

## **Storage Connector – Project Description**

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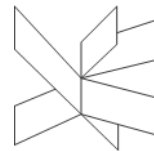
**[Name of supervisor(s)]**

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**Software Technology Engineering**

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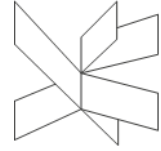
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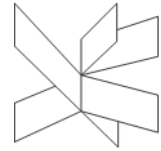
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## **1. Problem Domain**

Nowadays people and companies rely on multiple cloud storage solutions such as Google Drive, OneDrive and SharePoint to store and manage their files for having more secure data, less latency, cost efficiency and accessibility from everywhere with an internet connection (Barry, P.). However managing data across multiple platforms can be challenging because of inconsistent interfaces and difficulty in retrieving relevant files efficiently (Gartner). Because of that users often need to switch between multiple services, leading to loss of productivity.

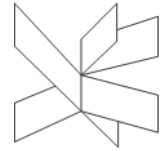
The project aims to address the issue of separated cloud storages by developing a web application that merges and organizes files from various cloud services into a single interface. The application will allow users to connect their cloud services and view all stored files in a single dashboard, streamlining improving access and workflow efficiency.



## **2. Problem statement**

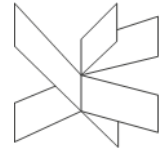
How can a web application be designed and implemented to provide users with a single interface for managing files, stored across multiple cloud storage services?

- What are the key challenges for integrating multiple cloud storage services?
- How can OAuth 2.0 authentication be securely implemented across Google Drive, OneDrive and SharePoint for unified file access?
- What UI/UX design principles can improve the user experience for cloud storage collection?
- How can file search and categorization be improved across multiple cloud platforms?



### **3. Delimitation**

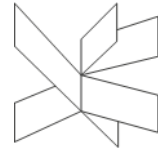
This project will focus only on integrating three major cloud storage providers: Google Drive, OneDrive, and SharePoint. Other cloud services e.g. Dropbox and iCloud will not be included in this phase. The application will provide read-only access to files initially. Editing and file-sharing features will be considered for future development. Security measures will focus on OAuth authentication, but advanced security protocols like end-to-end encryption will not be covered in this project.



## 4. Choice of methods

The project will follow the Scrum methodology with the following approaches:

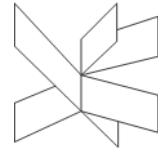
- **API Integration:** Google Drive, One Drive and Share Point will be integrated using their official APIs: Google Drive API and Microsoft Graph API. All services support secure standardized OAuth 2.0 authentication with support for read-only access.
- **Analysis and Design:** Identify user requirements and design an intuitive user interface.
- **Development & Testing:** Utilize React for frontend development and Node.js for backend API integrations.
- **Security Implementation:** Implement OAuth 2.0 Authorization Core Flow for secure authentication and token management.
- **Usability Testing:** Conduct user testing to refine UI/UX based on feedback.



## 5. Time schedule

27.5 hours per week are expected to be invested in the creation of this project. This means a total of approximately 300 hours. The time schedule will be:

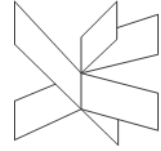
- Week 1-2: Prepare integration setup for Google Drive, OneDrive and SharePoint APIs.
- Week 3: Design UI mock-ups and finalize architecture.
- Week 4-5: Develop backend API integrations.
- Week 6-7: Implement frontend interface and authentication.
- Week 8: Testing, debugging, and final revisions.
- Week 9-10: Documentation and project submission.



## 6. Risk assessment

Risks	Likelihood	Severity	Impact Score	Mitigation Strategy
API access limitations	2	4	8	Use alternative APIs or adjust integration scope
OAuth authentication issues	2	3	6	Research OAuth 2.0 best practices and test thoroughly
Delayed cloud provider responses	3	3	9	Allow buffer time in development schedule
UI/UX usability challenges	2	4	8	Conduct early usability tests and iterate based on feedback





## 7. References

- Barry, P. (24.12.2023). Retrieved March 21 from Adivi [Why is Cloud Storage Important for Businesses?](#)
- Gartner. Retrieved March 21 from Gartner [Multicloud Strategy](#)