```python
import pandas as pd  # Data handling ke liye
import numpy as np  # Numerical calculations ke liye
import matplotlib.pyplot as plt  # Graphs aur visualization ke liye
from sklearn.preprocessing import LabelEncoder  # Categorical data
encoding ke liye

data = {
    'Customer_id': [101,201,301, 401, 501],  # Unique customer IDs
    'Gender': ['Male', 'Female', 'Female', 'Male', 'Female'],  #
Customers ka gender
    'Age': [15, 33, 20, 23, 30],  # Customers ki age
    'Purchase_amount': [2000, 4050, 2300, 1150, 5500],  # Customers ne
kitna spend kiya
    'Product_category': ['Electronics', 'Clothing', 'Electronics',
'Furniture', 'Clothing']  # Product categories
}
df = pd.DataFrame(data)  # Dictionary ko pandas dataframe me convert
kar diya
df.head()  # First 5 rows dekhne ke liye
```

	Customer_id	Gender	Age	Purchase_amount	Product_category
0	101	Male	15	2000	Electronics
1	201	Female	33	4050	Clothing
2	301	Female	20	2300	Electronics
3	401	Male	23	1150	Furniture
4	501	Female	30	5500	Clothing

```python
df_encoded = pd.get_dummies(df, columns=['Gender',
'Product_category'], drop_first=True)  # 'Gender' aur
'Product_category' columns ko One-Hot Encoding me convert kiya
df_encoded  # Encoded dataframe print kiya
```

	Customer_id	Age	Purchase_amount	Gender_Male	\
0	101	15	2000	1	
1	201	33	4050	0	
2	301	20	2300	0	
3	401	23	1150	1	
4	501	30	5500	0	

	Product_category_Electronics	Product_category_Furniture
0	1	0
1	0	0
2	1	0
3	0	1
4	0	0

```python
label_encoder = LabelEncoder()  # Label Encoding ke liye LabelEncoder
initialize kiya
df['Gender'] = label_encoder.fit_transform(df['Gender'])  # 'Gender'
```

```
column ko numerical values me convert kiya
df  # Final dataframe print kiya
```

	Customer_id	Gender	Age	Purchase_amount	Product_category
0	101	1	15	2000	Electronics
1	201	0	33	4050	Clothing
2	301	0	20	2300	Electronics
3	401	1	23	1150	Furniture
4	501	0	30	5500	Clothing