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IMPLEMENTING A DOCUMENT MANAGEMENT SYSTEM WITH BREEZE LIBRARY, AZURE BLOB STORAGE, AND FILE SYNC FUNCTIONALITY

ABOUT
VERHOEVEN & LEENDERS

Verhoeven & Leenders is a leading structural and civil engineering firm based in the Netherlands. Established in 1995, the company specializes in the design and construction of innovative and sustainable buildings for various sectors, including residential, commercial, educational, healthcare, and cultural.

With a team of highly skilled engineers, and consultants, Verhoeven & Leenders has gained a reputation for delivering exceptional architectural and engineering solutions that are tailored to meet the unique needs and requirements of their clients. They have a proven track record of delivering outstanding projects that contribute to the built environment and positively impact the communities they serve.

PROJECT CHALLENGE

Verhoeven en Leenders required a Document Management System (DMS) to handle and process project-related documents. During the course of the project, the scope increased from just container syncing to file sharing and email storage functionality.

The DMS had to allow users to synchronize multiple documents from their local systems to the DMS application as part of the file review process. Users could then assign these documents to higher-role users, such as project leaders, in the application for approval. Once a file is approved, the DMS maintains this version and becomes eligible to be uploaded to cloud storage and shared with external parties via a shared access signature (SAS) token.

The project lacked existing documentation or details. The tasks involved setting up the project and extending the functionalities of the existing implementation. It included implementing new requirements and modifying existing ones. A working concept of the breeze library for the database transaction was also required. Additionally, a file-sharing functionality had to be implemented to store all data on the cloud and enable file sharing with specific people. The capability of a file review system had to be incorporated into the workflow, along with the ability to synchronize various files within individual projects.

OUR SOLUTION

We successfully set up the code and addressed past bugs to ensure smooth execution. Additionally, we invested time in Proof of Concepts (POCs) to thoroughly understand the working concept of the Breeze library, which is a core component of the application. It has allowed us to interact with entities seamlessly and carry out all database transactions.

We chose Azure Blob storage for storing files, as it provides easy access to files via Shared Access Signature (SAS) tokens. To secure files, we developed a utility application to validate users.

Furthermore, we have implemented project synchronization, which pulls live environment projects into the DMS and makes them available for document processing.

ACHIEVED METRICS

Ability to synchronize newly added/updated/removed files and folders in the DMS.

Ability to upload files to be shared on azure cloud and make it downloadable for intended users.

Conversion of role assigning screen to a role matrix screen which enables users to make permission selections at one go.

Implementation of workflows that auto allocate users as per their role.

Implementation of token verification application that validates the file download token and user initiating the file access.

Addition of new database tables as and when required to support the current and new functionalities.

Versioning of files in the DMS to track the status of files at any given point.

TECHNOLOGY

Eastern Enterprise proposed the following technology to easily reach the requested functions

ASP.NET Core Blazor

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KEY BENEFITS

DMS can synchronize all the files and folders created inside individual projects for reviewing purposes.

DMS allows the user to assign multiple documents to another user for review. It handles the review approval and rejection scenarios

Once a workflow is approved, they can upload their file to the Azure cloud. Then the user can share it with external parties.

DMS makes handling and processing all documents easy and readily accessible for the user in a shared environment.

RESULT

Verhoeven en Leenders employees will soon start using the DMS and we are excited to get their feedback.

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TESTIMONIAL

Rubin Alkim
BIM Modeller/Programmer, Verhoeven En Leenders

For about half a year Verhoeven en Leenders has been developing a document management system for our own internal use. Together with a programmer that worked for us we developed a good part of it. Unfortunately he was looking for another position at another company which put us at a difficult spot for continuing the development.

Luckily Leon Leenders came across Eastern Enterprise, a business that aided with the development of IT related tools. We had a very constructive first meeting. We discussed the steps that we already took, what was already developed and made a plan together how Eastern Enterprise could assist us in further developing the DMS. Leon and I were positively surprised and started the collaboration between Eastern Enterprise and Verhoeven en Leenders.

We started off with the research and acknowledgement of the code for the developer of Eastern Enterprise. This was a tough task, but not impossible for the developer. After this process we quickly began developing the features and expanding the possibilities of the DMS. Eventually we also extended the scope of the project to add an extra file sharing feature and an email archive feature.

The team that worked on it consisted of multiple people from Eastern Enterprise. From Verhoeven and Leenders the following people worked on the project: Leon Leenders, CEO of Verhoeven en Leenders. Rubin Alkim, Lead coordinator of the DMS. Joey van de Poel, sub coordinator and assistant developer of the DMS.

Our communication relied mostly on daily meetings through Microsoft Teams to discuss the tasks and bugs that could be picked up by the developer. Having these daily calls of about 15 to 30 minutes greatly increased our efficiency and also helped Eastern Enterprise understand perfectly what we wanted to add to the DMS. We got together to discuss the user stories, features, tasks and bugs that had to be tackled. These discussion points were then organized on the Azure Devops platform so that the developer always knew what he could work on and what the priority was of certain tasks.

We are very thankful for them assisting us with the development of the DMS. We are currently implementing it inside our own work process and we look forward to working with it in the future. Thank you for the productive and very pleasant collaboration.

For more information
Visit our website: www.easternenterprise.com
Contact Us: marketing@easternenterprise.com | +31-74-2591801

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