GROUP 5

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# Project definition

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## o Project background

In the digital era, access to storage solutions has become essential for both individuals and businesses. Traditionally, files stored locally are only accessible on the device they are saved on, or through the cumbersome use of external hard drives. Additionally, purchasing storage solutions often entails paying a significant amount upfront for space that may remain underutilized. To address these issues, cloud storage services like OneDrive and Dropbox have gained popularity, offering scalable storage that can be accessed anywhere with an Internet connection. This project aims to build a similar cloud-based storage solution.

## o Problem definition Chris

For this case study, we decided to tackle the following problems:

1. Having files stored locally only being accessible by the device it is stored on or having to carry around an external hard drive to access these files.
2. The fact that to acquire more storage space one needs to pay a big price upfront even if only a small amount of that extra space is going to be used.
3. Having to store sensitive files on the cloud if you want the convenience it offers.

## The disappearance of privacy and our remedy.

The main problem with cloud storage services for most people is the fact that you have to trust that they will respect your privacy and keep your data safe at all moments. You have to trust they will not access your files (for example with AI tools) to make a profit by making more fined-tuned advertisements or that they will not use the vast amounts of data being stored in their systems to train the AI models the same companies are developing and competing against each other to make the best model. These companies might promise not to do these things now, but what happens when their management changes? Or if the current management simply changes its mind? Or if the company goes under? Every time you sign up for these services, you have to agree to their terms of service, which they also tell you in the fine lines they can change at any moment. When this happens, all you see is a notification saying “Our terms of service have changed” and they will ask you to tick a box accepting them if you want to keep using their service.

We, as a modern and digital society, deal with these issues, leading to lack of privacy, potentially hundreds of thousands of euros spent yearly on storage space which ends up not being used, and a lot of wasted space being used for copies of files instead of using only one file which is accessible to all your devices.

## o Project goal Chris

The goals of this project are to develop a product similar to Dropbox, allowing users to store files in the cloud (AWS S3 buckets) and on premises (Fontys’ Infralab). Users should be able to interact with our application through a web interface and different tools such as Ansible and Terraform should be used to deploy our infrastructure. Ideally, our application should be publicly accessible and resources should be hosted using Docker containers.

## o Expected result Chris

The expected result of our project is a fully functional cloud-storage application where users can have accounts, deploy cloud infrastructure using our website and access their cloud-stored files and their locally hosted files using that website. Files will be scanned for malware before upload. Ideally our application and the infrastructure it requires will be fully deployable using tools such as Terraform and Ansible.

## o Way of working/Nicolas

The team has decided that we will work before or after the lectures on the days where we have to go to university. This is because we believe that it is more convenient for everyone to take advantage of the free days by using them to work on other projects, or to dedicate them to work on their job. This does not mean that we will dedicate less time to the Case Study Project, in fact it’s the opposite because we will fully use the days that we are at the university to their maximum capacity.

We also have a group chat in a messenger app and a group chat on microsoft teams. The first one is for our members to communicate our progress,questions and unforeseen events and the second one will be for uploading the files and tasks that we are completing so that everyone has access to them. On the teams we will host video calls in replacement of physical meetings if necessary.

Adjusting to the feedback that we received from our coach, we decided to add a trello board on which we can see what tasks are assigned to each member of the group and on what date he is supposed to finish it. This will make sure that all members are on track with their due tasks and will show the teacher how we distributed our work through the semester.

We are also having weekly meetings with our coach in which we discuss what advances have been made on the project and he gives us his opinion on said advances. We then take notes of these changes that he is suggesting and we then perform them.

## o Scope/Nicolas

The scope of this project will consist of adhering to the list of requirements that we were assigned on our task. As mentioned earlier, we selected example 6 which consists of creating a Dropbox-like File Storage and Sharing Service. Our scope will include file storage & Management, Data Synchronization, Versioning and Backup, Hybrid Cloud Implementation, User Authentication & Permissions, File Sharing and Collaboration, Security and Compliance, Scalability and Cost Optimization and API for External Integrations.

# Project structure

## o Development team

On the development team we will be working to reflect on how we are handling the tasks that we are required to do. We will ask questions such as: are we managing our time well? Are we scheduling our tasks correctly? Could we be more efficient? Is the work being equally distributed? Are we getting enough feedback from our coach?

The answer to these questions will provide us with valuable insights that will let us reflect deeply on our behavior, we will see what possible solutions we have to those problems and we will plan a series of actions and tasks that will help us overcome that issue.

## o Tutor

# Risk assessment

A comprehensive risk assessment will be conducted to identify potential challenges that may arise during the project. This includes technical risks such as issues with cloud infrastructure deployment, data breaches, or scalability problems, as well as project management risks like time mismanagement or team miscommunication. Risk mitigation strategies will be outlined to handle each identified risk effectively.

# Deliverables

The key deliverables of this project will include:

1. A fully functioning cloud storage solution.
2. Deployment scripts (Terraform, Ansible) for infrastructure automation.
3. A web-based interface for user interaction.
4. Give users multiple options to save files.
5. File scanner for corrupted or malicious files.
6. Secure way for users to access files on-premises.
7. Documentation for users and administrators.
8. A risk assessment and mitigation report.
9. A final project report detailing the development process and final product.

# Planning

Project will be divided into sprints. We will be using Trello.