## Computer Science

Set-Reset Flip-Flop Representations

## Circuit



## Truth Table

Row for every input combination for each initial state Optionally show state transitions with arrows

| State (X) | $\mathbf{S}$ | $\mathbf{R}$ | New State (X) |
| :---: | :---: | :---: | :---: |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |$\leftarrow$

## State Diagram

States represented as circles (nodes)
Every input combination for each state shows resulting state


## Summary

Describes what happens to state for each input combination

| $\mathbf{S}$ | $\mathbf{R}$ | $\mathbf{X}$ |
| :---: | :---: | :---: |
| 0 | 0 | Unchanged |
| 0 | 1 | Sets to 0 |
| 1 | 0 | Sets to 1 |
| 1 | 1 | Sets to 1 |

