

Lab exercises for theme 2:

In this lab you will perform some efficiency studies, performing natively stored and shredded XML. You need to perform the following steps:

1. Select one of our suggested datasets for your test. If you want to use your own dataset, talk to your lab assistant so that it is suitable for getting interesting results.
2. Create two XQuery queries for the data. At least one of them should be a complex join query. It is advisable to test them in Oxygen for (parts of) the dataset.
3. Load the XML schema into ShreX. Analyse the shredded model created without annotations so that you understand how it is built. Load the relations and data into MS SQL Server. Translate your above queries into SQL, run them and record the performance. (Make at least 5 runs of each query.) Look at the query plans and save a picture of them, you need to compare these with the query plans for your hybrid queries.
4. Why does the performance differ between runs? Suggest some plausible reasons.
5. Add maptoXML annotations to your schema to get a native XML representation. Load the new schema and data into MS SQL Server, translate and run your queries and record performance and query plans.
6. Create one more shredding by altering annotations in the XML Schema. Perform the same steps again and record performance and query plans. (Try to select your shreadings so that you get interesting results based on your performance in 3 and 4).
7. Compare the performance and query plans and try to explain the difference in performance.

Make a report with your queries, annotations, description of shreadings and explanations. For pass it is required that exercise 7 is answered by a table comparing all results together with a discussion on reasons for the differences.

For + you need to perform one of the following tasks:

1. Compare your performance with performance for a native XML database. (See lecture notes for tips).
2. Compare MS SQL Server's XML features with XML features in any other relational database. (Theoretically, by a literature study or by performance tests.)
3. Do some further exploration on MS SQL Server's XML features by some practical tests.