LAB 4 DEMO – Building a Microprocessor Based System with External Data Buffer

Reviewer _____

Team_____

Microprocessor Based System (310)

Microprocessor (160)

Top Level Module	30

    Input and Output

        Clock, LEDs, Switches, Reset

    NIOS II Processor

        Clock, LEDs, Switches, Reset

Qsys	50

    CPU

    GPIO

        LEDs

        Switches

NIOS II Build		80
Count Binary Program	15	
Output to Eclipse Window		
Lights and Switches Program	15	
All Switches → LEDs		
Reset		
Hello World Small Program 1	15	
Output to Eclipse Window		
Hello World Small Program 2	15	
Input from Eclipse Window		
Output to Eclipse Window		
Hello World Small Program 3	20	
Switch I/O		
LED Display		

Each Scanner

    10 entry byte wide buffer

Display

    Control and Status Lines

        Red LEDs

    Data

        Numeric LED display

Microprocessor – Scanner Exchange Protocol

    Microprocessor to Scanner

        Start scanning

    Scanner

        Enter each buffer address as data into corresponding address

    Scanner to Microprocessor

        Ready to Transfer

    Microprocessor to Scanner

        Transfer