

# FPGA with {System}Verilog

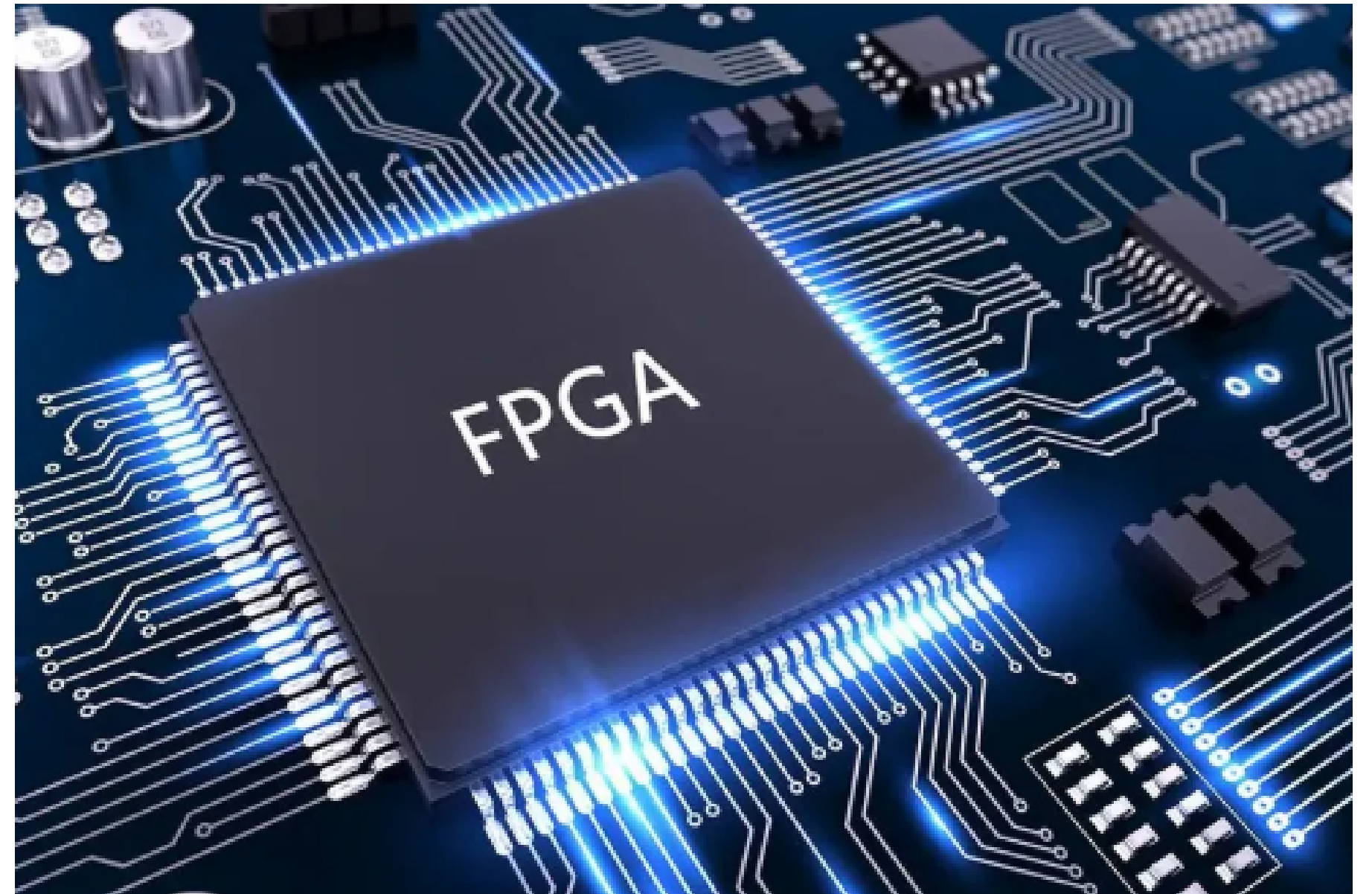
