# Laptop Price Prediction Project

## 1. Introduction

This project aims to understand the key factors that influence laptop prices and to build a predictive model that can estimate the price of a laptop based on its features. The analysis involved exploring the dataset (Exploratory Data Analysis - EDA) and evaluating a machine learning model.

## 2. Findings from Data Exploration (EDA)

The dataset contained information about laptops such as brand, operating system, RAM, weight, screen resolution, and type of storage. The following insights were discovered:

* • Laptop brand plays a role in pricing. Premium brands generally have higher prices compared to budget brands.
* • RAM is strongly related to price – laptops with higher RAM tend to be more expensive.
* • Storage type and size also influence price. Laptops with SSD storage are typically more expensive than those with HDD storage.
* • Screen resolution is another important factor. Higher resolution laptops (e.g., Full HD or 4K) cost more.
* • There is some variation in prices across operating systems, but the effect is less strong compared to RAM and storage.

## 3. Model Evaluation

We used a Random Forest model, which is a machine learning algorithm, to predict laptop prices. The model was trained on 75% part of the dataset and tested 25% on the remaining data to check its accuracy.

The model performed well, meaning it was able to predict laptop prices fairly accurately. The evaluation showed that RAM, storage type, and screen resolution were the most important features in determining laptop prices.

## 4. Conclusion

In summary, the analysis confirmed that the price of a laptop is influenced by several key factors, most notably RAM, storage type, and screen resolution. The predictive model we built can help estimate laptop prices based on these features. This can be useful for both consumers and retailers in understanding how different specifications affect laptop pricing.