Netflix Final Assignment

Netflix was founded in 1997 by Reed Hastings and Marc Randolph for the primary purpose of renting out DVDs in the United States. In 2007 Netflix started streaming media and in 2010 Netflix decided to expand to Canada. The company has worked hard in recent years to roll out its streaming services to the rest of the world.

Netflix currently uses an Oracle database that was set up when the streaming service was launched (at the time still a DVD rental service). The organisation is concerned about the additional capacity required to keep the system flexible after internationalisation. Netflix is therefore considering taking another critical look at the current database design and the implemented techniques.

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

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

In the case of ADO.NET you may reuse the database that was created in previous weeks. For Entity Framework you must create the entire database with a Code-First approach, so you may not (and cannot) reuse the previously created database. You must use MongoDB for the NoSQL test. To set up the MongoDB database, you do not need to redesign and implement the entire database, but instead select a use case comprising at least 3 tables. Example: You have selected the "subscription" entity for the speed test, in which case you also include "user" and "profile".

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. Make sure that the report meets the following requirements:

- Presents the speeds in a matrix (table) and in 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.