CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

MINI PROJECT - II

2022-2023

CLASS: B.E IV Semester, AI&DS-2

TITLE: **LAPTOP/COMPUTER/PC PRICE PREDICTION**

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ABSTRACT:

In today's world, laptops have become an essential tool for personal and professional use. With the vast range of laptops available in the market, it can be challenging to determine their prices. The objective of this project is to develop a machine learning model that can predict the price of a laptop based on its specifications.

To achieve this, we will collect a dataset consisting of various features of laptops such as brand, screen size, processor type, RAM, storage capacity, and graphics card. We will clean and preprocess the data by removing any missing values and outliers. Then, we will use various machine learning algorithms such as Linear Regression, Random Forest, and XGBoost to train our model on the dataset.

After training the model, we will evaluate its performance by using various evaluation metrics such as mean squared error (MSE) and R-squared score. Finally, we will use the trained model to predict the price of a laptop based on its specifications.

Overall, the laptop price prediction model will provide valuable insights into the factors that affect laptop prices and help consumers and retailers make informed decisions.

OBJECTIVES:

To design a machine learning model to predict the price of the laptop/computer/pc based on the given input specifications.

EXISTING SYSTEM:

Before the development of laptop price prediction models, the pricing of laptops was done using traditional methods such as cost-plus pricing, value-based pricing, competition-based pricing, and psychological pricing.

Cost-plus pricing involved adding a markup to the manufacturing cost of the laptop to determine the selling price. Value-based pricing involved setting the price based on the perceived value of the laptop to the customer. Competition-based pricing involved setting the price based on the prices of laptops offered by competitors in the market. Psychological pricing involved setting the price to influence customer perceptions, such as pricing a laptop at $999 instead of $1000 to make it seem less expensive.

DISADVANTAGES:

- These traditional methods had limitations, as they were not always accurate in predicting the optimal price for a laptop.
- They relied on historical data, market research, and the expertise of the pricing team to make pricing decisions.
- This approach was time-consuming, and the pricing decisions were often based on incomplete or outdated information.

PROPOSED SYSTEM:

Here, we use machine learning model on the customer data. We split the dataset into a training dataset and test dataset in a ratio of 80%-20%. The data is preprocessed accordingly, and the model is generated. The model is trained on the 80% training dataset and is tested on the 20% dataset.

ADVANTAGES:

- The proposed laptop price prediction model will be useful for both consumers and retailers.
- Consumers can use this model to get an estimate of the laptop's price based on its specifications before making a purchase decision.
- Retailers can use this model to set competitive prices for their products and optimize their profit margins.
- With the advancement of machine learning and data analytics, laptop price prediction models have become more accurate and efficient.
- These models use historical data and market trends to predict the optimal price for a laptop.
- The models can process large amounts of data quickly and provide real-time pricing recommendations based on changing market conditions.
- This approach allows businesses to stay competitive and maximize their profits by setting the right price for their laptops.

IMPLEMENTATION TOOLS:

Front-End:
- Python modules like
- Streamlit
- Scikit
- Pickle

Back-End:
- Python and its modules like
- Scikitlearn
- NumPy
- pandas

REFERENCES:

- https://pycaret.org/
- https://scikit-learn.org/stable/
- https://numpy.org/
- https://matplotlib.org/
- https://pandas.pydata.org/

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Name & Signature of Project Coordinator	Name & Signature of Mentor	Name & Signature of Class Coordinator

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PROJECT REVIEW COMMITTEE: APPROVED / NOT APPROVED