Lab 9

ECE 3300 LAB

SECTION 02

Instructor: Mohamed Aly

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Group I

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**Abstract**

Purpose of the experiment was to create a system using up/down counter and barrel shifter while using a UART to input values. A barrel shifter was used to shift a data by a specified number of bits in one clock cycle in a left rotation or right rotation. In this experiment the number of bits that was used were 32 since 8 displays were used. To create 4-bit barrel shifter, 2 multiplexors were used. The total number of multiplexors used was 8 multiplexors. Similar to lab 5, a button was used as the up/down counter instead of using a switch. The UART uses a timer, receiver, transmitter and 2 FIFO’s in order to run properly

**Theory: Sketch of Design**

**Diagram, schematic

Description automatically generated**

A piece of paper with writing on it

Description automatically generated with medium confidence

**Area/Resources Information**

Elaborated Design

Diagram, schematic

Description automatically generated

Diagram, schematic

Description automatically generated

Diagram, schematic

Description automatically generated

Diagram, waterfall chart

Description automatically generated

Diagram, schematic

Description automatically generated

Diagram, schematic

Description automatically generated

Schematic

Description automatically generated with low confidence

Diagram

Description automatically generated

A picture containing text, electronics, screenshot

Description automatically generated

Diagram

Description automatically generated

**Power Usage**

**Chart

Description automatically generated**

**Post-Implementation Resource Utilization**

