Creating Advanced Data Solutions for an Educational Institution
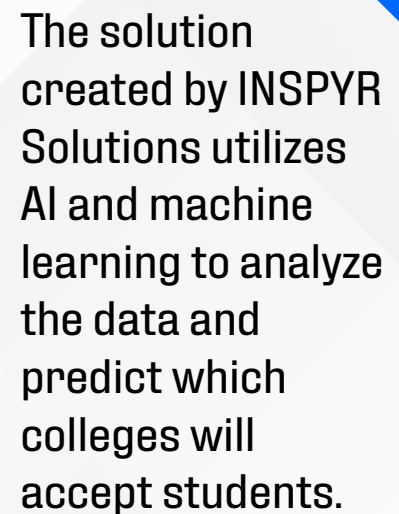
Challenge

A prominent charter school engaged INSPYR Solutions to assist their department of guidance and counseling with their initiative to drive decisions based on valuable data that it had gathered over the years. Our team proposed the idea of a data warehouse solution that could assist them by mining all their previous years of data to offer the best advice to students. INSPYR Solutions delivered a system that meshed data together from several disparate systems and created an intelligent tool that was easy for the staff to use in their everyday efforts to assist students.

Solution

The INSPYR Solutions team went to work immediately and deployed a team of three experts that consisted of a project lead along with two consultants who developed the solution. To best address the client's needs and provide a flexible solution, the team moved quickly to analyze new requirements, provide deliverables within the given timeframes as the project evolved and showcase the solution to the client on a regular basis.

The first order of business was to create a means to collect data from different systems into a central data solution, then provide dashboards for different lines of business. While they had the data, they lacked the key integrations needed to connect that data with Power BI to create charts for data analysis. The solution needed to bridge the gap between separate data systems and allow the team to visualize the results.

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The team also developed solutions that automated manual steps to acquire data utilizing the power of the Azure cloud, namely Azure Data Factory. The result was a fully automated system that took data from various sources and collected it all in one central cloud data warehouse. This solution freed up several employees to analyze data, utilizing analytics without the processes of creating data manually along with other unnecessary tasks of manual data entry, data transfer, and related work.

The resulting Azure data warehouse and Power BI solution is tailored to the school's college counselors and their needs. Student data such as SAT and ACT scores, extracurricular activities, class performance and more are collected along with data from external sources such as colleges. This includes historical data as well as live data to provide insights that incorporate data from the whole ecosystem.

The tool created by INSPYR Solutions utilizes AI and machine learning to analyze the data and predict which colleges will accept students. This gives counselors excellent predictors to help guide students on which colleges to apply for with a high degree of accuracy for acceptance.

In addition to these functions, the counselors can analyze trends and patterns in student scores to better advise both students and faculty. For example, if a student was underperforming in a certain subject over time, the counselor could reach out to the current teacher and address the issue. Early intervention gives the teacher and student more time to work on the subject in question and improve scores.

Outcome

The resulting solution included an Azure data warehouse to store the data with ELT pipelines in Azure Data Factory that streamline the data from multiple applications to the data warehouse. This process reduced the need for manual efforts, and now with Power BI, the reporting process is automated and reliable. The outcome was a robust solution that required minimal manual intervention thanks to the automation of various processes. This has saved the staff a great deal of time and allowed them to expand their work in other areas.

In addition to these efficiencies developed by the INSPYR Solutions team, the client also has the ability to create advanced visuals to showcase the various modules and the performance that worked for their students and faculty. These visualizations provide a holistic outlook for the client's team, adding clarity that will better guide decision-making for the students and for the organization in general.

The client was so pleased by these solutions that they have continued to expand the scope of the project, requesting further dashboards and features. One example is a dashboard to be able to track which universities and majors students enrolled in once they graduated from high school. This data can be used for further predictions and more. Other departments could benefit from similar dashboards as well, so there is a great deal of opportunity to expand on what was built through this strategic initiative.

Client Profile

The client is a prominent charter school known for its prestigious education standards as well as its strong extracurricular program. The school prides itself on helping students realize their full potential and be the best they can be in all aspects of their lives. Preparing students for college and life beyond school is a top priority.

Technologies Supported/ Created

Azure Data Factory, Azure SQL Database, Playwright, Power BI

About INSPYR Solutions

Technology is our focus and quality is our commitment. As a national expert in delivering flexible technology and talent solutions, we strategically align industry and technical expertise with our clients' business objectives and cultural needs. Our solutions are tailored to each client and include a wide variety of professional services, project, and talent solutions. By always striving for excellence and focusing on the human aspect of our business, we work seamlessly with our talent and clients to match the right solutions to the right opportunities. Learn more about us at inspyrsolutions.com.