Fine Jewellry International

We could learn in our research that there is a current revolution in the database field. Big data which consists of extremely large data sets that may be analysed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions, demands higher performance rates and query optimizations that relational databases are struggling to provide.

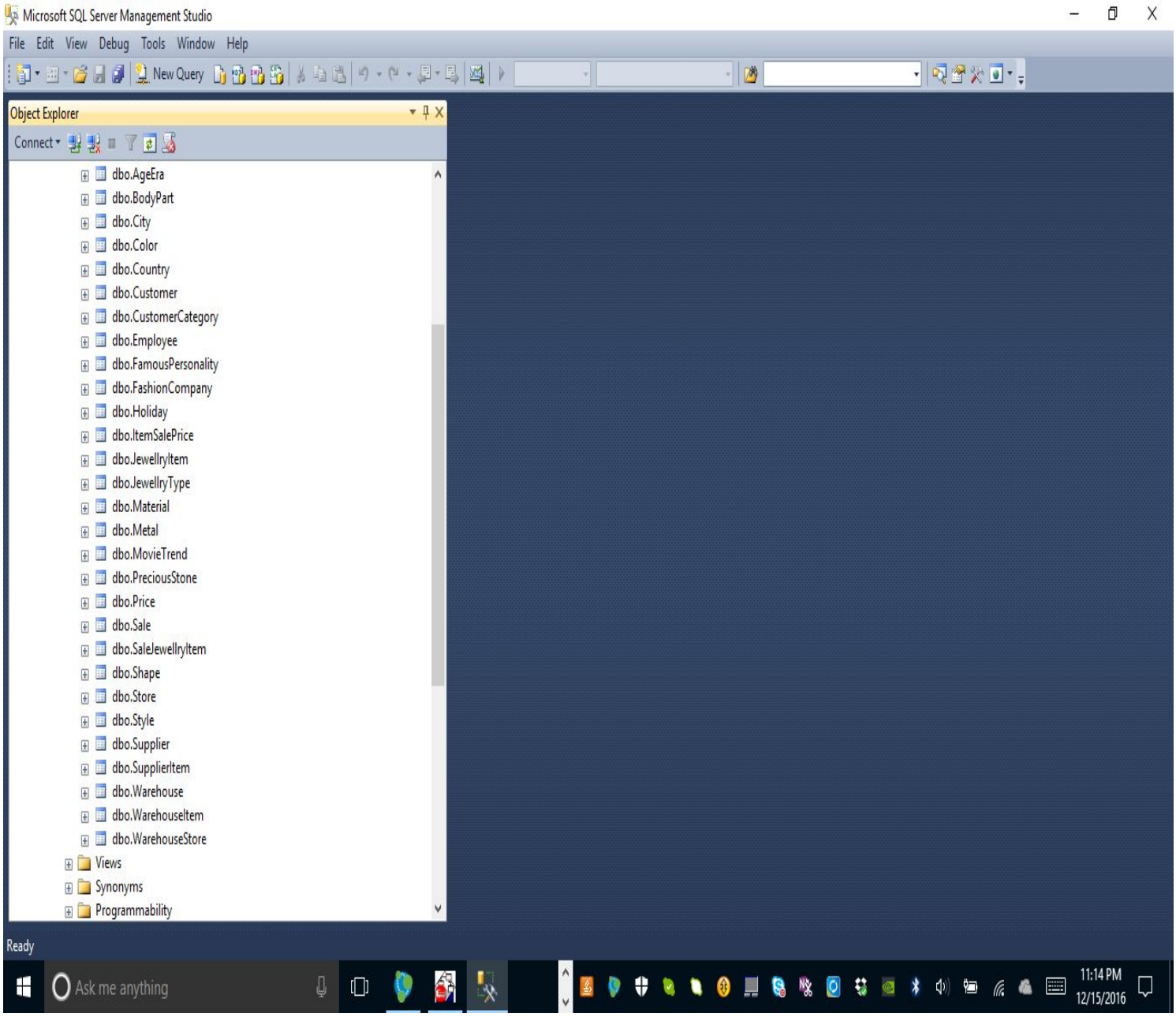
The database revolution aims to provide tools to better handle large volumes of data -both structured and unstructured - that inundate business on a day-to-day basis. But it's not the amount of data that's important. It's what an organization do with the data that matters. Big data can be analyzed for insights that lead to better decisions and strategic moves.

To present our business case, we designed a data model for Fine Jewellry International -FJI. The data model represents suppliers, customers, employees, stores, jewellry, warehouses, sales, prices, and different descriptives qualities for jewellry. FIJ is a global company that has customers, employees, suppliers and stores located all over the world. This is a common case in successful industries nowadays that perform global operations on a daily bases generating tons of data about operations. In today's business environment information is key to be competitive in the market. Decision-makers demand information about daily operations of the companies in a very detailed way at incredible high speed. This becomes a challenge for IT professionals, database administrators, data scientists, and business intelligence analysts. And these are the challenges that graph database tools aim to solve.

