

Smartphone Data Analysis Report

1. Dataset Description

The dataset contains information about various smartphone models, including their brand, price, RAM, and features such as fingerprint sensors, NFC, and 5G connectivity.

Key Columns:

- **brand_name**: The manufacturer of the smartphone.
- **Price**: Cost of the smartphone.
- **RAM**: Amount of RAM in GB.
- **has_fingerprints, has_nfc, has_5g**: Binary indicators of specific features.

2. Key Findings

- **Average Smartphone Price**: The mean price of smartphones is around the mid-range category.
- **Price vs Brand**: Some brands tend to be consistently priced higher.
- **Feature Distribution**: Most smartphones in the dataset include fingerprint sensors, while 5G is still emerging.

3. Insights from Visualizations

Price Distribution

A histogram shows that most smartphones are priced within a specific range, with fewer expensive models.

Average Price by Brand

A bar plot highlights which brands have the highest average smartphone prices.

Price Distribution by Brand

A box plot reveals variations in price within each brand, showing outliers and pricing trends.

Price vs RAM Scatter Plot

A scatter plot demonstrates the relationship between price and RAM, showing whether higher RAM corresponds to higher prices.

Heatmap of Feature Correlations

A heatmap visualizes correlations between numerical features, identifying relationships among price, RAM, and feature availability.

Feature Availability Pie Chart

A pie chart illustrates the proportion of smartphones with fingerprint sensors, NFC, and 5G support.

Brand Distribution Count Plot

A count plot displays the number of smartphone models available per brand, providing insights into brand diversity.

4. Conclusion

The dataset provides useful insights into smartphone pricing and features. Brands and feature availability impact pricing, making this analysis valuable for consumers and manufacturers.