📱 Android Phone Price Predictor

A machine learning project that predicts the price of Android smartphones based on their specifications (RAM, storage, battery, display, etc.).

🔍 Overview

This project uses **Scikit-learn, Pandas, and NumPy** to train a regression model that estimates the price of Android smartphones.

- Input: Device specifications (e.g., RAM, storage, camera, processor, etc.)
- Output: Predicted price of the smartphone

The model achieves an accuracy of **~88%** on the test dataset.

⚡ Features

- Data preprocessing and feature engineering with **Pandas**
- Machine learning model training with **Scikit-learn**
- Price prediction based on real-world smartphone specifications
- Error percentage calculation to evaluate predictions

🛠️ Tech Stack

- **Python 3**
- **Scikit-learn**
- **Pandas**
- **NumPy**
- **Jupyter Notebook**

📊 Example Predictions

Motorola G85

- **Actual Price:** ₹16,099
- **Predicted Price:** ₹16,333.028
- **Error %:** ~1.45%

Samsung Galaxy A35

- **Actual Price:** ₹20,534
- **Predicted Price:** ₹20,781.725
- **Error %:** ~1.20%

🚀 Getting Started

1. Clone the Repository

```
git clone https://github.com/imtiyazallam07/smartphone-price-ml.git
cd smartphone-price-ml
```

2. Install Dependencies

```
pip install -r requirements.txt
```

3. Run the Notebook

Open Jupyter Notebook:

```
jupyter notebook
```

Then run `Predictor.ipynb` to train the model and test predictions.

🗂️ Project Structure

```
.
├── Predictor.ipynb     # Main notebook with training & prediction
├── data/               # Dataset (if available)
├── requirements.txt    # Python dependencies
└── README.md           # Project documentation
```

📈 Model Performance

- Accuracy: **≤ 88%**
- Evaluation Metric: **Error % between predicted vs. actual price**

🤝 Contributing

Pull requests are welcome! For major changes, please open an issue first to discuss what you'd like to change.

📜 License