# ACCOUNTING INVARIANT

**Strong:** Prove that bank account is always non-negative

*implies*

**Sufficient:** Prove that savings can cover every expensive operation

(typically, quantify bank credits as a function of the data structure)

**examples**

- multipop: credits in bank = #elements in stack

- binary counter: credits in bank = #1's in counter

- dynamic arrays: credits in bank when we double = #elements in array
  $$= 2 \cdot (\text{\# new elements since last expansion})$$