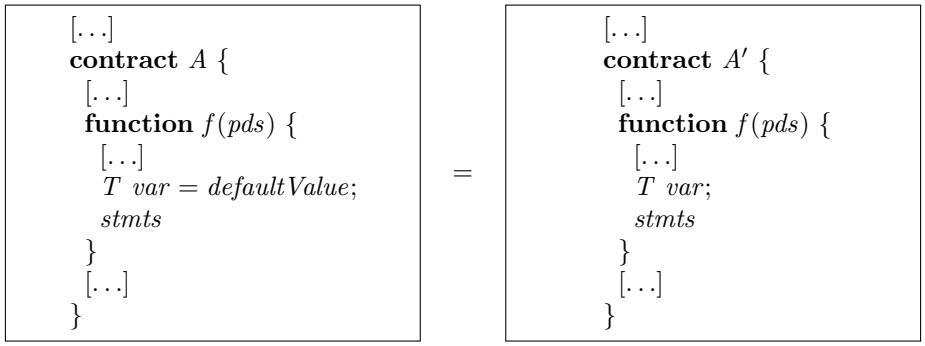
Rule 0.9 ⟨*Avoid Explicit Zero Initialization*⟩



where

var is a variable of type T being declared and initialized;

T is the type of the variable (e.g., **uint**, **bool**, **address**, etc.);

defaultValue is the default zero value for type T (e.g., 0 for **uint**, *false* for **bool**, **address**(0) for **address**);

stmts represents the sequence of statements following the declaration;

pds are the parameter declarations of function f.

provided

The explicit initialization value is exactly the default zero value for type T;

Solidity automatically initializes variables to their default zero values;

The variable *var* can be either a local variable or a state variable;

Removing the explicit initialization does not affect program semantics.

Invariant:

Let s_i and s_i' be the initial state of A and A', respectively.

Let s_f and s_f' be the state reached by A and A', respectively, after $A.f()$ and $A'.f()$ are executed from s_i and s_i', respectively.

Then, the coupling invariant is

$$\forall\, s_i, s_i' \;.\; (s_i = s_i') \rightarrow (s_f = s_f')$$