BACKEND DEVELOPER ASSIGNMENT

Goal:

The goal of this assignment is to showcase your coding skills, your familiarity with latest Python and Django ecosystem and your ability to think out of the box, design and complete a task by yourself.

Requirements:

For this task you will need to develop a backend application that will provide the necessary API for a project management board application. You will develop this application in Python using Django.

This application will have the following functionality:

- Implement user authentication / authorization using an external OAuth2 – OpenID provider of your choice (we strongly suggest that you use Keycloak)
- Provide a CRUD Project API. A project will contain a title, description, progress and finish date and will either be personal access (only the owner can view and edit it and it's tasks) or public (Any registered user will be able to view the project and it's tasks and only it's owner will be able to edit it and it's tasks). The progress will be the completion percentage of the tasks of the project and will be automatically updated (Using any calculation algorithm of your choice).
- Provide a CRUD Task API. A task will contain a title, description, tag, parent project, progress and finish date. The progress will be the completion percentage of the task and will be updated manually from the project owner and when the task is completed, it will not be editable. The tags will be user-defined strings that will be used for the logical grouping of tasks under a project and will be passed optionally as a query parameter on the task read operations.
- Your application must be unit tested with a minimum 75% code coverage.
- Provide a Swagger API documentation for the application.
- Your application must run in production ready docker containers. Feel free to use one of the following databases: PostgreSQL, MariaDB, MySQL.
- Your application must use a form of read cache for the data (we strongly suggest that you use Redis) that will be automatically synced with any changes in the data.

This is the simplest form of the app we want you to make. Feel free to introduce your own ideas to make your app stand out. Optionally you can implement a simple User Interface.

Deliverable:

You need to provide all of your code on a publicly accessible git repository (GitHub / Gitlab / Bitbucket), along with a documentation (PDF or Markdown) where you will describe the way you built the app, your thought process, any issues you might have encountered, some pros and cons of the design you followed, the architecture of your solution, some screenshots of the application and the URL of your git repository. In this document you can optionally step up and add (describe in adequate detail) features that you didn't have time to implement in your code but you believe they would fit in the app.