1 One Shot

Question | Solution | Video | Discussion

Quite often your logic needs to react to a change on some control signal. That can be an external input, s sorts of scenarios exist that call for a signal generated by one part of a system to be detected by another

Implement a one-shot circuit which detects a pos-edge (from 0-1) change on the input. All the flops (if ar

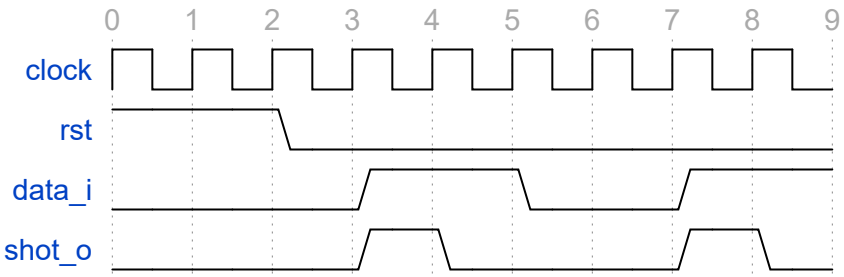
Interface Definition

```
data_i : Input signal to the circuit
shot_o : Output signal which detects a positive edge on the input
```

##Interface Requirements

- The output should go high for one cycle only when pos-edge is detected on the input
- The module should produce the output on every cycle

Sample Simulation



Explanation

- **Cycle T1** : Reset is asserted
- **Cycle T2** : Reset is asserted
- **Cycle T3** : Reset is de-asserted. `data_i` is 0x0
- **Cycle T4** : `data_i` is 0x1 and `shot_o` is 0x1 as a positive edge is detected
- **Cycle T5** : `data_i` is 0x1. `shot_o` is 0x0 as it needs to be high for a cycle
- **Cycle T6** : `data_i` is 0x0. `shot_o` is 0x0
- **Cycle T7** : `data_i` is 0x0. `shot_o` is 0x0
- **Cycle T8** : `data_i` is 0x1. `shot_o` is 0x1
- **Cycle T9** : `data_i` is 0x1. `shot_o` is 0x0