Laboratory Practice 1 :
Data Analytics
Video Game Sales Analysis

Project ID: 5

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Problem Statement

Video game industry needs accurate sales in an exponential market growth. In the past few years the revenue coming from computer and video games increased imposingly. So we have to predict the buying nature of several video game followers by using historical sales data.

Chapter 2

Objectives

- To use different methods for sales data visualization
- To develop an application to analyse and predict the sales of video games
- To use the most efficient algorithm for predicting the sales

Chapter 3

Algorithms

- Linear Regression
- Decision Tree
- Support Vector Regression

3.1 Linear Regression

- Linear regression is commonly used for predictive modelling techniques
- The main theme of this algorithm is to find a mathematical equation for continuous variables Y when we have one or more X variables
- This algorithm establishes a relation between two variables one variable is predicted variable and another one is result variable whose value is derived from the predictive variable

$$Y=aX + b$$

Function: model = lm (formula, data)

3.2 Decision Tree

- A decision tree is a type of supervised machine learning tree which explains about“what the input is and what is the relevant output according to our data ”
- The main objective of this algorithm is to predict the value of a target variable
- Mostly the decision tree rules are in the form of conditional statements i.e. “if-then-else”
- Decision trees are used for both classification and regression problems

3.3 Support Vector Regression

- Support vector regression uses svm classification algorithm to forecast a continuous variable
- But other regression models are used to minimize the error between predicted value and actual value
- SVR tries to fit the best line among the predefined error values
- Svr has few important key words such as kernel, hyper plane, boundary line, support vector

3.4 Accuracy of algorithms

Sr. No	Algorithm	Accuracy
1	Linear Regression	0.57
2	Decision Tree	0.83
3	Support Vector Regression	0.80

