# Multiplxer Design and simulation

B. S. Abdur Rahman Crescent Institute Of Science And Technology

Mohamed Irfan M.Z

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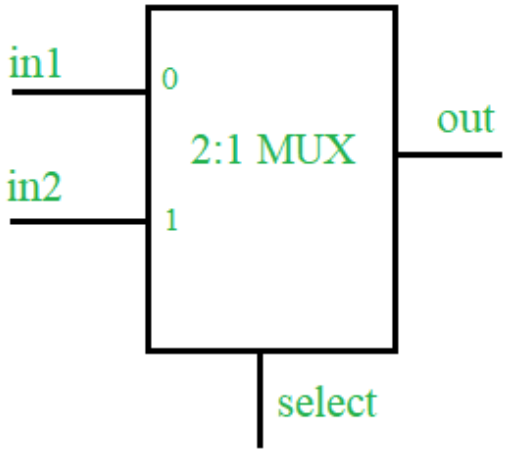
***Abstract*—At the start a brief and concise introduction to multiplexer specifically a simplest 2_1 multiplexer is provided with the explanation of the output they will show. A multiplexer can also be referred as a mux in short form and 2_1 mux is the simpler of its kind**

### 1.Reference circuit Details:

A multiplexer is a combinational type of digital circuits that are used to transfer one of the available input lines to the single output and, which input has to be transferred to the output it will be decided by the state(logic 0 or logic 1) of the select line signal. 2:1 Multiplexer is having two inputs, one select line (to select one of the two input) and a single output.




**Truth Table :**

| select | out |
|---|---|
| 0 | in1 |
| 1 | in2 |

### 2. Implemented circuit:

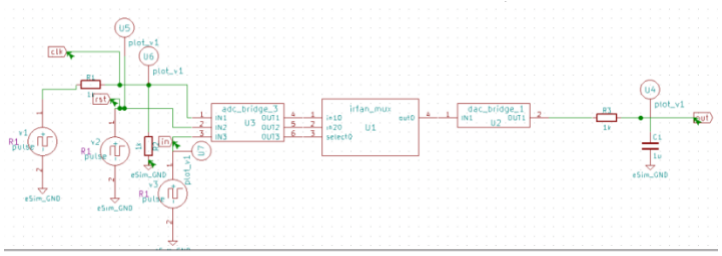


Figure 1: Implemented Circuit Diagram

### 3. Implemented Waveforms:

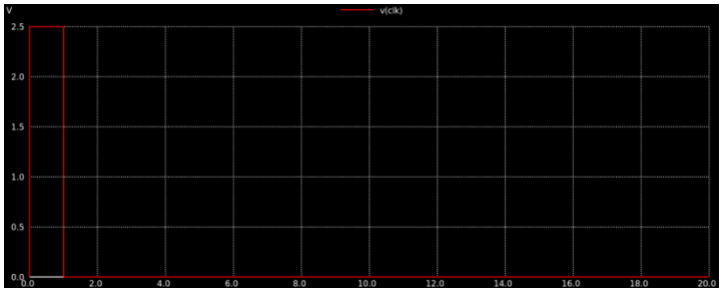



Figure 1: Implemented Waveform

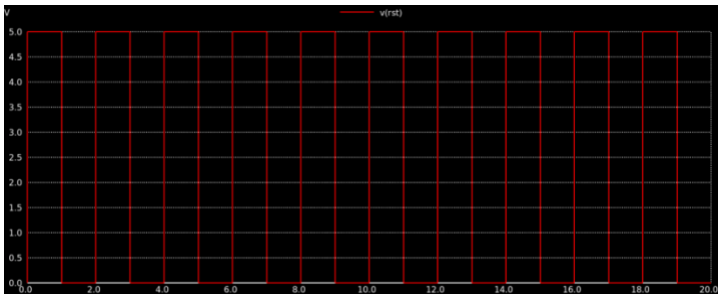



Figure 2: Implemented Waveform

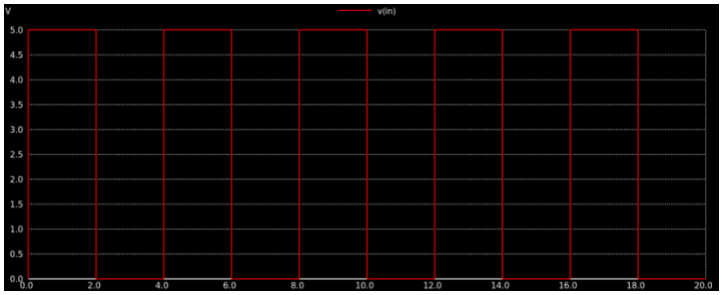



Figure 3: Implemented Waveform

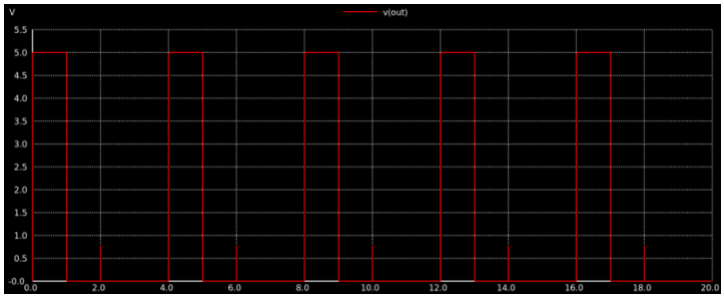



Figure 4: Implemented Waveform

## Reference:

https://www.geeksforgeeks.org/multiplexer-design-using-verilog-hdl/

https://microcontrollerslab.com/multiplexer-design-simulation-pspice/