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EE 120B

Custom Lab Report

Simulation of the Simon Game

In this lab I simulated the Simon game. In order to complete this task I needed to created 1 SM with 5 states. The period was set to 50 ms in order prevent button debouncing. Each LED sequence entered a State Period counter where the it iterate/ tick for 10 times and then after the 10 ticks were completed, the SM transitioned into another state where it would lower PORT B’s output. In that same state, it would evaluate if the maximum amount of fully completed levels were greater than the DisplayIndex variable used to traverse the array. If DIsplayIndex was greater than maximum then it would transition into a SM called Checker, where it would store temporarily the input values from the user when the user pressed any of the buttons. In this state, the microcontroller would check if the GameIndex position of the array matched with the user’s input. If the inputs matched then it would transition into NextButton State where in that state it would get the next expected sequence from the user. After 9 iterations if the user continued to input the correct sequence then it would transition from Checker to the Winner State and during the transition it would write to the LCD that you have won and go to the Press\_Start State all over again. If the users inputs did not match during the beginning evaluation, then it would traverse to a loser State where it would display that you had lost and point to the Presse\_Start State.