

**Feasibility Report**

**For Laptop Price Dataset**

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1. **Background**

Laptops have evolved from bulky, expensive devices with limited storage to slim, portable machines with high storage capacity and advanced features. Many brands, including HP, Dell, Apple, Lenovo, and Asus, offer a variety of models with different specifications and price ranges, making it challenging for consumers to choose the best option.

A structured dataset of laptop prices simplifies decision-making by organizing laptop brands, models, specifications, and prices. Users can compare and filter laptops based on processor type, RAM, storage, screen size, and price. Since laptop prices fluctuate due to demand, new technology, and competition, this dataset also helps consumers track price trends and determine the best time to buy.

Businesses can use the dataset to analyze market trends, adjust pricing strategies, and stay competitive. Researchers can study price variations, gaining insights into consumer preferences and industry trends. Overall, this dataset serves as a valuable tool for buyers, businesses, and researchers, enabling informed decisions in a competitive market.

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1. **Application area**

The dataset of laptop prices can be used in various applications, particularly in the fields of data analysis, machine learning, and business intelligence.

**Price Prediction:**

* Building a regression model to predict the price of a laptop based on its specifications (processor, RAM, storage, GPU, screen size, etc.).
* This can help consumers estimate the fair price of a laptop and assist retailers in pricing their products competitively.

**Feature Importance Analysis:**

* Identifying which features (e.g., RAM, processor, GPU) have the most significant impact on the price of a laptop.
* This information can be valuable for manufacturers in making decisions about component selection and product positioning.

**Market Trend Analysis:**

* Analyzing how prices vary across different brands, processors, RAM sizes, storage types, and other features.
* Identifying trends in the laptop market, such as the increasing popularity of SSDs or the price premium associated with certain GPUs.

**Price Comparison and Recommendation Systems:**

* Developing a system that compares the prices of different laptops with similar specifications.
* Creating a recommendation engine that suggests laptops to users based on their budget and desired features.

**Outlier Detection:**

* Identifying laptops that are priced significantly higher or lower than similar models, which could indicate errors in pricing or unique product features.

**Business Intelligence:**

* Providing insights to retailers and manufacturers about pricing strategies, product development, and market positioning.
* Analyzing the dataset to understand consumer preferences and make data-driven decisions.

**Educational Purposes:**

* Using the dataset to teach data analysis, machine learning, and statistical modeling techniques.
* Students can practice data cleaning, feature engineering, model building, and evaluation using this dataset.

**Operating System Price Analysis:**

* Performing an analysis of the prices of laptops with different operating systems.
* This could be useful for consumers who are trying to decide which operating system is the most cost-effective for their needs.

1. **Impact On Our Environment/Country/Society**

**The impact on environment:**

When people buy cheap and low quality laptops, they get worse soon, which makes people repeatedly forced to buy new laptops. Old laptops can produce E-waste which can pollute the environment. If the price dataset shows which laptops are more sustainable, people can make better decisions and E-waste can be reduced. Through this data experts can understand how to handle electronic waste better, reducing environmental pollution. If cheap laptops are worse and people are forced to buy new than more natural resources will be used. Price data analysis can help identify which brands offer long-lasting laptops so that people can buy better and save natural resources. Some laptops use more power, while some spend less power. If pricing data shows that low power spending laptops are more cheap or more useful people may prefer them this would reduce carbon emission and electricity consumption. This dataset can be beneficial as it can help people buy energy-saving and eco-friendly laptops. If consumers are informed about devices that use less electricity and can be recycled, manufacturers will also be forced to make better products according to the environment.

**The impact on country:**

Laptop prices data set can be beneficial for the country’s economy as it makes the market transparent. The government can use this data to understand prices trends, prevent unfair prices and improve the technology sector. In addition, policy makers help decide whether to pay tax or subsidy on laptops so that they can made cheaper for the public. When the market competition increases, which will make technology and economy grow in the country.

**The impact on society:**

This data set is also very beneficial to the general public as it enhances accessibility to technology by helping individuals and businesses make informed purchasing decisions. Students, freelancers and people working in the offices will have to make it easier to pick proper laptops according to the budget. Similarly, small businessmen and startups can improve their business by buying the best devices at low cost. Moreover, transparency in prices encourages fair competition among retailers. The shopkeeper trend will be low, and it will be easier for the common man to buy laptops.