Task Management Project

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I. Introduction

In these times, the efficient organization of tasks and projects has become something really fundamental for people and companies of all kinds, since the optimization of time has become essential, since the more optimized the tasks and projects are, the better development can be achieved. The complexity and magnitude of work activities, in addition to the large amount of information that has to be processed every day, can result in chaos if the tools and applications that are available are not used and taken advantage of. This can bring as a consequence a decrease in productivity, with difficulties with deadlines and objectives, as well as bringing consequences for team members such as increased stress and frustration. Taking into account that this is also a recurring problem among students, the decision has been made to replicate an application of this style called "Focus to do" by replicating this we will be able to understand how a task and project management app works, which allows to organize their activities, increase their productivity and maintain better control over their projects to those who wish to make such optimization, The application will be deconstructed in a data model based on object-oriented programming that allows efficient management of different entities, such as tasks, subtasks, projects, customers, among others, to understand the development of such application. The main objective of this project is to identify and replicate a comprehensive tool that will be of help to anyone who aims to improve their efficiency and organization with respect to their work or study, identifying key functionalities such as creation and tracking of tasks, organization of activities, generation of statistics and/or reports, Pomodoro type timer and all the functionalities associated with this type of applications. On the other hand, it will allow you to understand the whole development behind such an application, from its planning, to its theoretical development, diagrams and its implementation.

II. Methods and Materials

The application architecture is based on an object-oriented design, where the following main entities have been defined:

- **User**: with attributes such as name, ID, email, and password, and methods for login and logout.

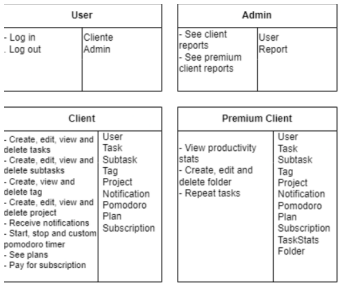

Fig. 1. CRC Cards Part 1

- **Administrator** (inherits from User): with additional methods to get reports of clients and premium clients.

- **Client** (inherits from User): with methods to create, edit, and delete tasks, subtasks, tags, projects, as well as other functionalities such as receiving notifications, using the Pomodoro timer, viewing plans, and subscribing.

- **PremiumClient** (inherits from Client): with additional methods to view productivity statistics, create, edit, and delete folders, and repeat tasks. Other key entities include Task, Subtask, Tag, Notification, Pomodoro, Project, Folder, Plan, Subscription, Report, TaskStats, and ClientsStats. These entities are related to each other according to the application's needs, implementing object-oriented design principles such as inheritance, composition, and agregation.
  With CRC cards, we can understand the functions of each class in a general way.

También podemos ver For the application implementation, modern technologies were used, such as object-oriented programming languages (Python)... Additionally, software engineering best practices were implemented, such as unit testing, continuous integration, and extensive documentation.

The application's workflow begins with user registration and authentication, where users can be either clients or administrators. Clients can create, edit, and delete tasks, subtasks, tags, and projects, as well as receive notifications, start and pause

the Pomodoro timer, and subscribe to plans. Premium clients have additional functionalities, such as generating productivity statistics, managing folders, and repeating tasks. While administrators can get reports of clients and premium clients, which allows them to monitor the application's usage and make informed decisions about developing new functionalities or improving existing ones.

III. Methods and Materials

References

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