

# FSMD – Finite State Machine with Datapath

## FSM

- Next State Logic
- State Register
- Output Logic

## Data Path

- Functional Units [FU]
  - Perform all mathematical computation
    - $x\_add \leq x + 1;$
    - $x\_sub \leq x - 1;$
- Routing
  - if add then
    - $x\_next \leq x\_add;$
  - else
    - $x\_next \leq x\_sub;$
  - end if
- Data Register
  - Store the intermediate computational results
  - $x \leq x\_next;$

