

# *Signadocs: A Better Way to Manage Documents*

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**Abstract** —*Signadocs is an online web application with the intent of providing an efficient way of managing documents digitally and keeping track of their status. By using digital signatures and keeping track of a document status it eliminates the need of paper printing to manually sign a document and having the need to scan it once finished. It gives the comfort of having documents stored safely on the cloud and knowledge of where a process stands, it also eliminates the hassle of having to search through email looking for a specific document. Signadocs can be easily accessed by all major web browsers. A lot of organizations have a gigantic amount of data and information that, if not handled properly, causes a waste of opportunities, that is why an efficient document management system is necessary, which allows us an easy management and storage of information, fast searches, and personalized consultations.*

**Key Terms** — *Application: performs a specific function, Cloud: servers accessed through the internet, Document: word processing file, Process: series of steps and decisions.*

## **INTRODUCTION**

On this digital world we live nowadays, we are still having issues to adapt on how things were done before moving them to a digital phase. We are on a constant digital transformation phase where we have found to better processes we did before. Documents are no doubt an integral part of any organization during which many documents are created and processed daily. The pandemic has forced people to work from home and to have the need to digitize documents. Things that we were not used to and eventually the daily work including its load has delayed, for example: in the registry office of a university, thousands of emails began to be received to help students with their different needs. This has

increased the number of emails received and can quickly lose focus on general and or a specific work task. That is why the power to simply and systematically store, archive and obtain documents is significant to form sure that each one employee is on the identical page and dealing on the foremost current information available. With the help of SignaDocs we can improve the way we handle our documents.

## **MOTIVATION**

From time to time, we are usually being requested to deliver signed documents, sometimes it could be the other way around where we are requesting documents. We often get lost on where we place documents on our desktops, or while we wait for requested documents we forget where we requested these documents from. Between emails, messaging applications and multiple devices we struggle to keep documents in one place. Due to the pandemic of Covid-19 a lot of agencies including universities, were in the need or rapid changes from standard manual processes to digital transformed processes. Document management is an important process that should be taken seriously and should be done right.

## **PROBLEM STATEMENT**

Due to the COVID-19 pandemic we have had to adapt to social distancing and lockdowns.[1] There is a problem in a lot of schools and universities where their processes were conducted manually and had to quickly change these operations to a digital process. Now to register in schools there is a paperwork process that needs to be taken care of. Not only to register a student, but the faculty also needs to take part on different processes between school year. For examples, requesting graduation,

requesting a reclassification, evaluation of equivalent courses taken in other institutions by the director and generated by the registry at the student's request, delivery of medical documents to meet admissions requirements and of course to request for medical records to a department. Maintaining track of documents can be very difficult when its being handled by email or messaging applications. There has been time when a faculty member requests a signature from a student or another faculty member and have no idea how long it would take to complete the task, this would require the requester to download or print to document, sign it, and resend the document. This could easily lose interest between multiple emails and other requests being handled this way, extra steps could be added if actions were done incorrect or communication was not clear. In other scenarios we might have is where a user needs to delegate a task due to any reason causing this member to be permanent or temporary out of party.

### CHALLENGES

During development of any project, facing various challenges is a common process. Creating modern software is a complex process involving not only writing the code but also engineering the solution, provisioning what modules should it has, whether some of them are required or not, will be successful or not and prioritize tasks considering the terms, the goals, and requirements. While engineering SignaDocs, many challenges were faced and addressed. Some of the challenges that came across where: choosing to go as a desktop application or going as a web application.[2] Choosing web over desktop gives us the advantage of being able to use the application on any device that has a web browsing capability it also gives us the liberty of using methodologies as “code once works everywhere”. One of the biggest challenges was cost [2]. Developments IDE, frameworks and database engines can be very expensive. To reduce costs, I have chosen to work with the following combination of technologies: Java for the back-end

piece, Angular for front-end, PostgreSQL [3] as a database engine, Spring boot for security and AWS for hosting. All technologies mentioned are open source meaning these could be use completely free, except for AWS cloud hosting but choosing cloud vs on-premises [4] still costs us less due to building services serverless, at this point it is more beneficial having variable costs and hosting on the cloud the building and maintaining an on-premises server.

### PROJECT STRUCTURE

Here you can see how we have structure the project and have listed the technologies used to develop Signadocs. The project core is being handled by Java [5] and all the back-end piece of it. PostgreSQL [4] will handle all database operations and the front-end piece is developed using Angular. Figure 1 shows how the project is structure and operates.

