Elevator specified in Z (variables, Components)

- Z: formal spec. lang. based on concepts of 1st-order logic
  - Typed lang. (each variable is assigned a type)
  - Z-schemas used to defined components / systems / events

- SWITCH := on | off — new enumerated type
  MOVE := up | dn — new enumerated type
  FLOORS : $\mathbb{N}_1$ — $\mathbb{N}_1$: Set of positive nos.

  IntButtons — Z-Schema
  IntReq : 1 .. FLOORS → SWITCH — State-variable for IntButtons

  ExtButtons
  ExtReq : 1 .. FLOORS → $\mathbb{P}$ MOVE — $\mathbb{P}$: Power set
  dn ∉ ExtReq(1) ∧ up ∉ ExtReq(FLOORS) — Invariants for ExtButtons

  Scheduler
  NextFloorToServe : 0 .. F — 0 = no next floor to serve

  Elevetor
  CurFloor : 1 .. FLOORS
  CurDir : MOVE

- 1st 3 declarations are for globally used variables
- Next 4 delarations are Z-schemas for components (Each component has it's own state-variables that are required to satisfy certain "invariants")