DIGITAL EXPERIMENT 3

Objective:

1. Reading the datasheet of an IC

2. Understanding the pin configuration

3. Configuring the IC to achieve a certain functionality

***INTRODUCTION:*** <https://drive.google.com/file/d/1SMKGMQ1ZcrIjzOt9U7I6EoyfO1RfprqJ/view?usp=drive_link>

***TASK 1 & 2:***  
Reading the datasheet of an IC and Discussing the Pin Configuration diagram of it: 74HC163N

<https://drive.google.com/file/d/16BQpiXbIE33FPJFCyaw46tQDvUCykOUa/view?usp=drive_link>

***TASK 3:***

1. **Configure the counter 74LS163 to count up from 0000 to 1111**

**Pin configuration:**

IC74LS163 –

Pin 1: VCC Pin9: VCC

Pin2: IC74HC04N Pin2 Pin 10: VCC

Pin3: IN Pin 1: Out

Pin4: IN Pin 12: Out

Pin 5: IN Pin13: Out

Pin6: IN Pin14: Out

Pin7: VCC Pin15: RCO  
Pin8: GND Pin16: VCC

IC74HC04N-  
PIN1: CLK Input Pin7: GND   
PIN2: 1C74LS163 Pin2 Pin14: VCC

<https://drive.google.com/file/d/1p9gNu3tsrIHzrLlxFgxnhGtR1c_0wCoN/view?usp=drive_link>

1. **Configure the counter 74LS163 to count down from 1111 to 0000– Pin Configuration:**

IC74LS163-

Pin 1: VCC Pin9: VCC

Pin2: IC74HC04N Pin2 Pin 10: VCC

Pin3: IN Pin 11: IC74HC04N Pin13

Pin4: IN Pin 12: IC74HC04N Pin11

Pin 5: IN Pin13: IC74HC04N Pin9

Pin6: IN Pin14: IC74HC04N Pin 5

Pin7: VCC Pin15: RCO  
Pin8: GND Pin16: VCC

IC74HC04N-  
PIN1: CLK Input PIN8: OUT  
PIN2: IC74LS163 Pin2 PI9: IC74LS163

PIN13: IC74LS163 PIN10: OUT  
PIN6: PIN11 : IC74LS16 Pin12

Pin7: GND PIN12: OUT

PIN14: VCC PIN13: IC74LS163 Pin1

<https://drive.google.com/file/d/1m1O8Meexj7YNfz2j8YQ0B1ancjuQor8y/view?usp=drive_link>

1. **Explain how this can be used to check the functionality of a four-input combination logic circuit.**Done in the same way as in problem 2.  
   We can add several Logic gates to each output to play with the sequence of Output signals.