

XOR Function

A	B	F
0	0	
0	1	
1	0	
1	1	

XOR Function

A	B	C	F
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	

XOR Function

Control	A	F
0	0	
0	1	
1	0	
1	1	

Nexys4 Board

Hardware Design before FPGA

Hardware Design with FPGA

Digital Circuits

Hardware Description Language

Verilog

Verilog

Verilog

Verilog

```
module module_name(  
    input variable_name,  
    input variable_name,  
    output variable_name,  
    output variable_name,  
);
```

```
endmodule
```

Verilog

Verilog

Bitwise Operators:

- ~
- &
- |
- ^

Verilog

Verilog

	X = A B F = X D	F = X D X = A B	X <= A B F <= X D	assign X = A B assign F = X D
A = 0 B = 0 D = 0				
A = 1				
B = 1				
B = 0				
A = 0				