

**Technical Test – Documentation**

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**Exercise:**

The XPTO company wants to build an application to manage employee creation for the HR department.

This application must be developed with ASP.NET MVC for the user interaction.

The data side of the application must be a WCF service for storing and retrieving data from a SQL Server database, and must use Entity Framework (choose your flavour – Database First, or Code First).

The application must have an Administration area for managing departments within the application and should only be accessible with an Admin password.

The WCF Service is responsible for exposing all functionalities for data interaction.

Create as many tests as relevant for the entire process.

**Approach**

In order to accomplish the exercise goals the following structure was implemented:

It was created a Visual Studio solution (XptoCompany)with five projects. A brief description of each project can be seen in the following table.

|  |  |
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| **Project Name** | **Description** |
| Xpto.UnitTest | project with the unit test that were created to test solution features |
| XptoBLL | project with the business layer logic (Class library) |
| XptoDAL | project with the data access logic (Class library – entity framework dB first) |
| XptoWcfService | Wcf service project |
| XptoWebApp | Web application project: ASPNET Web Application (.NetFramework) |

Regarding more specific information I can start to say that the framework utilized for testing was the MSTest since it is the tool that I have more work experience.

I created a specific project for business layer with the classes that can be used to manage Xpto data and where the business rules should be implemented.

Regarding database access, I choose the entity framework database first with the specific code and entities present in the XptoDAL project.

The communication flow from XptoWebApp in order to get data from database is the following: XptoWebApp request data to WcfService then the WcfService get data form XptoBLL that uses th XptoDAL.

In the web application the authentication used was “FormsAuthentication” with email and password. The roles management is acomplish using the “AuthorizeAttribute” class.

**Final notes**

The sql scripts are in the folder “XptoDBScripts. Administrator user ceated (Email: AdminUser@enear.co / pass: testPassword). If needed new users can be created using the UserTest Class: method -> TestCreateUser (changing the parameters according with the needs and comment the transaction instruction) since I had no time to implement the web app feature to manage users.