Code evaluation – DIRS21

Thank you again for taking the time to do the interview with us. We are happy to tell you that we would like to proceed to the next step in the recruitment process. So today we send you a small task.

The goal is to get to know your coding style and your approach to solve problems. If you have any questions or need clarification before starting, don't hesitate to ask via email.

Task: Create a RESTful API for an availability system for hotel management, using MongoDB as the database.

Requirements:

1. Use **ASP.NET Core** and **C#** for implementing the API.

2. Use **MongoDB** as the database to store the hotel product and availability information.

3. The API should have the following endpoints:

- GET /api/products: Retrieve a list of all available product categories.

- GET /api/products/{id}: Retrieve a specific product category by its ID.

- POST /api/products: Create a new product category.

- PUT /api/products/{id}: Update an existing product category by its ID.

- DELETE /api/products/{id}: Delete a product category by its ID.

- POST /api/availability: Check availability for a specific product category and date range.

4. Create an abstract base entity class (e.g., BaseProduct) that includes common properties such as ID (string) and CreatedAt (DateTime).

5. Implement the BaseProduct as an abstract class that other entities, such as the Product entity, can inherit from.

6. Create an interface (e.g., IProduct) that defines the required properties and methods for a Product entity.

7. Implement the Product entity class, which inherits from the BaseProduct and implements the IProduct interface.

8. Each product category should have the following properties:

- ID (inherited from BaseProduct): Unique identifier for the category.

- CategoryName (string): Name of the product category. (e.g., "Single Room", "Double Room", "Standard Suite")

- Capacity (integer): Maximum capacity of the product category (number of guests it can accommodate).

- PricePerNight (decimal): Price per night for the product category.

9. Implement functionality to save and load product category information to/from MongoDB.

10. Implement functionality to save and load availability information to/from MongoDB.

11. Write unit tests to ensure the functionality of the API endpoints and entity classes.

12. Provide documentation or a walkthrough video demonstrating the implementation of the API, including core functionalities, code organization, and any additional features you choose to implement. Walkthrough Video is a Plus.

13. Optional (Plus) Implement a validation mechanism to check category availability for a specific date range.

14. Optional (Plus) Write unit tests to ensure the functionality of the availability validation

15. Optional (Plus): Implement error handling and appropriate HTTP status codes for API responses.

16. Optional (Plus): Add data pagination and filtering capabilities to the GET endpoints.

Feel free to ask for further clarification if needed. You should aim to complete as much of the task as possible within the given timeframe.

When you are finished please push your code to a repository in your Github account and share it along with any notes or questions you might have to svenja.heidelberg@dirs21.de or share it with Github user TO-alsaiyed

Thank you and have fun :)