ASSIGNMENT 5
GROUP - 50

18CS10069 - SIBA SMARAK PANIGRAHI
18CS30051 - DEBAJYOTI DASGUPTA
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BOARD SPECIFICATIONS

Board: Nexys 4 DDR; FPGA: Artix-7 (XC7A100TCSG324-1)

1. 4 bit combinational ALU :

1. **HARDWARE REQUIREMENTS:**

Resource	Utilization	Available	Utilization %
LUT	42	63400	0.07
IO	22	210	10.48

2. **CRITICAL PATH DELAY:** 8.036 ns

2. 16-bit Bit-sliced ALU:

1. **HARDWARE REQUIREMENTS:**

Resource	Utilization	Available	Utilization %
LUT	163	63400	0.26
IO	58	210	27.62

2. **CRITICAL PATH DELAY:** 10.367 ns

3. Carry Select Adder:

1. **HARDWARE REQUIREMENTS:**

Resource	Utilization	Available	Utilization %
LUT	30	63400	0.05
IO	50	210	23.81

2. **CRITICAL PATH DELAY:** 7.376 ns

4. Carry Save Adder:

1. **HARDWARE REQUIREMENTS:**

Resource	Utilization	Available	Utilization %
LUT	195	63400	0.31
IO	165	210	78.57

2. **CRITICAL PATH DELAY:** 10.945 ns

Speed of operation is inversely proportional to the critical path delay. We are not comparing the speed of operation since each of the problems are different.