

Assignment #08

Using Parameter

- Parameterized Counter: Create a counter module with a parameterized width. Allow the counter to reset and increment based on the clock signal.
- Parameterized Multiplexer: Design a multiplexer module where the number of inputs and the width of each input are parameterized.
- Parameterized Shift Register: Implement a shift register with a parameterized number of bits. The module should allow shifting left or right.
- Parameterized Decoder: Design a decoder module with a parameterized number of input address lines, which generates 2^n outputs.
- Parameterized Adder: Implement an adder module that supports addition of two numbers with a parameterized bit-width.
- Parameterized Comparator: Build a comparator module that compares two numbers with a parameterized bit-width and outputs whether one is greater, less, or equal to the other.
- Parameterized Parity Generator: Develop a parity generator module that calculates even or odd parity for an input vector of parameterized width.