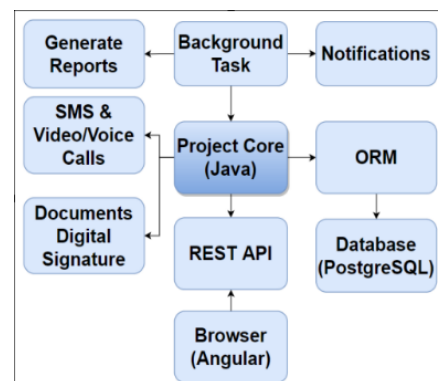


Figure 1  
Project Structure Diagram

### ROLES

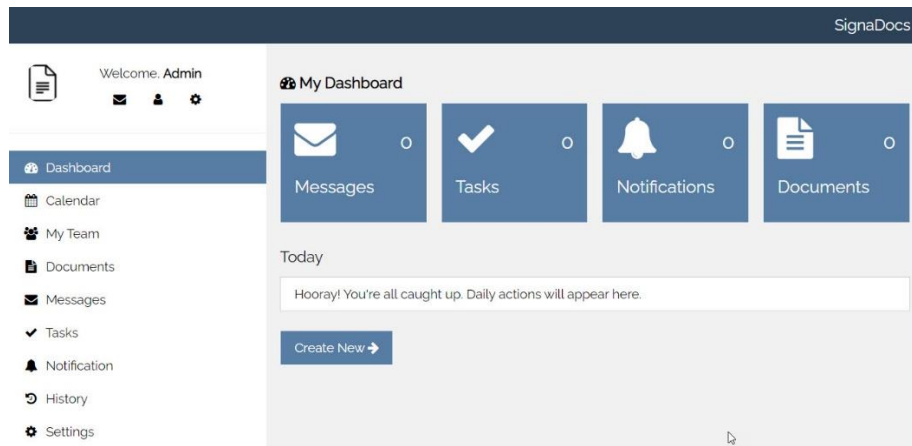
Signadocs will offer three main types of user roles this will help us identify the type of user that is being logged and help Signadocs know if you are using it as a personal account or organizational account. These roles will identify a user's privilege on the application. These roles are:

- User: The “User” role will have access to the application's standard features.
- Manager: The “Manager” role will permissions to manage and set a user role.

- Administrator: The “Administrator” role is the highest level inside the application and handles all securities and administrative capabilities inside the application.
- Dashboard
- Calendar
- My Team
- Documents
- Messages
- Tasks
- Notifications
- History
- Settings

## DASHBOARD

As soon as a successful sign-in, you will see the main list of navigation available on Signadocs. Below we can see the list of options available on the menu as well as the GUI in Figure 2.

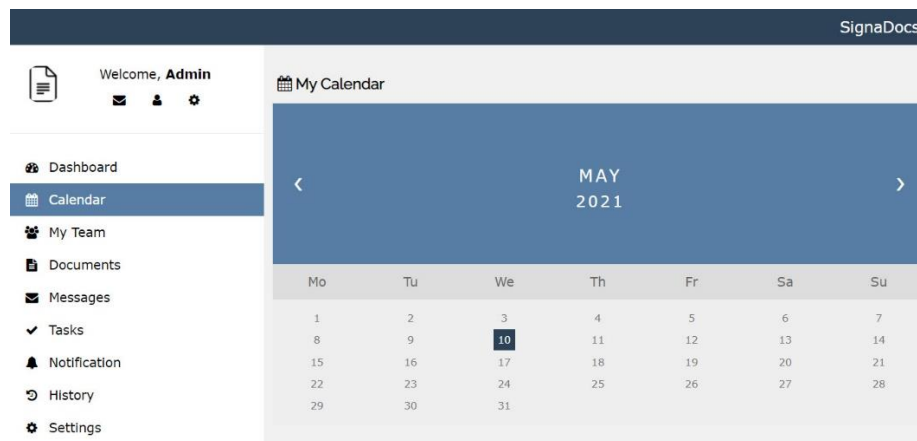


**Figure 2**  
**Dashboard Menu**

## CALENDAR

With the “Calendar” feature, you can see all events, team events, task deadlines and activities happening in the organization in a calendar view, shown in Figure 3. Events can be added directly to

the calendar, or they can be added to the My Team page. The Calendar feature provides visibility of open and busy schedules of who, what, where and when across the team, this is a great functionality as it prevents scheduling conflicts, and it as keeps all the details in one place at just a simple glaze at it.

