LANGUAGED-BASED TECHNOLOGY FOR SECURITY
Homework Assignment 2

Due: May 4 2021

In this homework, we will extend the interpreter of the simple functional language into an interpreter of a functional language which includes a dynamic mechanism for enforcing local security policies along the lines of History-Dependent Access Control.

Learning objectives

Goals of the homework are

- to appreciate - if it was nott clear from the lectures – the main ideas of history dependent access control;
- to understand the capabilities and the limitations of history dependent access control;
- to understand the trade-offs in the design and implementation of history dependent access control in an effective way.

The assignment

In this homework you will build an interpreter a simple functional language equipped with local security policies. Local security policies are characterized by a scope and are defined over a set of security relevant actions. The interpreter checks the policy within its scope and continues execution if the policy is satisfied; otherwise, execution fails.