DAY #4

30 DAYS OF VERILOG

AIM – TO IMPLEMENT FULL SUBTRACTOR

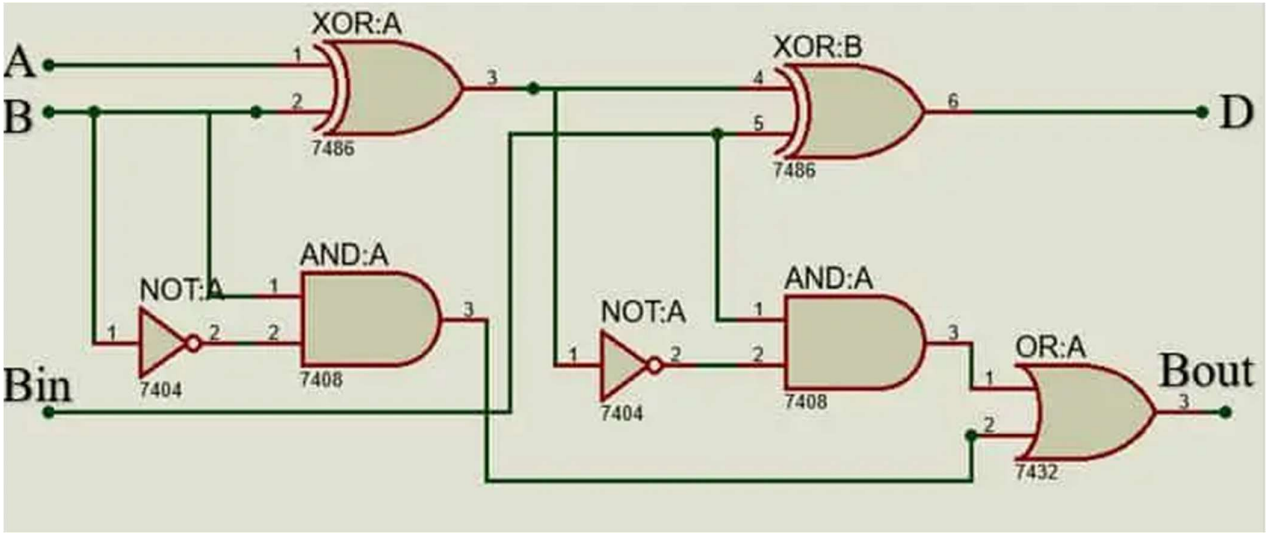
A **full subtractor** is a digital logic circuit that performs the subtraction of two binary numbers. It has three inputs: **A**, **B**, and **Borrow In (Bin)**, and two outputs: **Difference (D)** and **Borrow Out (Bout)**. Let's break down how it works:

1. **Inputs**:
   - **A**: Minuend bit
   - **B**: Subtrahend bit
   - **Bin**: Borrow-in bit from the previous stage
2. **Outputs**:
   - **Diff**: Difference bit
   - **Bout**: Borrow-out bit for the next stage

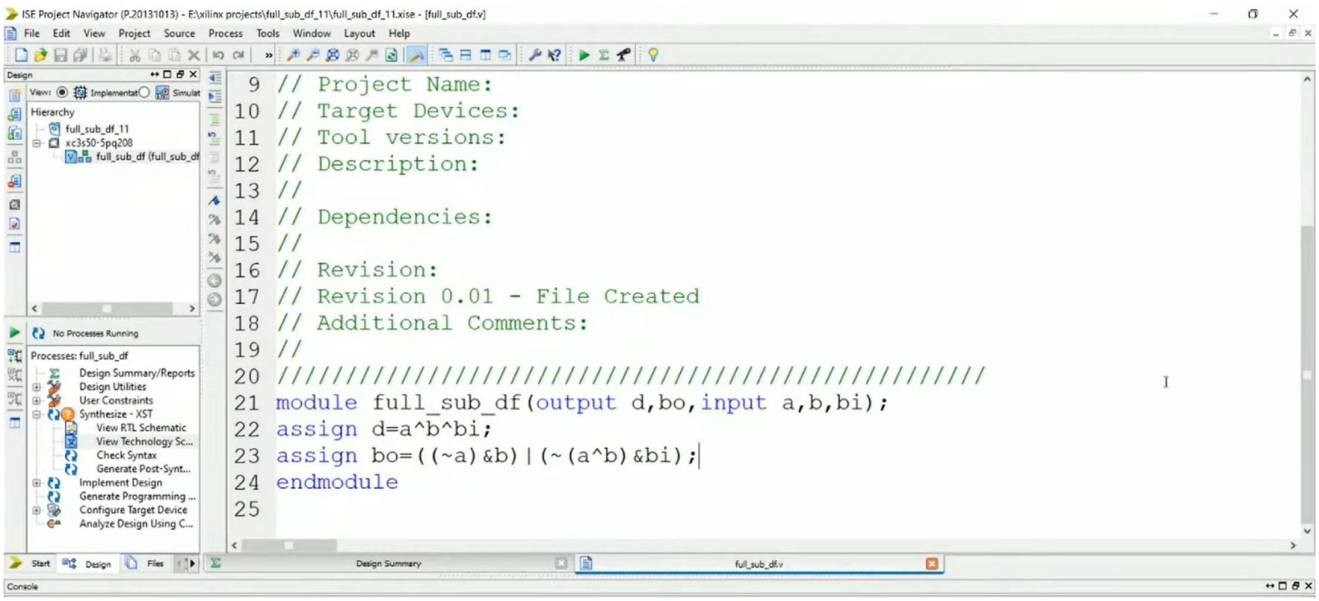
Truth Table –

Input			Output	
A	B	C	Difference	Borrow
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	1
1	0	0	1	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1

Schematic –



Verilog Code–



Waveform –