

Project Submission: An Equivalent to the Written Examination

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1 Project Overview

In this project, we aim to develop a robust application that enables users to perform essential CRUD (Create, Read, Update, and Delete) operations on an existing NF3-compliant database. We will utilize the power of C# and WPF (Windows Presentation Foundation) technology to accomplish this. Additionally, we will leverage the seamless integration between Visual Studio and PostgreSQL to establish a seamless connection between our application and the database.

2 Documentation

2.1 Related Links

- Microsoft Visual Studio: Used for application development
- EnterpriseDB: Used for PostgreSQL database connection
- EntityFramework: Used for working with relational databases

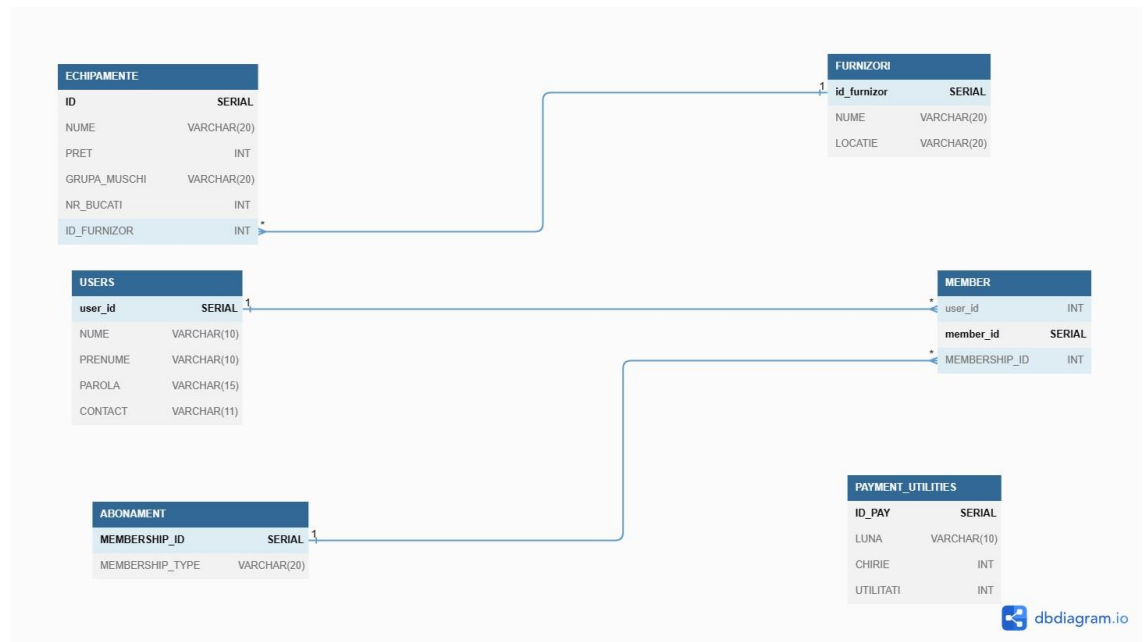
3 Key Programming Tools Used

The main programming tools used in the C# WPF application are:

- Windows Presentation Foundation (WPF): WPF is a framework for developing graphical user interfaces in C#. It is based on XAML (Extensible Application Markup Language) and provides a powerful and flexible approach to creating attractive and interactive user interfaces.

- **Model-View-ViewModel (MVVM):** MVVM is a widely used architectural pattern in WPF application development. It clearly separates the presentation logic (View) from the business logic (ViewModel) and data model (Model). MVVM facilitates testing, modularity, and code maintainability.
- **Data Binding:** Data Binding enables direct connection of data from the ViewModel to the user interface elements (View). It ensures automatic synchronization of data between the ViewModel and View and provides an efficient way of handling user interaction with the application.
- **Styling and Templating:** WPF offers a powerful styling and templating system that allows customization of the appearance and behavior of interface elements. This enables the creation of unique and aesthetic graphical interfaces.
- **Entity Framework (EF):** EF is an Object-Relational Mapping (ORM) framework for C# that simplifies working with relational databases. EF provides a set of tools and abstractions that streamline database interactions and efficiently handle CRUD (Create, Read, Update, Delete) operations.

4 Entity Relationship Diagram



5 Project Contributions

- Darius Frățilă
 - Created the views
 - Reconstructed the database
 - Documentation
- Theodor Moise
 - Established database connection
 - Created the postgresql functions
 - Implemented the viewmodels