

Enchanted Ears

Final Assignment



Content

| | |
|---------------------|----------|
| Content | 2 |
| Background | 3 |
| Assignment | 3 |
| ADO.NET | 3 |
| Entity Framework | 3 |
| MongoDB | 3 |
| Example | 3 |
| Report Requirements | 4 |

Background

EnchantedEars was founded in 2024 by Virag Szabo for educational purposes and her improvement in the Netherlands (Haarlem). She wanted to create something unique besides Netflix or Spotify and something that is not too complicated to build, but hard enough to create. The student is going to work hard in the upcoming weeks on this final assignment, following the steps from the subject. This student needs to make a positive contribution to the implementation of this music streaming system.

EnchantedEars has asked NHL Stenden to investigate whether present-day technology can make a positive contribution to the current implementation. The EnchantedEars platform uses Microsoft technology and EnchantedEars has therefore explicitly requested that ADO.NET and Entity Framework be used as concrete final situations in the investigation. EnchantedEars has no experience with NoSQL databases and has indicated that non-relational databases must also be included in the investigation.

Assignment

Develop a program in C# that tests the speeds of ADO.NET, Entity Framework, and NoSQL using a Stopwatch.

Make sure that all tests are combined in a single solution. Select one entity on which to perform CRUD operations. Do this for rows of 1, 1000, 100,000, and 1,000,000. Make sure that all tests within the various DBMSs are the same.

ADO.NET

Reuse the database that was created in previous weeks.

Entity Framework

Create the entire database with a Code-First approach, so you may not (and cannot) reuse the previously created database.

MongoDB

Use MongoDB for the NoSQL test. Do not need to redesign and implement the entire database, but instead, select a use case comprising at least 3 tables.

Example

Select the “subscription” entity for the speed test, in which case you also include “user”.

Next, generate a report in PDF format. This is not an official document and DOES NOT need to contain a cover page, table of contents, etc.

Report Requirements

- Presents the speeds in a matrix (table) and graphs,
- For each comparison an accompanying explanatory text to explain results that are worthy of note,
- Description of measures taken to demonstrate that the information is reliable, along with, at any rate, a description of the specifications of the device on which the tests were run.