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Situation:

Nexient is a software company working with different clients as FHLBank, Home Depot, and so on. Nexient has 310 employees working in different areas like Marketing, Developing, Sales, etc. My manager is Chris Krone and our team has 14 developers working individually and pair programming depending of the task and the complexity.

The client FHLBank contracts Nexient for the project and the team has different areas such as development, QA, etc.

FHLBank is a bank whose main brand is located in Atlanta. This financial institution offers services like loans, housing, and jobs and supports safekeeping activities like purchase, sales, and interbank transfer.

Project: FHLBAT BANK

FHLBAT BANK is a project which purpose is to update the core of the bank system of Atlanta.

This current system called MSP executes and registers tasks such as Purchase and Sales for a client with different profiles like the staff and external.

The bank could register the Purchases and Sales one by one by a screen, or it can read data from an excel file in a specific format.

The system has to be able to generate reports (purchases and sales). One is a monthly report which is generated automatically and a custom report which is generated by the user actions selecting dates and activity, purchase, sales, or both. The report format is PDF or Excel.

Task:

Currently, the system bank was developed in COBOL, and the interfaces are not friendly to work with. Tasks such as read a CVS file and save data in the database take around 30 seconds.

The system is not reliable because it works on one big server and one database. This environment has worked for many years without problems but now, because more people is using the internet as part of life, the number of users has increased, so the systems become to work slow

There are some additional requirements that come from a different department so we need to fulfill requirements by developing an innovative system.

The main purpose of this project is to update the system for a new language and architecture to improve the response time to the user and also to have more reliability in the system.

Action:

As I learned in the Enterprise Architecture and Software Engineering courses, one of the best solutions to improve the performance and availability of the systems, is to divide them into small components and distribute them in different servers.

To achieve this goal, the first action we should do is update the system, the language chosen was JAVA for the reason this is one of the most popular languages with good and consistent support. The architecture was designed in the front-end and back-end. For the front-end, the system works with Liferay and back-end Java.

In the project, we work with scrum methodology and JIRA as tools.

The new system started to use JBOSS and we use MySql Server and MSSql server as databases.

The system is divided into different modules. The main modules are Safekeeping – Purchase and Safekeeping – Sale.

I am working in the Safekeeping – purchase module, I developed some features such as Report and File Uploaded. The tasks for the report were designed the table to show in JSP (Front-end) and the services (back-end). For the test, I have to validate the behavior and the result with the same actions in the legacy system.

For the File upload task I worked with pair programming with a team member called Prathibha. The task was to read data from a file where we can find the purchase registers. The file type could be Excel or CVS, in the legacy system only CVS files could be uploaded.

For this project we work with Scrum, we apply all the steps I learned in Software Engineering about Agile Development and for Scrum. We have daily meetings where each member of the team has to say the activities from the previous day and the activities for the actual day. In these meetings, we discuss possible solutions for problems and ask the Product Owner about the business.

Result:

The first result users and stakeholders can see is the speed. In the legacy system to read and save data from file to the database used to take around 30 seconds to 1 min, depending on the number of registers. Now, the system saves the same amount of data in 3 seconds. If the lines or registers have errors in the format or in the values, the system shows a table where we can see the exact number of lines and the type error. The user is able to export the error table in Excel and PDF format. In the case the file does not have errors, all the registers will be saved in the purchase table in the MSSQL database.

For the reports, the new system shows the report with Purchase Data with status in progress by default. The user can filter the data to show different registers.

Depending on the profile, the users could execute different actions, the normal user could upload the files, the bank user could approve or deny the transactions.

After all test QA did in the test environment, shows the system has a good performance, in production, we are sure the system will work perfectly because it has more resources than the test environment.