Database Lab

In this lab you are going to design and build a database for DVT to manage their professional services business units. Application development has not yet started and the team is waiting on the DBA to finalise the database

The application requirements for sprint 1 are as follows.

The user must be able to register to use the system by providing the following details.

1. Name
2. Surname
3. Email address
4. Password
5. The department they belong to. This should be in the form of a dropdown with the following options available. (GMIC,GMOB,GQUA) . Each option must have a description associated with it (Gauteng Microsoft, Gauteng Mobility etc)
6. Gender
7. Physical Address and Postal Address

When a new user registers on the system he must not be allowed to login on the system unless his registration has been approved by an Administrator, thus the application must allow for a user's profile to be in an unapproved state unless an Administrator makes him active .

The user's password must not be readable in plain text by anyone who has access to the database. If a user loses their password the system will never be required to email them their passwords in plain text. Instead a reset link will forwarded to their email address which they can click on the reset their password. This requirement should inform your encryption strategy for the password in the database.

 In addition to the above requirements the application development team has asked for the DBA's to create Stored Procedures for their registration CRUD operations. The application team has also requested the DBA to create a Database View for them that represents the registration information all in one line per unapproved registration as they will be building a grid in the application to display this information to the Administrator for approval.

The application should log some information e.g.: "User 'Ndalama' was created", the log information should be:
- Message.
- Date Time

The requirements are for the following messages to be logged for the specific events:
- When a password is changed: "Password for user 'Ndalama' was changed".
- When a user is created: "User 'Ndalama' was created"
- When a user is approved: "User 'Ndalama' was approved"

Entity Framework lab

1. Complete the following MVA course .

https://mva.microsoft.com/en-US/training-courses/implementing-entity-framework-with-mvc-8931?l=e2H2lDC3_8304984382

2. Take inspiration from your current database design and recreate it in entity framework using a code first approach.
3. Recreate the above mentioned requirements but instead of stored procedures create your queries in linq . For this you can create a simple class with methods like getUser , InsertUser etc . These methods can take your parameters like username,firstname etc .
4. This class should in term be used in a console application to print out the results for your Queries and as an interface for your inserts.
5. Take note that logging is not required for this exercise .