**Musicalog API and MVC client by Emmanouil Gimissis MSc ICSD MCP**

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1. **Components/libraries used**

Visual Studio 2019 and NET 5.0 were used along with EF Core 5.0, Non Factors MVC grid, Newtonsoft JSON, Swagger. SQL Server 2019 hosts the database.

xUnit is used for tests.

1. **General structure**

Web API is used to query the database and return the results to an MVC client.

MVC client is completely unaware of the database.

WebAPI is following the pattern :

Generic Entity Interface – Generic Entity – Album Entity and

Generic Repository Interface – Generic Repository – Album repository

Repository uses entity framework, mainly for ease of use and compatibility with DI patterns.

Dependency injection is used to register appDBcontext and repository.

MVC client is using Bootstrap and MVC grid to implement a useful UI with paging, searching and sorting. Update and Add forms using very simple tables instead.

1. **Setup**

Please restore the provided musicalog 220921\_1.bak to a local SQL Server 2016 or later and modify application.json in WebAPI accordingly.

1. **Possible improvements**

It’s obvious that EF is not the most performant ORM in the market, however it’s nicely integrated with DI and various patterns.

In order to enhance performance, Devexpress XPO or even better SQL Server stored procedures should be used. SQL Server SP is usually 4-5 times faster than EF. Only generic and album repositories should be modified in this case.

Also, could improve on the UI which is pretty basic at the moment.

Finally, could add some MVC controller tests, in addition to the API tests already implemented.