ASHVINS GROUP
TECHNOLOGY PROFESSIONALS

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DEVELOPMENT OF A WEB-BASED QUALITY ASSURANCE SYSTEM

Client Profile:

A National Reference Laboratory established as a part of the Government's HIV/AIDS Strategy to evaluate HIV tests and adjudicate on the interpretation of HIV test results. Their goal is to support laboratories internationally that perform testing for the diagnosis and management of human infectious disease. Their mission is to promote the quality of tests and testing for infectious diseases globally.

Technologies Used:

Well-defined layered architecture, .NET framework, ASP.NET, Entity Framework, Microsoft Visual Studio, Developer Express, Microsoft Internet Information Services (IIS).

Project Summary:

Laboratories monitor and verify their data by using independent control samples to verify the validity of patient results. ASHVINS Group was contracted to develop a comprehensive, secure web-based Quality Control Program that would allow participants to monitor the precision and accuracy of tests' results on a daily basis. Security for the application had to include specific role-based authorization based on the application's roles infrastructure. This addressed the granular security requirements based on the specific user roles. The web-based system needed to provide users with the ability to manually enter or automatically interface with laboratory instruments to enter Quality Control and Specificity Monitoring test results. This system would generate real-time graphical reports and provide peer group comparisons to other laboratories using similar test methodologies. Additionally, the application included the development of an audit trail to store a detail trail of the changes for all the critical operations. The project was developed in phases beginning with the creation of software requirement specifications. The application was designed to be scalable by using the standard enterprise web and data forms solutions. Since the client works with laboratories worldwide, the design included the consideration of adding additional locales to the application including optional language, date and number formats. The ASHVINS Group managed and directed the activities necessary to develop the application. These activities included: Use Case Analysis and Requirements Development, Architectural Design Documentation and Reviews, Test Case Development and Software Verification and Validation.