DEVELOPMENT OF AN ONLINE SALES PLATFORM USING OBJECT-ORIENTED PROGRAMMING

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INTRODUCTION

Object-oriented programming is defined as a programming paradigm that attempts to simulate things in the real world through elements called objects. These objects have some characteristics such as inheritance, polymorphism, encapsulation, and abstraction. Likewise, these objects are defined as a series of behaviors called methods and properties known as attributes.

On the other hand, electronic commerce refers to any commercial transaction in which the transfer of information over electronic networks is used to buy and sell goods or services.

Currently, online stores have had great success, since they allow you to make purchases without having to go to physical stores. Among the main existing online stores are Amazon, Alibaba and eBay. For this project, the research carried out by (Zuñiga, 2021) was taken as the basis. [4]

GOAL

Develop an online store platform, using the object-oriented programming paradigm and the three-layer architecture, in order to obtain a scalable, maintainable and efficient application.

PROPOSED SOLUTION

Python version 3.12.1 was used to develop the logical part of the software and the FastApi framework. For the data layer, the SQLAlchemy library was used to connect the database to the backend of the platform.

Html, CSS and javascript software were used for the development of the frontend. The Django framework was also used to facilitate the implementation of the application on the web.

Docker software was used to automate the deployment of the application as a local host.

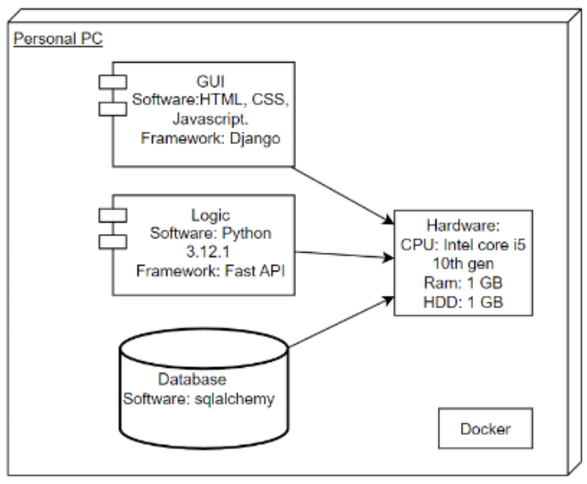
RESULTS

The application design process was carried out, identifying user stories, creating class, activity, sequence, deployment and state diagrams, as well as the navigation map between interfaces and screen prototypes (mockups).

To measure the effectiveness of the proposed software, a matrix was developed in which it was verified that the application complied with all the defined user stories. In this procedure it was obtained that the software was able to respond to the needs raised at the beginning of the project. On the other hand, a comparison was made between the mockps and the final interfaces, with these tests it was concluded that the graphical interfaces were implemented as expected.

To test the services made with Fata API, the Swagger UI documentation was used. These tests were successful.

Finally, several transactions were made in the store to check the persistence of the data used in each transaction.



Deploy diagram

CONCLUSION

Through this research it was possible to verify how object-oriented programming is functional for the development of a virtual store, because by using concepts such as those outlined in the solid principles, it is possible to achieve a modular application that is easily maintainable and scalable.

The development of tests to verify the compliance of the user stories allowed us to verify the correct implementation of the application according to the needs of a user of an online store. Likewise, when verifying the similarity between the mockups made in the design process and the final interfaces obtained, it is concluded that the software met what was expected in the mockups

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