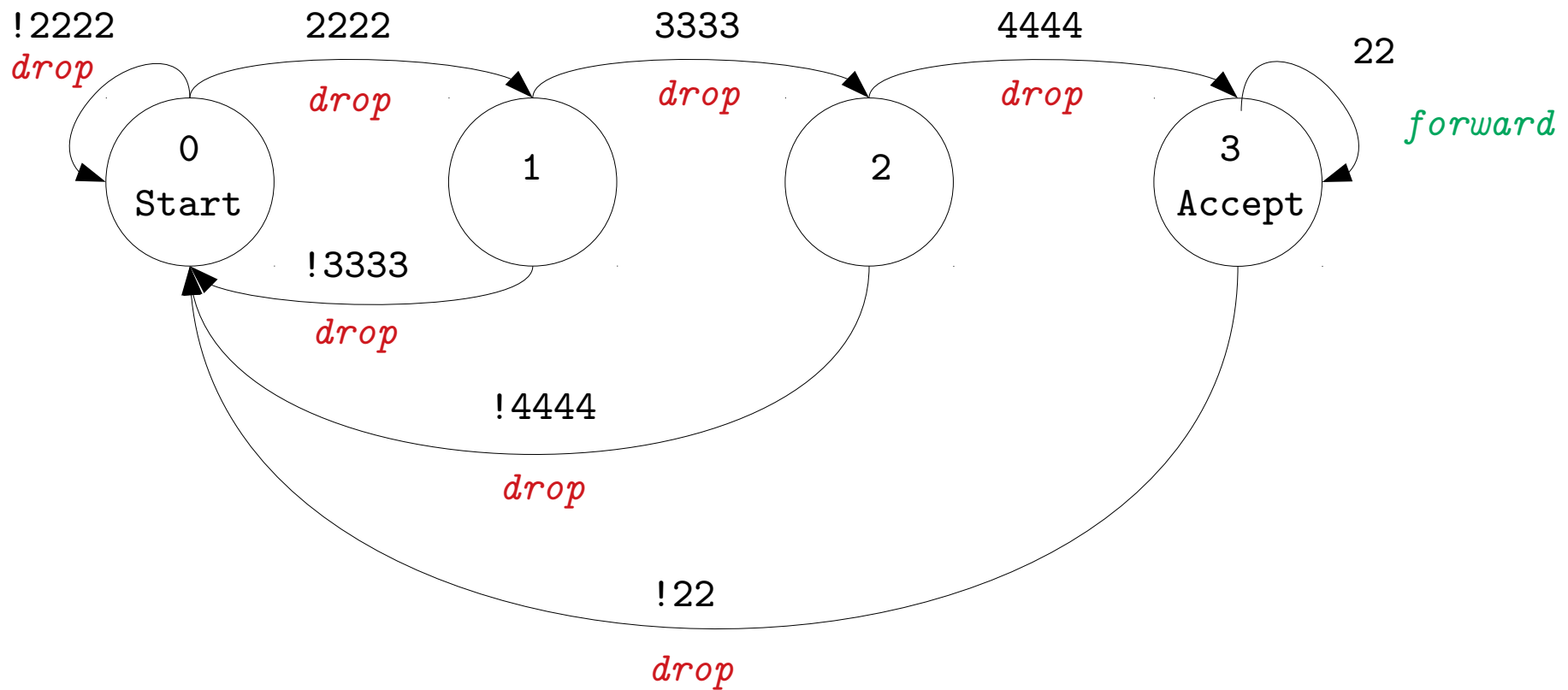


Port Knock Firewall in P4

PA of Protocols for Data Networks - PRD'19, Prof. Fernando Ramos & Dr. Salvatore Signorello



