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.

These are issues many people deal with, leading to 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.

These issues are solved by products such as OneDrive and Dropbox. These are services in which you pay a certain amount of money for cloud-based storage space, meaning you can host files in the cloud without needing a local copy, while being able to access these files from any device as long as you have an Internet connection. You can also determine how much space you need and only pay for that and increase- or decrease it as you see fit, instead of paying for x amount of space upfront which you then cannot change.

## 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 different 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, share files with other users and work on documents together. Possibly, users will be able to have chats with each other and files will be scanned for malware before upload and sharing. 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.

## 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. Documentation for users and administrators.
5. A risk assessment and mitigation report.
6. A final project report detailing the development process and final product.

# Planning

Project will be divided into sprints.