T-SQL Technical Debt

Technical Debt is a programming concept that is also known as code debt.

The concept of Technical Debt applies closely with Agile software development, but also applies to database development. There are many tools available to report on technical debt for C#, PHP or other programming languages, but there isn't much available to manage the SQL Server or T-SQL technical debt or general database design technical debt on SQL Server.

Some of the traditional technical debt causes are:

- Poor design.
- Lack of coding standards.
- A rush to get things done rather than focusing on stability and sustainability.
- Non refactoring code as it grows.
- Evolving code or environments to just make things work, rather than to make things work well.
- many more…

Reducing technical debt will lead to a more sustainable environment.

Example of technical debt in SQL Server.

> Consider a project that has been using SQL Server over the last 10 years which has evolved from SQL Server 2000, and is currently running on SQL Server 2008 with a plan to move to SQL Server 2012. There were practices with SQL Server 2000 that were considered best practices, or the right way of doing things that aren't the case any more.

> For instance in SQL Server 200o using TEXT columns was the norm for anything that was larger than 8000 bytes that wouldn't fit into a VARCHAR column. In SQL Server 2005 Microsoft introduced the concept of VARCHAR(MAX) to go beyond the 8000 byte limit (along with NVARCHAR(MAX) and VARBINARY(MAX)). It has been rumored that TEXT columns would be going away since SQL Server 2008, but they are still supported in SQL Server 2008 R2. SQL 2012 has the TEXT column on the official deprecated features list with the statement of "Use varchar(max), nvarchar(max), and varbinary(max) data types."

In this example where Microsoft has announced that the TEXT column type will be going away at some point in the future, the use of the TEXT column type is considered technical debt. Just using that column will cause (based on the deprecated feature list from Microsoft) your code to break at some point in the future. TEXT columns still work in SQL Server 2012 even though it is deprecated, and in the CTP1 early release of SQL Server 2014 they still work, but since Microsoft has announced that they are deprecated who knows for the future.

Technical debt is one of those things that is up for much debates based on your specific coding standards. Anything that analyzes technical debt needs to allow specific overrides bases on your local coding standards. For instance some people argue that using spaces instead of tabs for indentation in your T-SQL code is the right way, and others argue that tabs are the only way to do proper indentation. For this specific case there are many pros or cons to either side of the argument, the key is coding standards. If your coding standard is one way or the other, you are in better shape than if it is not defined.

What do you consider T-SQL Technical Debt?