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Desktop Application for Survey Data

USe-case

Desktop Application for Survey Data

Overview

We developed a desktop application to edit and compile the output questionnaire data collection, for a leading marketing research and digital marketing solutions provider. Their requirement was to enhance their core system, which is used for managing and analyzing the survey information and data.

The existing application collects output data to be used for reports generated for presentations, conferences etc. It uses a system for generating aggregates requested by the end users. The application was having dependency on MS Excel which is used in data visualization and data reporting. The project goal was to develop an advanced version of the existing application.

Business/ Technical Challenges

Unexpected crashes: The existing application was not able to handle large amounts of data. As a result the application used to crash during starting up and while running different operations.

Compatibility Issues : Windows OS software updates could make the existing application unstable. Also the newer versions of MS excel - those above 2013, were impacting performance. The existing application was built using VBA technology, and the support to this technology has been discontinued by Microsoft.

Large data handling &performance : The existing application was not able to handle file with larger amounts of data, resulting in slow processing. Files with data above 0.5 million records were not able to be processed.

The key challenge we faced was that this was a core system for the business operations, which meant that we had to work on a live system. Moreover, this was the first project we were carrying out in this domain, with no track record or prior experience.

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Technologies/Platforms Used

Application Type	Desktop Application (Microsoft Windows)
Development Language	C#.NET
Database	SQLite
Tools/ Libraries	VSTO, NPOI, OPENXML

Implementation Approach

The SQlite database was integrated into the application to handle data. The new application was developed in C# with better approaches, and the usage of popular libraries like NPOI and OPENXML resulted in generating the output with graphs and tables much more quickly. The existing application was using VBA and interop for calculation and workbook related processing. The data handling in SQlite DB enabled the handling of large data with improved performance.

Business Benefits & Key Features

Elimination of unexpected crashes: The crashes are reduced to almost nil in the new application, compared to frequent crashes in as high as 20% of operations in the existing version. This was achieved by rebuilding the whole application using C#.net and using efficient libraries.

Improved maintainability: This was achieved by switching to more efficient frameworks and technologies like C#, VSTO, NPOI, OPENXML, SQLITE. These provide better performance and long-term support, compared to VBA.

Improvement in performance & large data handling: Overall performance improved by 10X compared to existing application. In the new implementation, 90% of data is handled in DB making it easy to handle the files with large data. Files with more than 1 million records can be easily processed without any performance impact

About Innovature

Innovature provides IT consulting to various industry segments like retail, utilities, media & entertainment, energy etc and leverages AI, RPA and block chain technologies to deliver business growth. ISO certification reinforces its pole position globally in the field of information security, as largescale data is processed for effective decision making. Innovature has for more than a decade expertly steered its clients worldwide towards innovative products and services for their digital transformation. It has a track record of successful execution of more than 600 projects for nearly 100 organizations across the world.

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