Figure 3.2: Accuracy Table

Chapter 4

Block Diagram

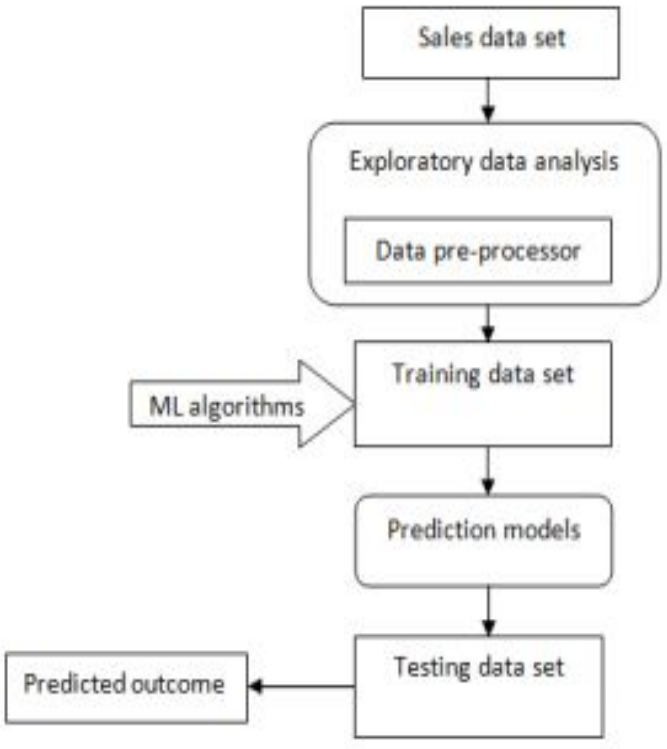

Figure 4.1: Block Diagram

Chapter 5

Screenshot of Output

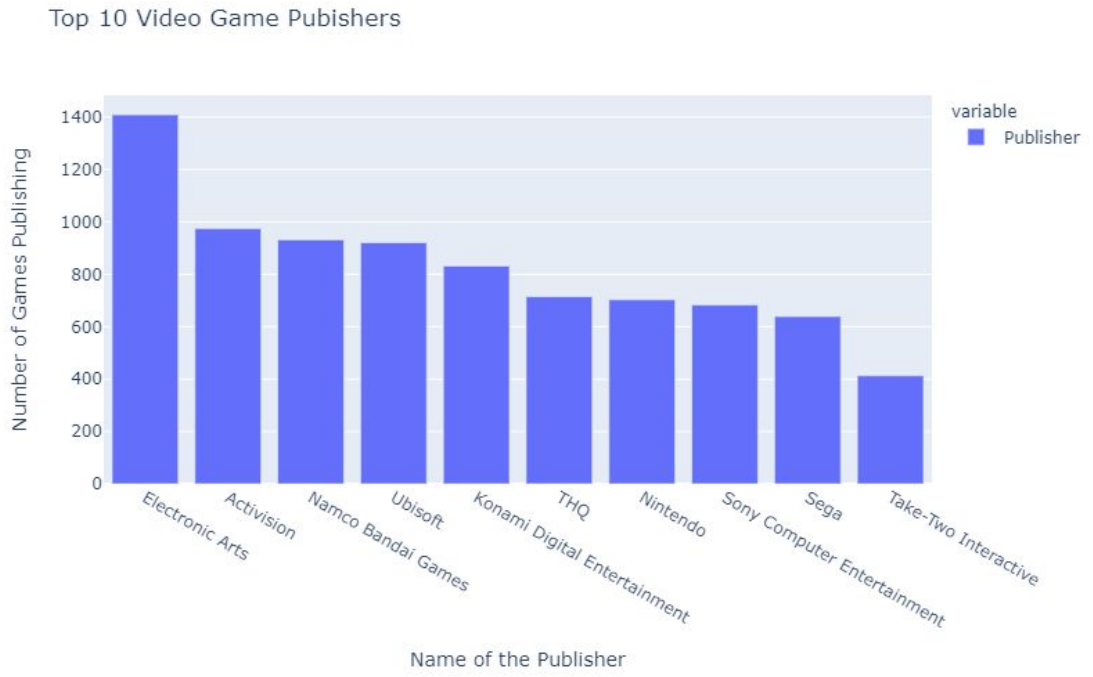

Figure 5.1: Output of the code

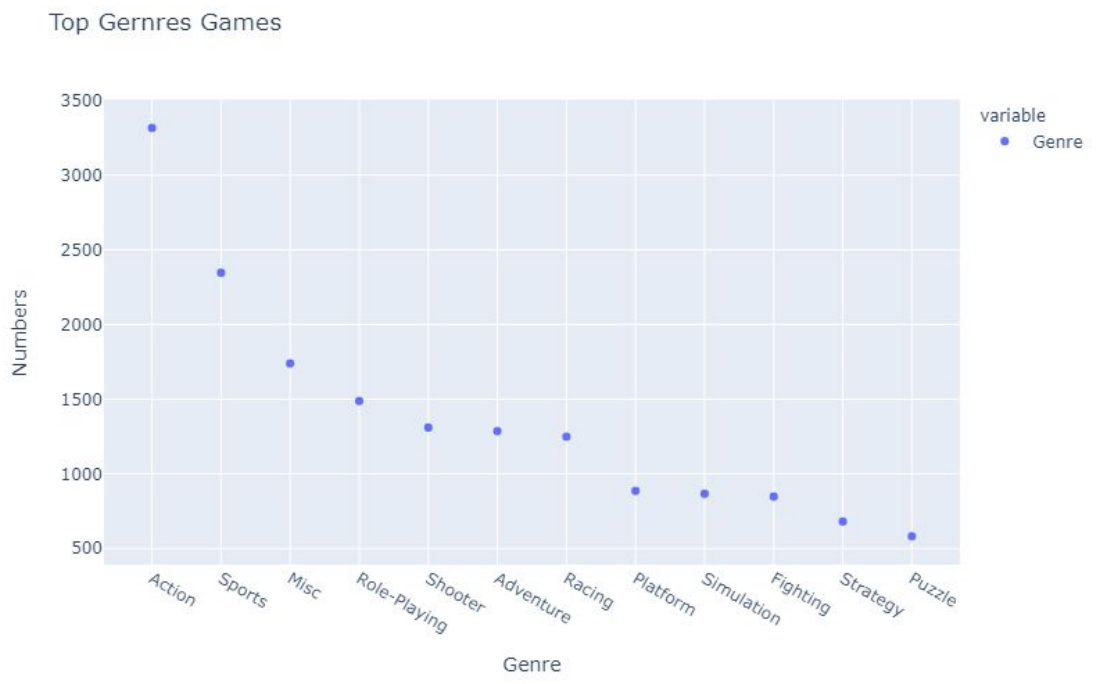

Figure 5.2: Output of the code

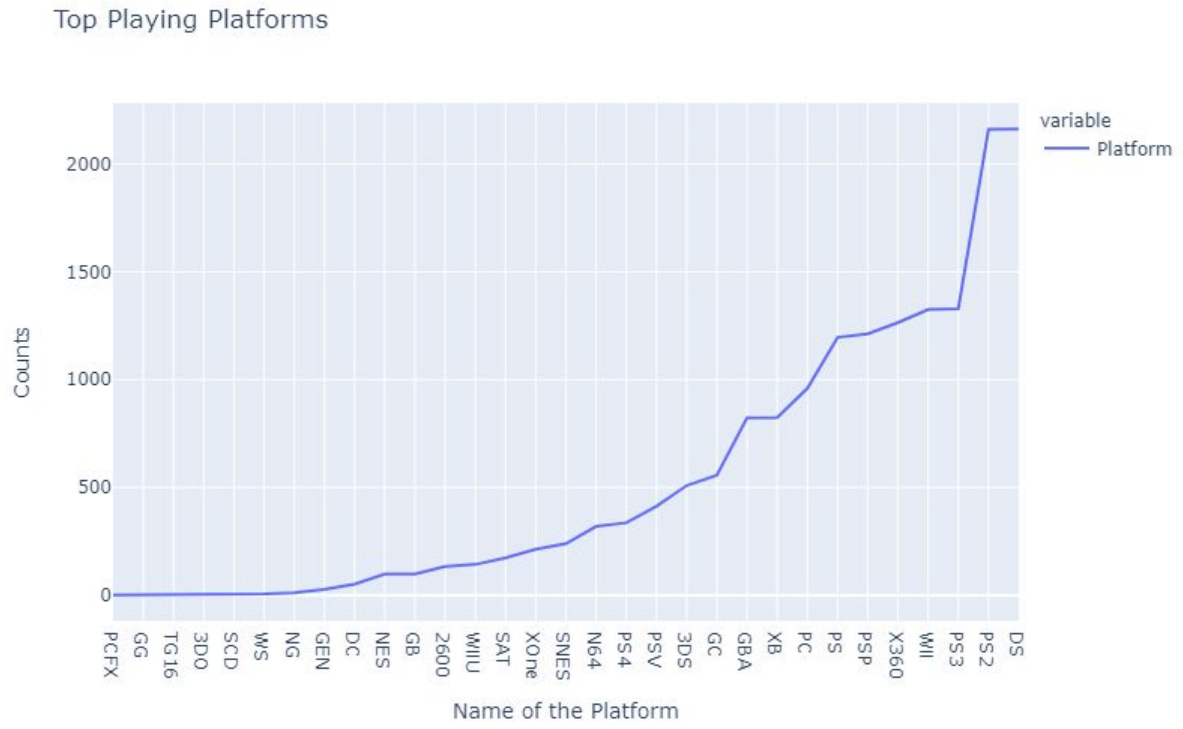

Figure 5.3: Output of the code

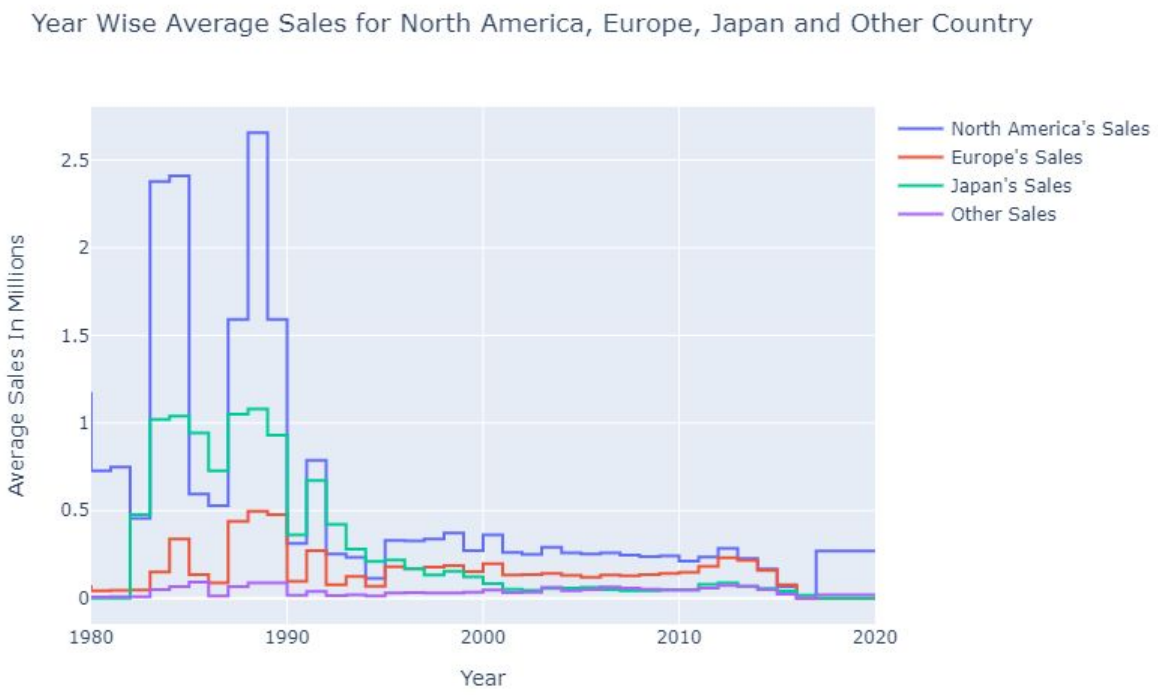

Figure 5.4: Output of the code

Chapter 6

Outcomes

- Video game sales data is analyzed and is visualized using various graphs
- Video game sales are predicted using machine learning algorithms
- This helps developers to focus of what public likes the most to increase their sales

Chapter 7

Conclusion

Sales prediction is a crucial part of the strategic planning process. For predicting sales of video games we applied several machine learning algorithms. Among all these algorithms, the decision tree gave us the best accurate result with minimum error rate. This project predicted the sales of video games with an accuracy of 0.83 i.e 83%.