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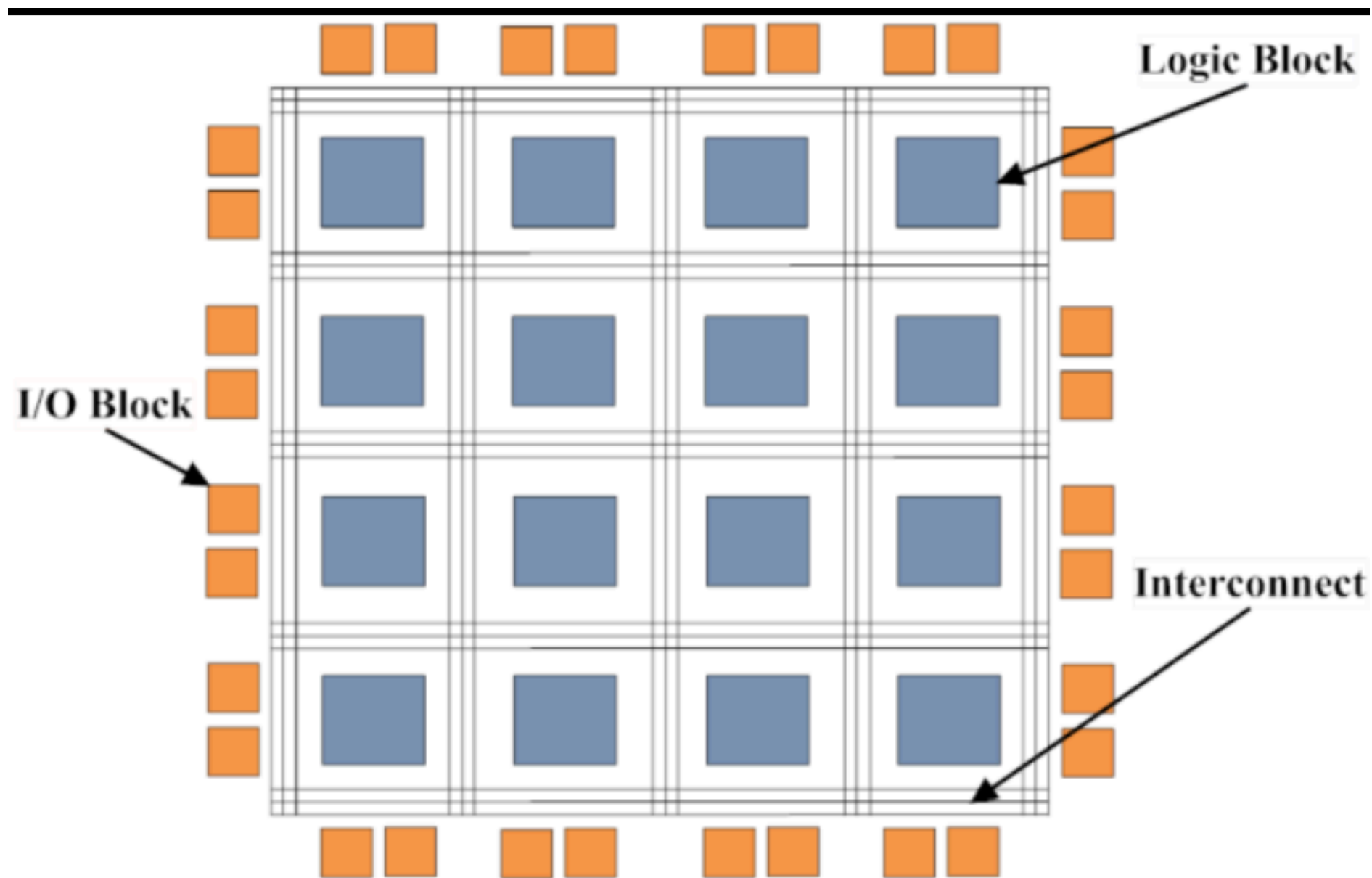
# Introduction

