**Overview:**

The project aims to implement the requirements mentioned in the document and to address the necessary refactorization.

As technologies for the implementation, it has been used as following:

* .Net Core 3.1 for API development
* MSSQL database for storage system
* EF Core as an ORM to connect to the storage systems
* Swagger for API interaction and possible documentation
* Fluent Validation for input validation
* Docker for containerization support

The projects’ structure fallows clean architecture with elements from design driven development.

To achieve this CQRS and Mediator patters have been used.

**High level architecture:**

A picture containing diagram

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Fig 1.0 High Level Diagram

**API Structure:**

The API is structured as following:

**Presentation** -> Web API

**Core** -> Application + Domain

**Infrastructure** -> Persistence + Database

**Tests** -> Unit Tests

**Data Flow:**

* The data flow starts in the web API project.
* When a specific endpoint is called a specific query or command is instantiated and called
* The command and query data are validated using query validators defined on the same folder level as the queries or commands.
* In the Application project this can be identified in the **UseCases** folder. (See Fig. 2.0)
* The database schemas and the EF Core configurations can be found in the Persistence project and Database Project. (See Fig 3.0)

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Fig 2.0 Application Project and Use Cases

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Fig 3.0 Persistence and Database Projects

* For each project there is a dependency injection extension which is called in the end in the startup project to glue all together.

**Setup Database**

The prerequisite will be to have installed an MSSQL server installed on the system.

After this step is completed to setup the database you can do this by pressing **Publish** button from the Database project in Visual Studio.

Graphical user interface, application, Teams

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Fig 4.0 Publish Database

After that you will have to select the SQL Server to which you want to run the publish against.

**Start Project:**

When the database is set you can start and run the project and the Swagger UI will appear.

All the requests can be made from UI.

Application

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Fig 5.0 Swagger UI