Executive Post Graduate Certification in Data Analytics- Assignment 1

Assignment: Advanced Market Analysis of the Games Industry

Objective: To conduct a detailed market analysis of the games industry using data manipulation and analysis techniques in Python. The study aims to uncover key trends, predict future performance, and provide actionable insights for stakeholders.

Dataset Link -
https://drive.google.com/file/d/17Tn8laGmjcNQJGtY7jpoNhnZto7IHxPX/view?usp=drive_link

Data Preparation and Analysis with Python

Scenario:

You are a data analyst at a leading market research firm. Your task is to analyze the games industry dataset to extract valuable insights. Begin by preparing and exploring the data.

Tasks:

1. Data Cleaning and Preprocessing:
- Identify and handle missing or anomalous values in the dataset.
- Standardize the 'Genre' and 'Platform' columns for consistency.
- Create new features such as 'Decade' from the 'Release Year' column.

2. Exploratory Data Analysis (EDA):
- Analyze trends in game sales based on genre, platform, and release year.
- Visualize the distribution of user ratings across different genres and platforms.
- Identify the top 5 genres and platforms by average user rating.

3. Advanced Analysis:
- Perform a time series analysis to observe trends in game releases and user ratings over the decades.
- Conduct a hypothesis test to determine if there is a significant difference in user ratings between different platforms.
- Perform a correlation analysis to identify relationships between game features and user ratings.

4. Machine Learning:

- Build a predictive model to estimate game ratings based on features such as genre, platform, and release year.
- Use feature selection techniques to identify the most influential factors in predicting game ratings.