributes have no anomalies detected.
- **Designer_Brands**: 3 anomalies found.
- Dataset is mostly clean.

Attribute	Anomalies Found?	Details
Age_Group	No	No anomalies detected.
Gender	No	No anomalies detected.
Location	No	No anomalies detected.
Clothing_Preference	No	No anomalies detected.
Shopping_Frequency	No	No anomalies detected.
Fashion_Emergency	No	No anomalies detected.
Designer_Brands	Yes	3 anomalies found: Rows 0, 1, and 4 with
Favorite_Store	No	No anomalies detected.
Style_Change	No	No anomalies detected.
Style_Age_Fit	No	No anomalies detected.
Society_Expectations	No	No anomalies detected.
Spending	No	No anomalies detected.
Income_Percentage	No	No anomalies detected.
Fashion_Trend_Scale	No	No anomalies detected.

IQR

- Most attributes have no anomalies detected.
- **Fashion_Emergency:** 337 anomalies found.
- **Designer_Brands:** 326 anomalies found.
- **Style_Change:** 371 anomalies found.
- Dataset contains significant anomalies in three attributes.

Attribute	Anomalies Found?	Details
Age_Group	No	No anomalies detected.
Gender	No	No anomalies detected.
Location	No	No anomalies detected.
Clothing_Preference	No	No anomalies detected.
Shopping_Frequency	No	No anomalies detected.
Fashion_Emergency	Yes	337 anomalies found: Rows with extreme
Designer_Brands	Yes	326 anomalies found: Rows with extreme
Favorite_Store	No	No anomalies detected.
Style_Change	Yes	371 anomalies found: Rows with extreme
Style_Age_Fit	No	No anomalies detected.
Society_Expectations	No	No anomalies detected.
Spending	No	No anomalies detected.
Income_Percentage	No	No anomalies detected.
Fashion_Trend_Scale	No	No anomalies detected.

08

CONCLUSION

09 REFERENCE

Special thanks to
Chat GPT