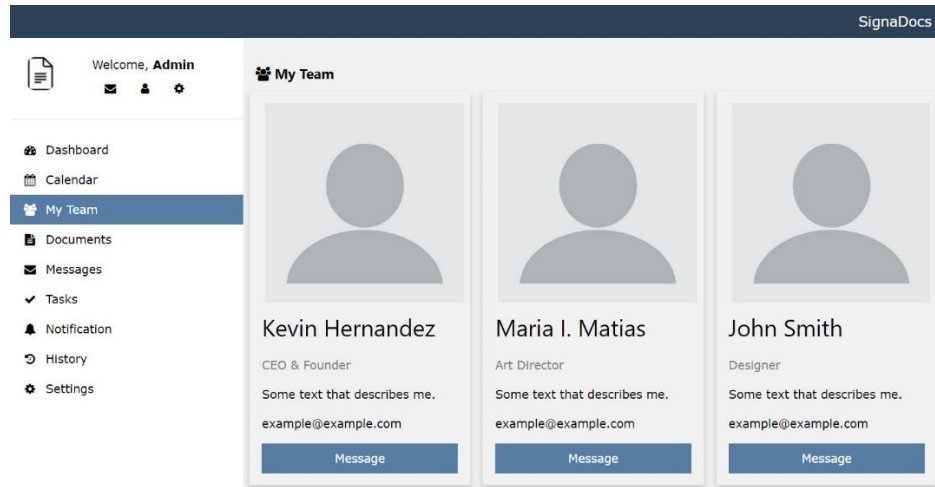


**Figure 3**  
**Calendar View**

## TEAMS

With the “My Team” feature, you will be able to separate logical divisions within the organization workflow, shown in Figure 4. Teams are often created to separate the various departments within an

organization or if there is a necessity to line up a team for the client. By pressing the corresponding option within the main menu, you may be redirected to the page and see a group of individuals and therefore the content they share together.

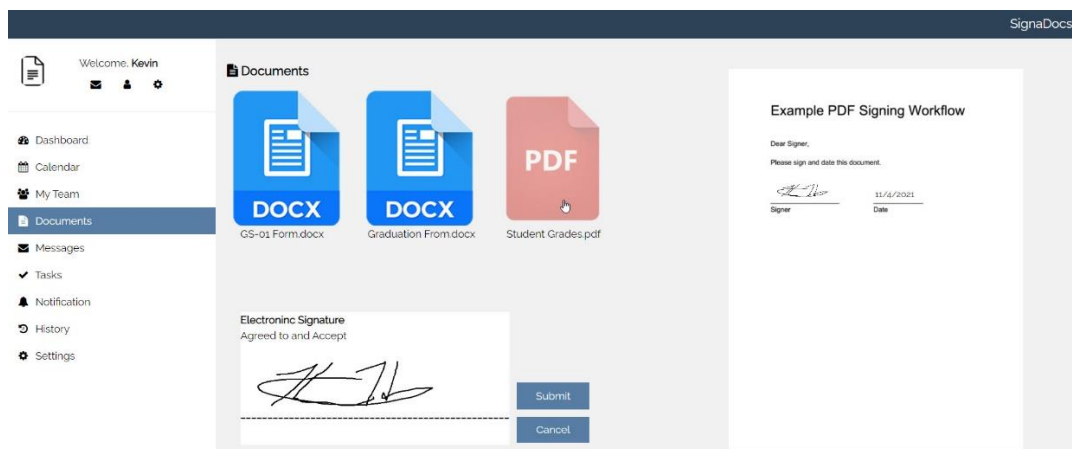


**Figure 4**  
**My Teams View**

## DOCUMENTS

By accessing the “Documents” feature from the menu, you can upload, download, or browse documents that have been stored on your account. These documents can be added by the users or they can be added by an organization leader or team member, documents have owners’ rights to prevent missuses case scenarios. Also, documents can be edited by multiple people at the identical time and

optionally shared. within the top the subsequent tabs are going to be displayed: Scan, Inbox, Draft, Archive, Sent, Trash, to review. Also, you will use the Search bar to search out a document you are searching for. This feature simplifies the method of editing and sharing documents with team members. Not only are you able to scan and upload files, but also, you will drag & drop files onto a page. An Example has been captured on Figure 5.



**Figure 5**  
**Documents View**

## MESSAGES

The application has a built-in messaging feature, where users can chat via instant messaging. This feature has also, the ability to launch video or audio conference calls. Adding this ability to the application simplifies requests and improves collaboration between team members. An example has been captured on Figure 6.