Relational databases in industry can have dozens and dozens of tables. When business users want to extract information abou the data stored in the databases, database developers face the need of making complex join queries in dozens of tables. Join operations are costly and the fact of joining a big number of tables make response time very slow and some queries are just too complex to execute. The negative impact of this situation is that query complexity is high, response time is low, and some queries are too hard to design and execute.

In our research, we experiment with this situation with a data model that contains 29 tables that need to be joined in different SQL queries.

1. The first step in our experiment was to create a business data model that illustrates the idea of the real business environment of today's organization, that is complex queries, information overload,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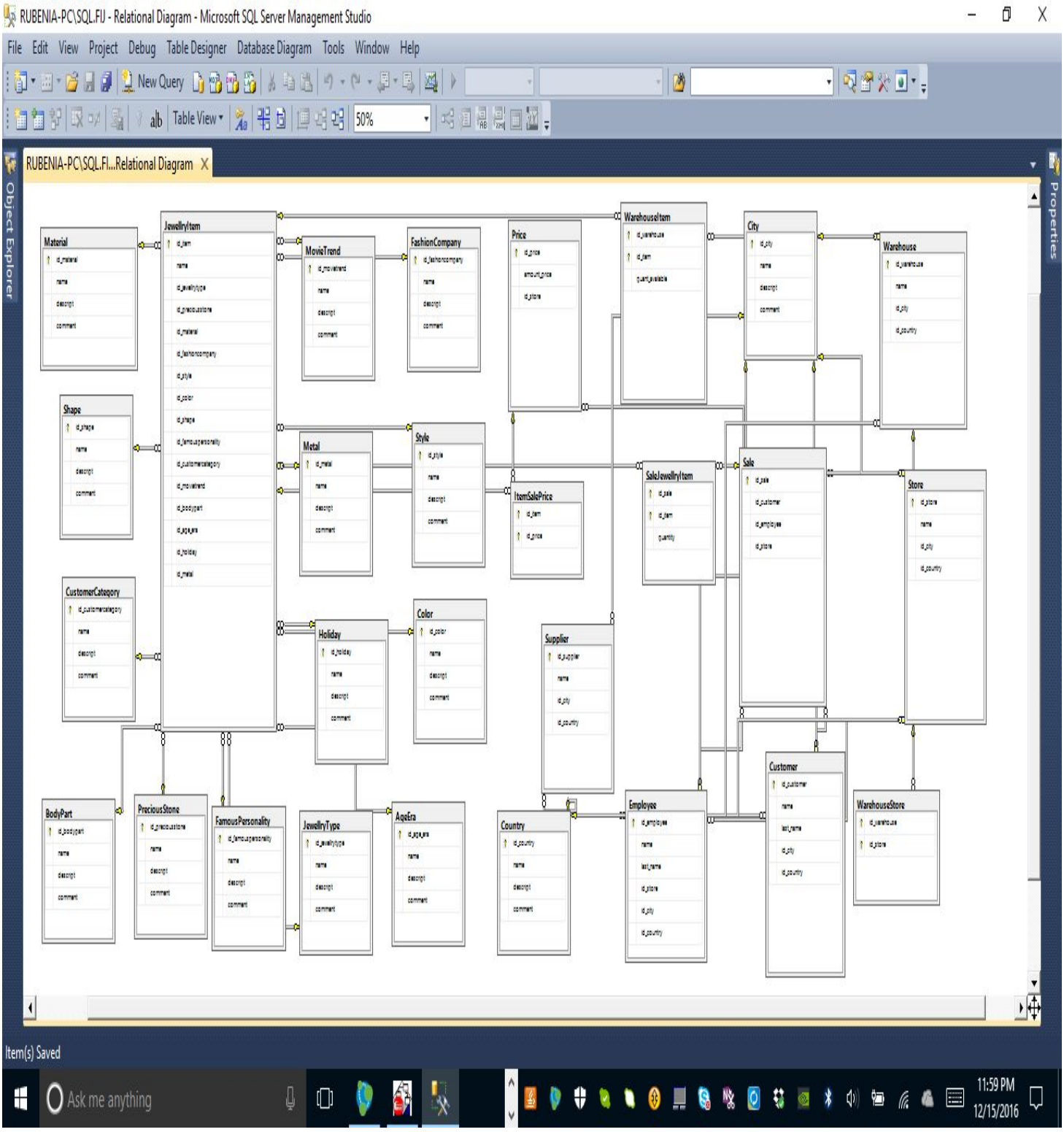
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