PortKnocking State Machine

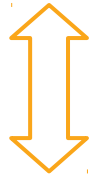


PortKnocking State Machine



Control Plane Logic

=> Table entries for your P4 program



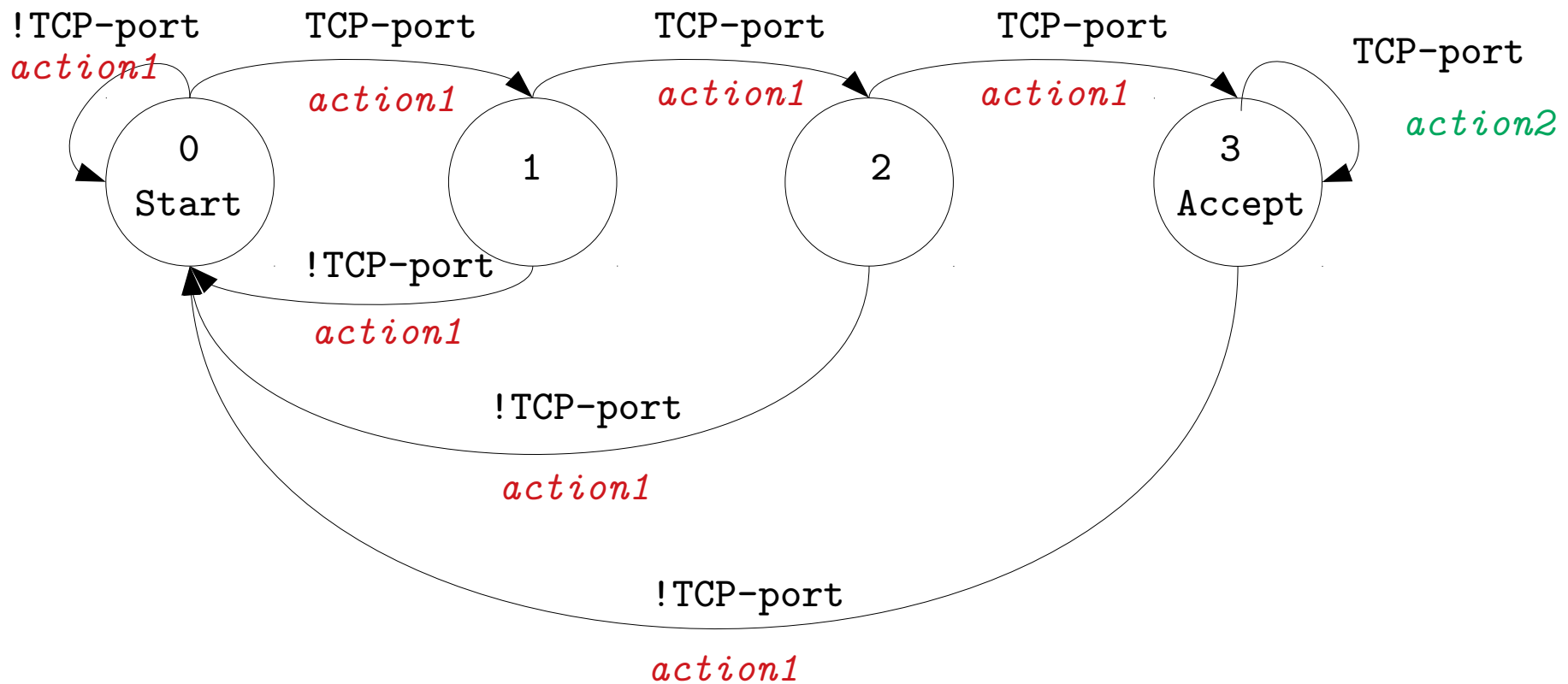
API

Data Plane Logic

=> Your P4 program

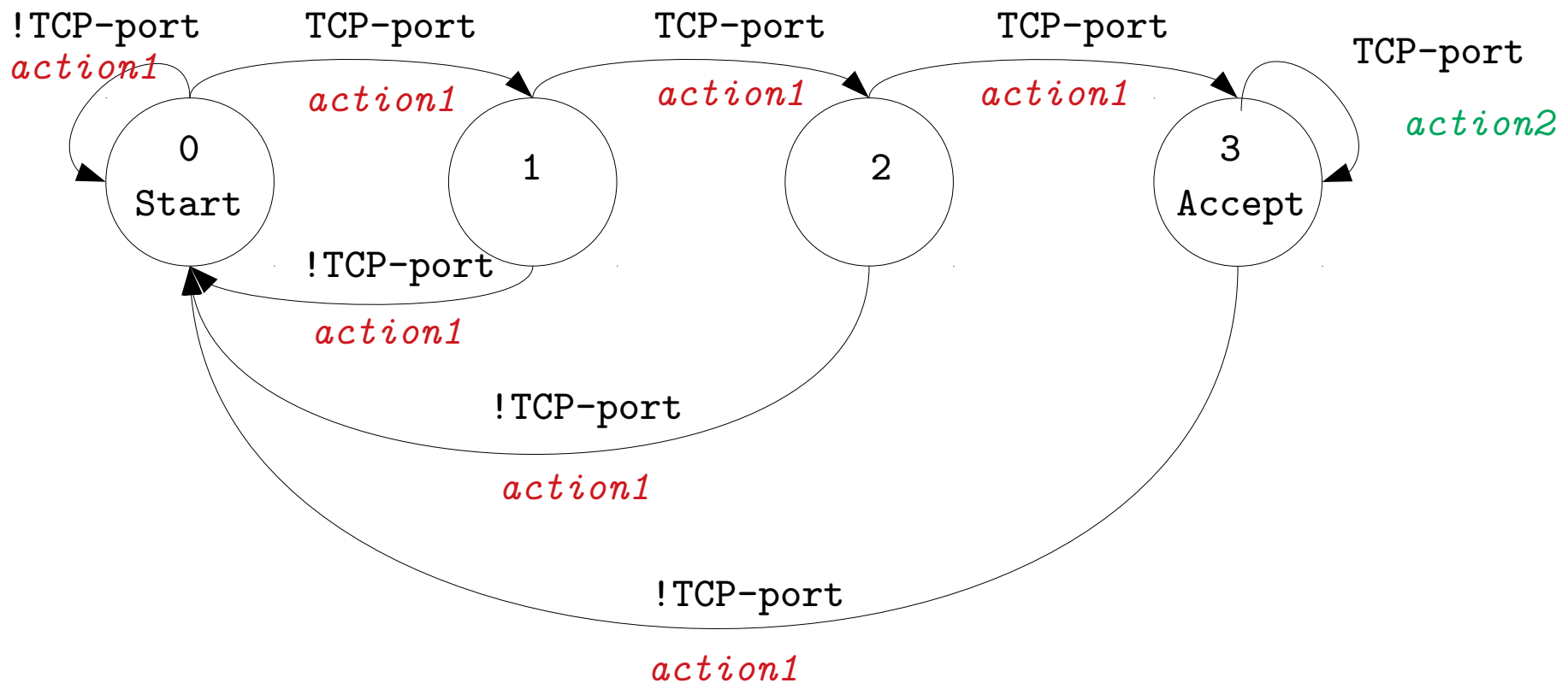


PortKnocking State Machine



At the end, my state machine is defined by the TCP-port field, by the two Actions, forward and drop, and by the status.

PortKnocking State Machine

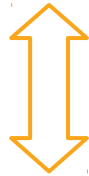


```
Table state_machine {  
    key = { status, TCP-port }  
    actions = { forward, drop }  
}
```

PortKnocking State Machine



Control Plane Logic



API

Data Plane Logic

=> Table entries to define state transitions and invoke the actions

```
Table state_machine {  
    key = { status, TCP-port }  
    actions = { forward, drop }  
}
```

Table entries example:

table_add state_machine update_drop 0 2222 => 1