DEVELOPMENT OF A VIRTUAL WALLET USING OBJECT-ORIENTED PROGRAMMING AND SOFTWARE DESIGN PATTERNS

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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.

According to the authors [4], design patterns are proven solutions to certain problems encountered when designing software.
On the other hand, The author [3] defines digital wallets as software that allows us to store electronic money for later use in online commerce. Likewise, the author states that digital wallets are used as a means of payment to send and receive money safely.
This project aims to develop a functional virtual wallet platform.

GOAL

Develop a virtual wallet, using the object-oriented programming paradigm and the software design patterns, to obtain a scalable, maintainable and efficient application.

PROPOSED SOLUTION

Python version 3.12.1 and Java version 17.02.12 will be used for the development of the logical part of the software, in the same way for the development of the data layer, it was decided to use the SQL Alchemy library.
In the same way, we will use the GraphQL tool to manage and unify the services of the Python and Java backends.
Docker software will be 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, and deployment diagrams.
To verify the correct functioning of the software, it was decided to use user stories as a way of verifying the effectiveness of the software
Unit tests of the code will also be carried out to determine whether the software meets its intended purpose.
To do this, the persistence of the information will be tested by checking whether the information can be stored and manipulated correctly in the database.
On the other hand, tests of the application services will be carried out in order to determine whether they generate the information requested in each case.
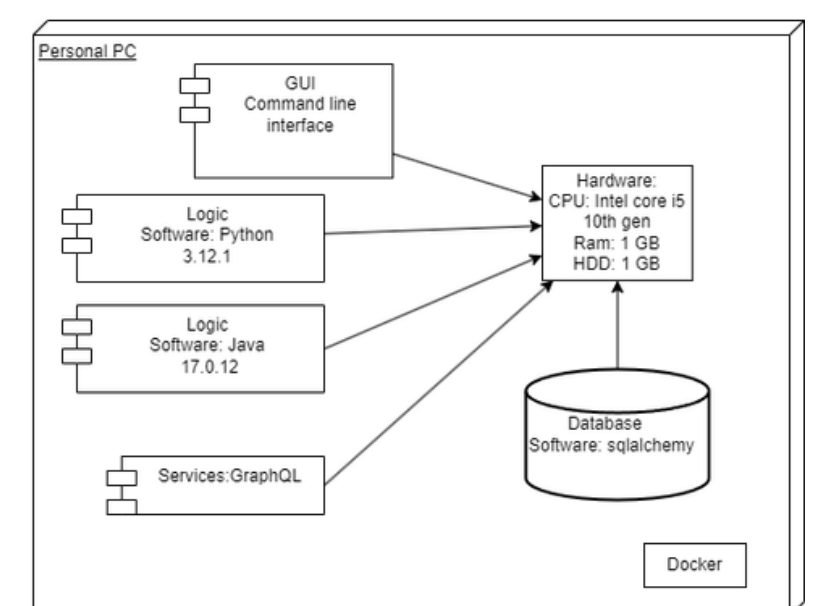
Deployment diagram

CONCLUSION

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