**Technical Memo 2: Multiple IAM Providers Support**

**Issue:** Integrating the library management system with multiple IAM providers.

**Problem**

The library management system shall be able to support multiple IAM providers such as Google, Facebook, and Azure due to the increased demand for flexibility and security regarding user authentication and authorization. Solution Overview The implementation will provide multiple IAM providers, which will enable the admin to configure or switch between the providers at runtime.

**Factors**

* Security: Each IAM provider has its different security protocols, and the system should reply based on those different standards so that access is granted in a secure manner.
* User Experience: Having multiple IAM providers means a user can authenticate through a service of their own choice, hence making things easier for them.
* Flexibility: A modular authentication framework makes it much easier to integrate new IAM providers that become available.

**Solution**

Here, an Adapter design pattern is used to provide a pluggable IAM module. That is, the system can support multiple IAM providers connections without the need for core-logic changes, possibly through the configuration file by specifying at runtime which IAM provider to use.

**Motivation**

Doing this provides flexibility and security while making the system able to adapt to changing authentication requirements.

**Alternatives**

To include only one IAM provider limits the options users can use. A custom implementation of IAM will most likely provide worse security compared to established IAM providers along with more resource usage.

**Issues Pending**

* Establish a standardized process to handle user permissions between different IAM providers. Test compatibility with each IAM provider for secure integration.