In this 30-minute session, we'll briefly learn what an FPGA is, why SystemVerilog is used to program it, understand how a 1-bit Full Adder works, then implement and test it on the Basys 3 FPGA development board



# What is FPGA?

"FPGA stands for Field-Programmable Gate Array. It's an integrated circuit that can be configured by the user to perform any digital logic task."



# Applications

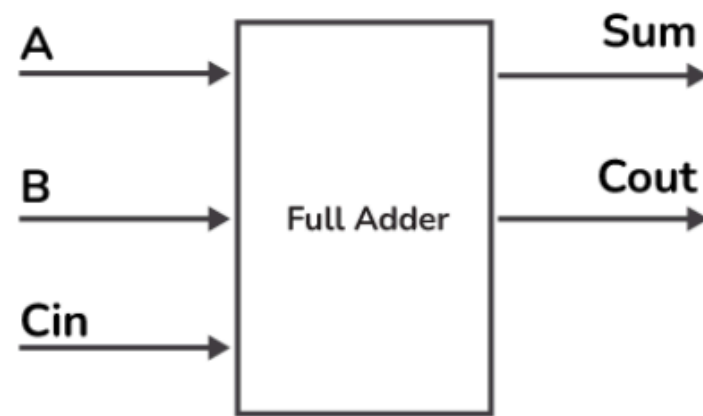
- Embedded Systems
- Aerospace and Defense
- AI and Machine Learning Accelerators
- Robotics and Automation
- Real-time Signal Processing



# Why Use SystemVerilog?

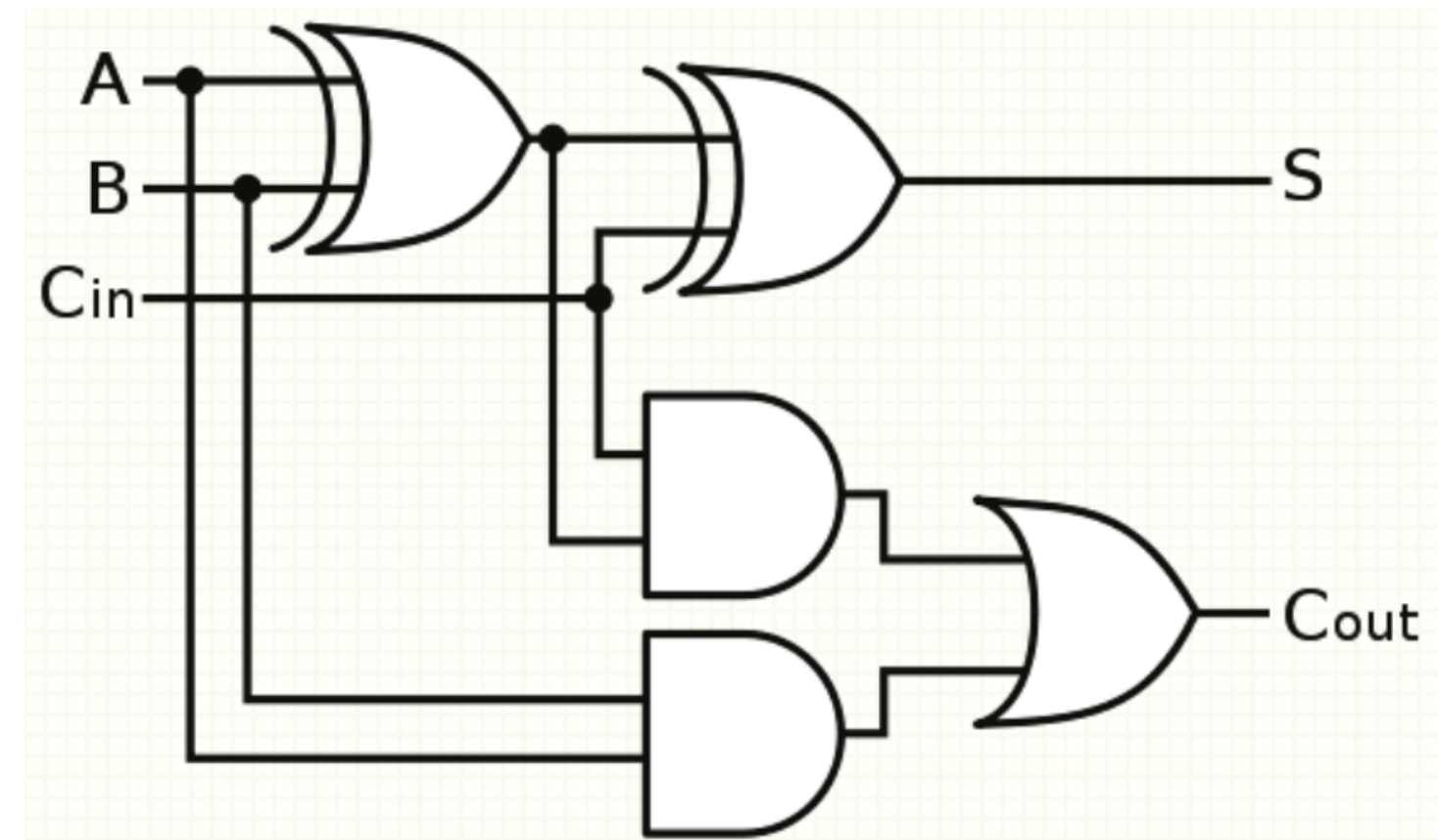
"To design logic circuits, we use Hardware Description Languages (HDLs). SystemVerilog is one of the most popular HDLs."

