

Practical 7
Logic Gates and Adders

Part A

Objective

Understand various logic Adder circuits

1. Complete questions below

A	Draw a logic gate circuit diagram and truth table for a Half Adder using only XOR , OR and <u>AND</u> gates
B	Draw a logic gate circuit diagram and truth table for a Full Adder using only XOR , OR and <u>AND</u> gates

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2. Complete the circuits below

A	<p>Using logic.ly construct an 8 Bit Rippler Adder and attach to an appropriate number of 7 segment displays.</p> <p>Add the following numbers 1111 1001 0000 0110</p> <p>The output should be 255 in Based₁₀</p> <p>Upload the completed circuit file to GitHub</p>
B	<p>Using logic.ly modify the 8 Bit Rippler Adder circuit above to be a subtraction circuit and attach to an appropriate number of 7 segment displays.</p> <p>Subtract the following numbers 1111 1111 0000 1111</p> <p>The output should be 240 in Based₁₀</p> <p>Upload the completed circuit file to GitHub</p>
C	<p>Construct the logic gate circuit for a DM74LS83A 4-Bit Binary Adder with Fast Carry Manufactured by Fairchild Semi-conductors. See Logic Diagram Page 2</p> <p>https://www.futurlec.com/74LS/74LS83.shtml</p> <p>Upload the completed circuit file to GitHub</p>

Hand up this practical report at the end of session and ensure it has been checked

Student Name		Student Number	
Date		Checked	
Group	A / B		