Executive Post Graduate Certification in Data Analytics- Assignment 2

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 SQL,Powerbi. The study aims to uncover key trends, predict future performance, and provide actionable insights for stakeholders.

Dataset Link - https://drive.google.com/file/d/17Tn8laGmjcNQJGtY7jpoNhnZto7lHxPX/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.

Part 1: Advanced Data Manipulation with SQL

Scenario:

You are tasked with querying the company's SQL database to support the Python analysis and provide additional insights. You will write complex SQL queries, create stored procedures, triggers, and views to manage and analyze the data.

Tasks:

1. Complex Queries:

- Write a query to find the top 5 platforms with the highest average user ratings.
- Use Common Table Expressions (CTEs) to calculate the average user rating for each genre and identify genres with an average rating above a certain threshold.

2. Stored Procedures:

- Create a stored procedure to categorize games into 'High', 'Medium', and 'Low' ratings based on their user ratings and update the dataset accordingly.

3. Triggers:

- Write a trigger to automatically update the 'User Rating' column to a default value when a new game is inserted into the table without a specified rating.

4. Views:

- Create a view to display games with complete rating information and filter out games with missing data.

Part 2: Dynamic Visualizations with Power BI

Scenario:

The final part of your task is to present your findings through dynamic and interactive visualizations in Power BI. Your visualizations should provide stakeholders with clear insights and enable them to make data-driven decisions.

Tasks:

1. Data Transformation:

- Import the dataset into Power BI.
- Use Power Query Editor to handle any anomalies or inconsistencies, such as missing or invalid values in the 'Release Year' and 'User Rating' columns.
- Standardize the 'Genre' and 'Platform' columns to ensure consistent naming conventions.

2. Visualizations:

- Create a dashboard to visualize the distribution of games across different genres and platforms.
- Develop visualizations to show trends in user ratings over different decades.
- Build charts to display the top genres and platforms based on user ratings.

3. Advanced Analysis:

- Use DAX functions to calculate custom metrics, such as the average user rating per genre or platform.
- Create interactive visualizations that allow users to filter games by rating, genre, and release year.

4. Reports and Insights:

- Generate a detailed report summarizing key insights from the dataset, such as the most popular genres, platforms with the highest ratings, and trends in game releases over time.