# What is a 1-bit Full Adder?



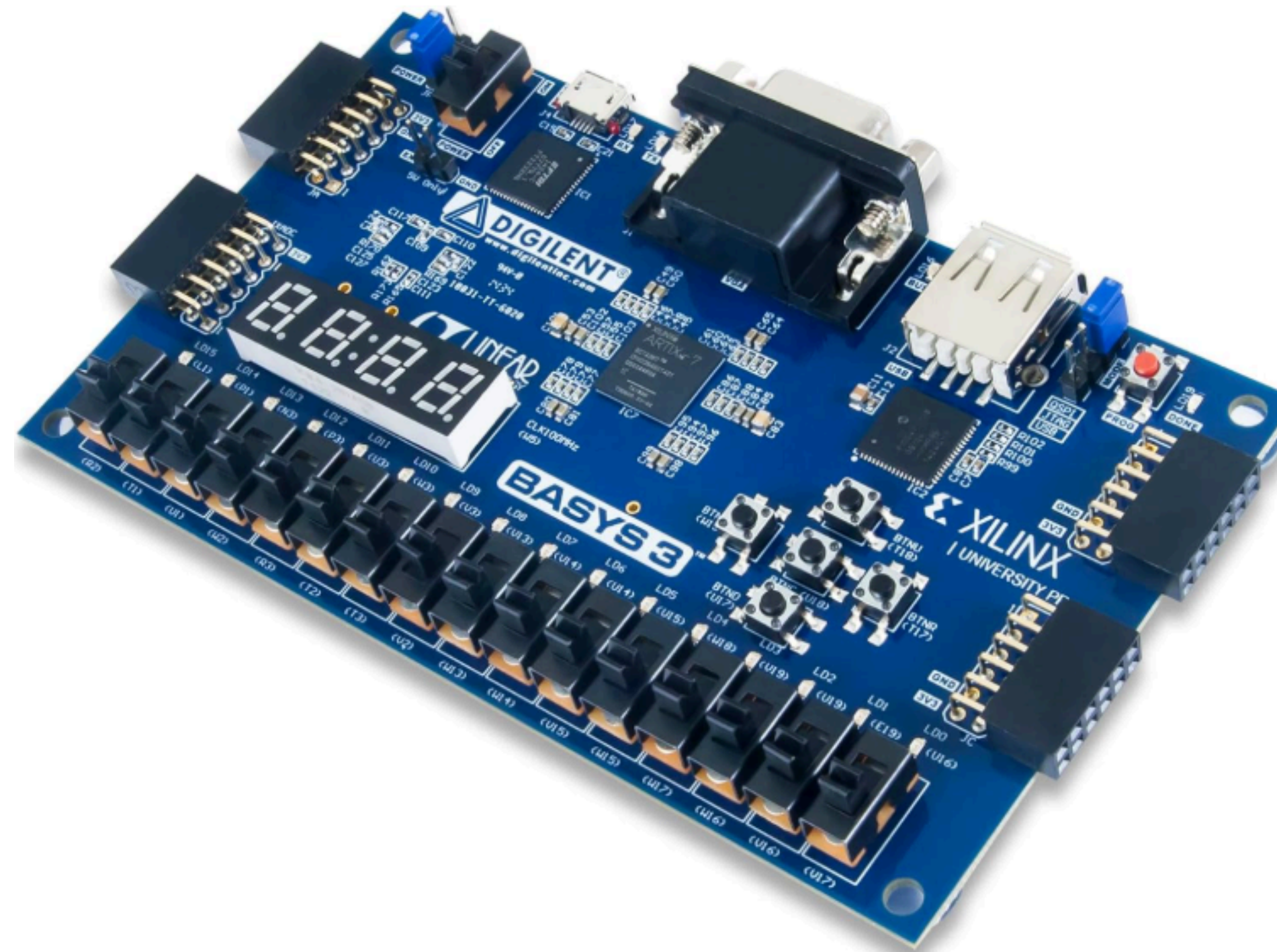
Truth Table

A	B	Cin	Sum	Cout
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1





# Live Demo on Basys 3





# Thank You ALL

<http://www.youtube.com/@METSTUDY>

