

Developing an Application to Create Collaborative Workspaces: An Approach to Note Management

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Abstract—This paper presents the design, implementation, and evaluation of a Web application. The developed application offers an intuitive and versatile experience to capture, organize and share notes efficiently. The results directly depend on the design, structure, and methods proposed and the architecture worked on the project, the architecture of a monolith.

Index Terms—Software development, monolith project, UML, Python, Notes App, PostgreSQL, Django.

I. INTRODUCTION

Note taking is defined as one of the best ways to collect the information necessary to go back, review, and remember the topic effectively. Anyway, it is not about writing anything down, but a process that helps to write down basic concepts in summary form for future use (Yeswelab, 2021). Digital tools continue to play an increasingly integral role in personal and professional productivity. The development of an innovative note-taking application represents a significant contribution to the realm of information management.

This research and development focuses on the design and development of an application that search solves the problem of communicating important information with other persons, a leading information management platform.

The project has the objective of being an on-line notes system, with the ability to create workspaces and then notes to manage personal information or collective projects, is design to help all people to give a order in his objectives and tasks.

Likewise, the software implements all advanced programming knowledge, from the creation of software designs and modeling to the executability of the resulting code.

II. METHODS AND MATERIALS

The methods and materials for a web development project vary depending on preferences, requirements and objectives to be achieved. In this way we can define the necessary tools to develop a web project.

A. Design and architecture

For the web development of this app we had a design approach based on a monolithic architecture, that is, it will be hosted in a single unit. With this clear objective, the next step is to think about the designs and modeling necessary to strengthen and facilitate the code when programming. //

For this reason, we develop UML diagrams in order to provide a guide on how to structure our code when programming. In these first steps, the creation of diagrams of classes, activities, states, among others, occurs. //

Once our designs and project structure have been defined, we move on to the next section.

B. Programs and materials

In this case, the programs and materials are the tools that we used for the development of the website. Worked languages such as Python, key for the development of the backend and construction of a project in Django. HTML, CSS, JS, essential for building a Frontend, also handling JSON and creating web services.

PostgreSQL is the relational database that helps us store the information and data brought from the backend, FastAPI defines routes and operators in an easy to understand way. Among other programs used are GitHub, a version control for teamwork, DBeaver, Postman and of course a code editor in this case Visual Studio Code.

C. Development method

- In the first instance, start programming based on the previous designs, first the development of the backend, once it is in its final stages, develop the Frontend. Following good practices such as documentation in each of the files.
- Link the Frontend with the backend, check that the designs have been well developed, if not, make the necessary changes and continue with the development.
- Next, perform the tests to verify that the data required by the backend is correctly read and saved in the respective

database.

- Finally, do the deployment on the web, verify that the functionalities, parameters, views are working correctly.

III. EXPERIMENTS AND RESULTS

A. Experiments and tests

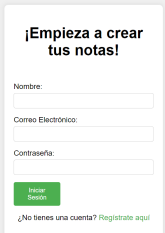
This section describes the experimentation performed to examine the performance and effectiveness of the application under development. Below is a detailed presentation of the experiments carried out, including the methodologies used and the controlled variables.

- Building a virtual environment helps us prevent errors with other possible versions existing in other projects.
- Before deploying the project in Django we perform tests on the backend verifying that the requested parameters are being read and are correct with respect to the expected results. That is, they are tests to the local directory.
- If once the project is deployed there are inconsistencies or errors in the linking of the frontend, correct them at the same time as the proposed design.
- Finally verify by entering test data for any of the unexpected situations, in order to find errors and correct them.

These were some of the tests carried out in web development.

B. Results

As a final result, we obtain an application capable of creating different spaces called Workspaces where you can add the users you want. At the same time, you can create one or more notes in order to share them with the members you have chosen for your workspace. Before using the application you must register with your Name, Email and Password, as shown in the following figure:



¡Empieza a crear tus notas!

Nombre:

Correo Electrónico:

Contraseña:

[¿No tienes una cuenta? Regístrate aquí](#)

Fig. 1. Caption

IV. CONCLUSION

Web development with a monolithic architecture approach can provide benefits in terms of the ease of solving a problem, since its vision is focused or limited to a single unit. However, it must be taken into account that in the future the scalability of a project based on this approach may be limited, that is, the large number of users could affect the performance and functionality of this system, as well as the expansion of the own web project.

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