## TASKS

Being organized is key to success and being able to deliver on time gets us to better places in life. The main benefit of the “Tasks” feature is that you can see a collection of tasks within the user’s scope. Once a task has been assigned you will be notified. Tasks can be created easily from the “Tasks” section and progress will be displayed asynchronously. In Figure 7 we can see how the application keeps tasks organized.

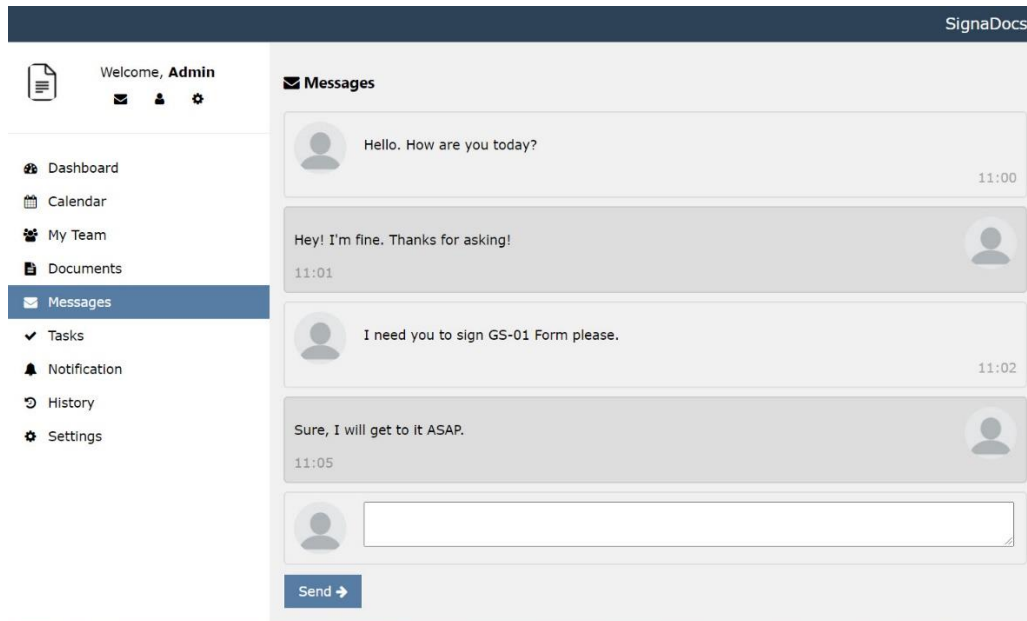


Figure 6  
Messages View

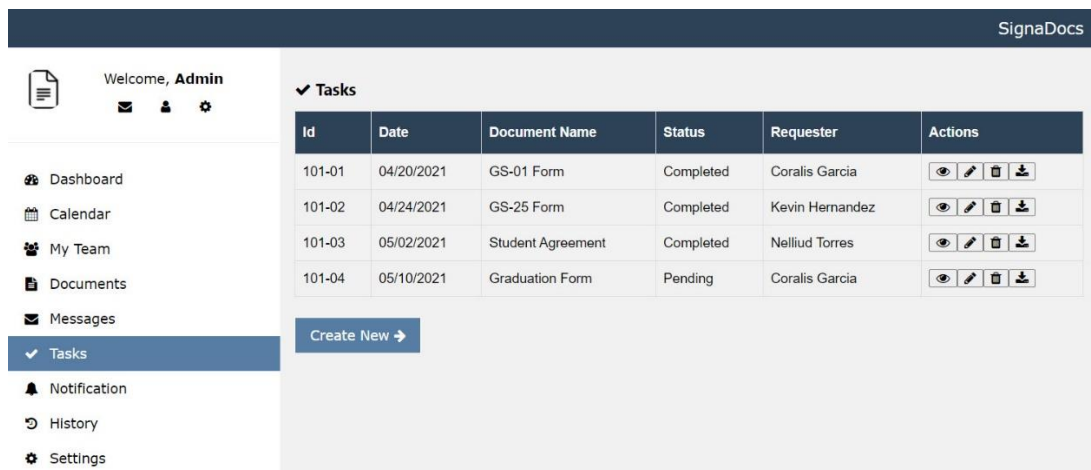


Figure 7  
Tasks View

## WHY SIGNADOC IS BETTER?

With Signadocs, all your documents will be stored securely in digital format all together on a secure cloud environment for you to access anywhere anytime. This digital locker will eliminate the necessity to keep paper documents and reduce the case for these documents to get lost or unsecured access. Why do you need a Signadocs for you and or your organization?

