The GameSphere (Videogame Store)

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INTRODUCTION

Online video game stores are very common today, but their origin dates back many years before, from the 60s with the creation of the Electronic Data Interchange (EDI), which allowed the electronic transmission of financial data, from **that's where the concept of virtual stores begins to take shape**. The popularization of the Internet in the 90s allowed the creation of online sales portals such as Amazon and eBay, which popularized this form of sales. **Steam**, the largest online video game store, arrives after all this; was created by Valve in 2002, officially launching in 2003. The application was born as a mini-online store for certain games but years later, Valve convinced large companies to sell their games on Steam, which today has more than 120 million users. active users and 50,000 games. Our technology company wants to enter the online video game market **by replicating Steam's database system** and creating a prototype application with the key functionalities of a virtual game store.

GOAL

As developers of a company, we seek to **create a database system** that essentially replicates the most characteristic functionalities of a **virtual video game store**.

METHODS AND PROPOSED SOLUTION

To create the application database system, a 10-step ontology process was used to define the core components and entities of the system. Changes were made during development to improve understanding of the system. The overall database diagram is an entity-relationship diagram created with Draw.io. The methodology focused on replicating the Steam database and designing its own system with the following key features:

- A wide catalog of video games with main features.
- Review indicators (likes, dislikes, downloads).
- Personal library for each user with downloaded games.
- Relevant and organized information for each user (ID, username, email, password, country of origin).
- Categorized games for orderly viewing.
- Searches and queries for games in the store.
  The main tools used include:
- DBeaver CE (database management environment).
- PostgreSQL (language for creating and querying the database).
- Python (programming language for web application development).
- Flask (web microframework for Python).
- Design tools like Draw.io, Canva and Overleaf.

The decision was made to keep the system simple, removing additional functionality such as the "Community" entity. The final system consists of seven related entities: Users, Game, Category, Library, Country, game-category-rel, and game-library-rel.
Data sources used include:

- Kaggle (information about games and categories in .csv format).
- Mockaroo (user information such as names and emails in .csv format).
- GitHub and Datamundial repositories (information on countries of origin in .csv format and manually in PostgreSQL).

Uploaded .csv files to the database using DBeaver and tested important queries with a script. The final web application was created with Flask and features a more user-friendly interface, developed in Python.

RESULTS

The development of the database system was a process of continuous improvement, where the adaptability and perseverance of us as developers were tested on several occasions. Tests were carried out to verify the functionality of the database and numerous queries were performed to ensure the operability of the data. Each entity has a backup copy of the information stored in the database. The **final application** presents the **functionalities of an online video game store,** with main screens showing the game catalog, reviews, users' personal library and search options. Unit, integration, functional and system tests were performed to evaluate the functioning of all entities as a single system. **The objective of the project was met** by adding not only value to the company but also creating a system that serves as a solid foundation for a more sophisticated virtual video game store in the future. Below we present a screenshot of the application:
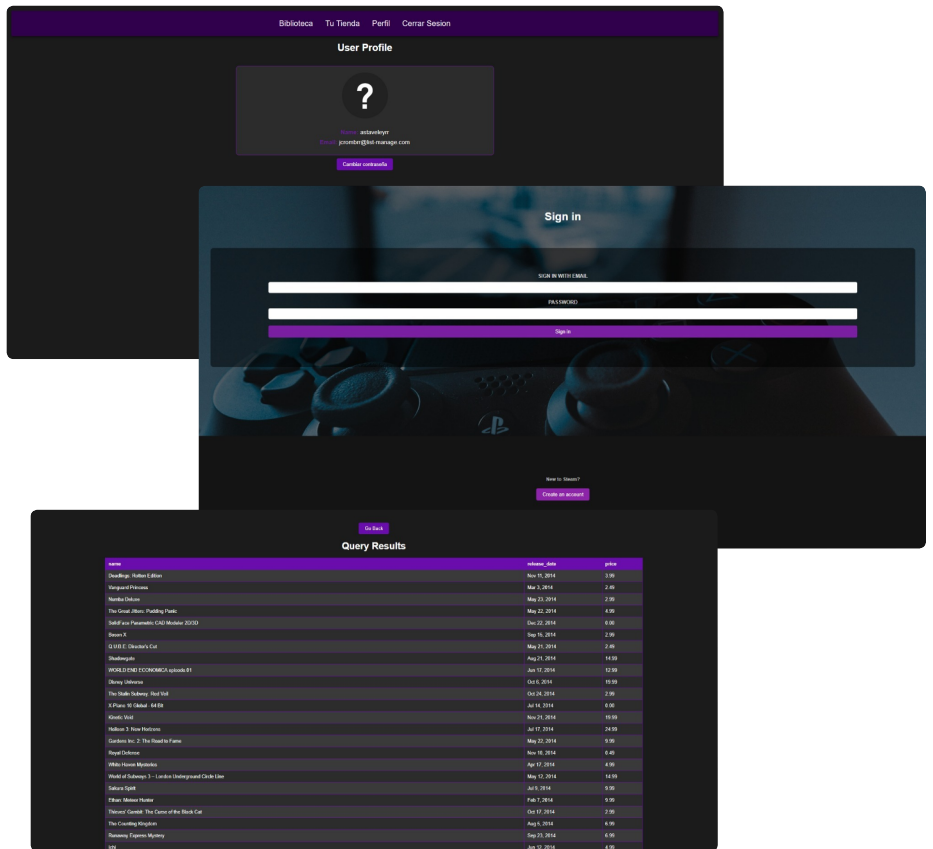
CONCLUSION

The application succeeds by maintaining the basic functionalities of an online video game store. The project manages to generate a database system that provides information and allows queries like a real virtual store. It is easy to use, replicate and useful for the user. This project is expected to add value to the company now and in the future.

REFERENCES

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