- You usually misplace or cannot find your files.
- Having unorganized data assets.
- You need to securely access your files anywhere.
- You maintain a physical copy of documents additionally to your electronics documents.
- You have the need to enhance file sharing and collaborating on documents.
- You need to sign documents frequently.
- You need to request signatures frequently.

## ADDITIONAL FEATURES

Signadocs provides many features and functionalities that helps us grow every day. Some additional features that Signadocs offers are:

- History logs files from where a process starts to where it finishes.
- A variety customizable settings pane for user's preferred settings such as dark mode, font size and many more.
- Be able to search withing a document through the application.
- In application documents viewer for faster in-depth views.
- The ability to edit files and create new versions of the same file on-demand.
- The ability to create documents within the application or upload them though the application.
- The versioning feature which allows the user to manage changes over time, providing visibility into how the current version is different from the previous versions.

- You can share or collaborate documents with other users.
- Keep documents secure and be able to automate document approvals.
- Receive notifications alerts to inform the user that a task has been assign to him.
- Allows a user to digitally sign documents without the need to print, manually sign and re-upload the document.

## BENEFITS

Having an all to go place benefits us all on our everyday digital lifestyle. Signadocs benefits us by maxing our productivity on this lifestyle.

No longer having to worry where our documents are or having the worry of knowing if someone received your paperwork could cause frustration and negative vibes. Another great benefit from having Signadocs as your document management system is that even if the receiver does not choose to create an account you can still benefit from Signadocs automated workflows and so is the receiver as a guest. Below we can see a list of additional benefits for using Signadocs. Provides the ability to collaborate and communicate between team members all in a same application and 100% remote.

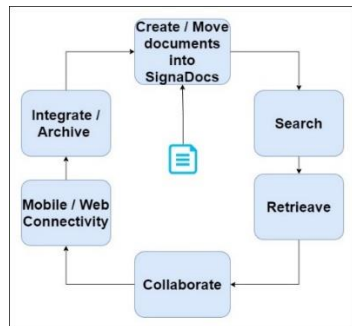
- Advance search feature to find everything you are looking inside your documents.
- In app messaging feature for faster responses and faster documents sharing.
- Secure access to electronic documents using role-based access control as this reduces the chance of an information security breach.
- Allowing the creation and be able of storing documents in a digital format to make them accessible anytime, and anywhere.
- Keeping track of documents and making sure that each one includes updated information.
- Easy one click, digital signature.

These are not all benefits of Signadocs, but they help you to speed up and simplify the process

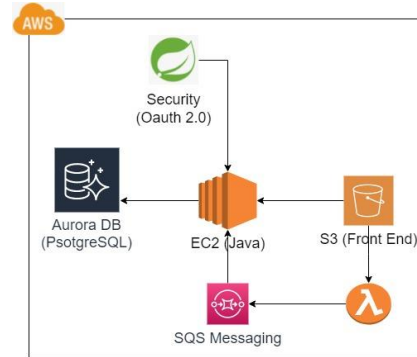
managing stored documents as well as improve efficiency and productivity on your daily needs.

## RESULTS

As a result for everything discuss on this paper, without minimizing the importance of systems for managing documents in traditional formats, especially those made for paper documents, it becomes clear that one of the fields of science of information and library science that technologies have most directly influenced in recent times is in the management of electronic documents.[6] Thus, the appearance and massification of electronic documents through technologies has allowed: reducing the physical file space, maintaining a single set of information that contains everything that was or is important for the organization, making it possible to quickly locate it by a great diversity of criteria, facilitate the parallel processing of information contained in documents, instead of the user having to wait for someone else to finish with them to consult them, preserve the original documents, eliminating the risks that deterioration of the documents brings. for its use, integrate documentation in work processes, control versions, eliminate uncontrolled copies, distinguish paper in circulation, control access to the file by security levels, eliminate loss of documentation, improve, in general, handling of information that can be decisive for the development of the organization, relate in training by groups and user types and avoid redundancy in documentation. Figure 8 represents how the application’s process flow. Figure 9 represents the application’s architectural diagram.



**Figure 8**  
Process Flow Diagram



**Figure 9**  
Application Architecture Design

## CONCLUSION

In this project, an application for document management was developed. It is a platform where we can keep track of documents on an efficient digital way. In this application aspects such as security, flexibility, performance, and scalability are addressed to make the best user experience.

## FUTURE WORK

This project has a huge future scope due to all possible improvements, features and modifications which can be implemented. Currently only a few major functions were implemented, Current user interface is made responsive to support most major web browsers and devices, but it can further be improved when implementing new features. Moreover, for future works, such important functions like supporting additional document extensions and additional automated workflow features.

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