Logic Circuit and Digital Design Final Project

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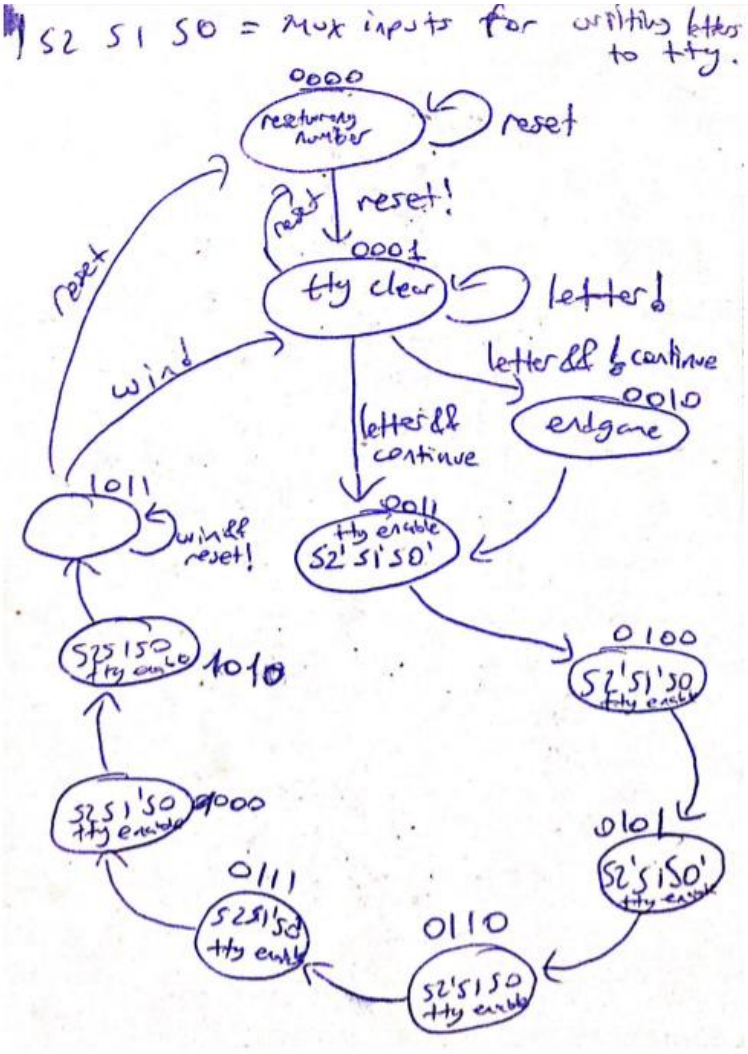
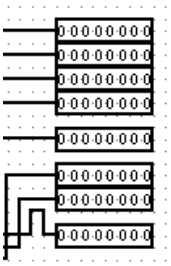
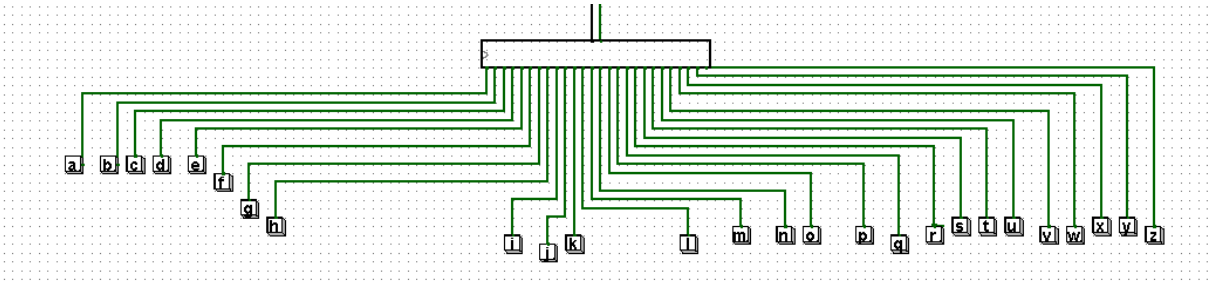
FSM for final Project



You should enter Secret Word in terms of binary form

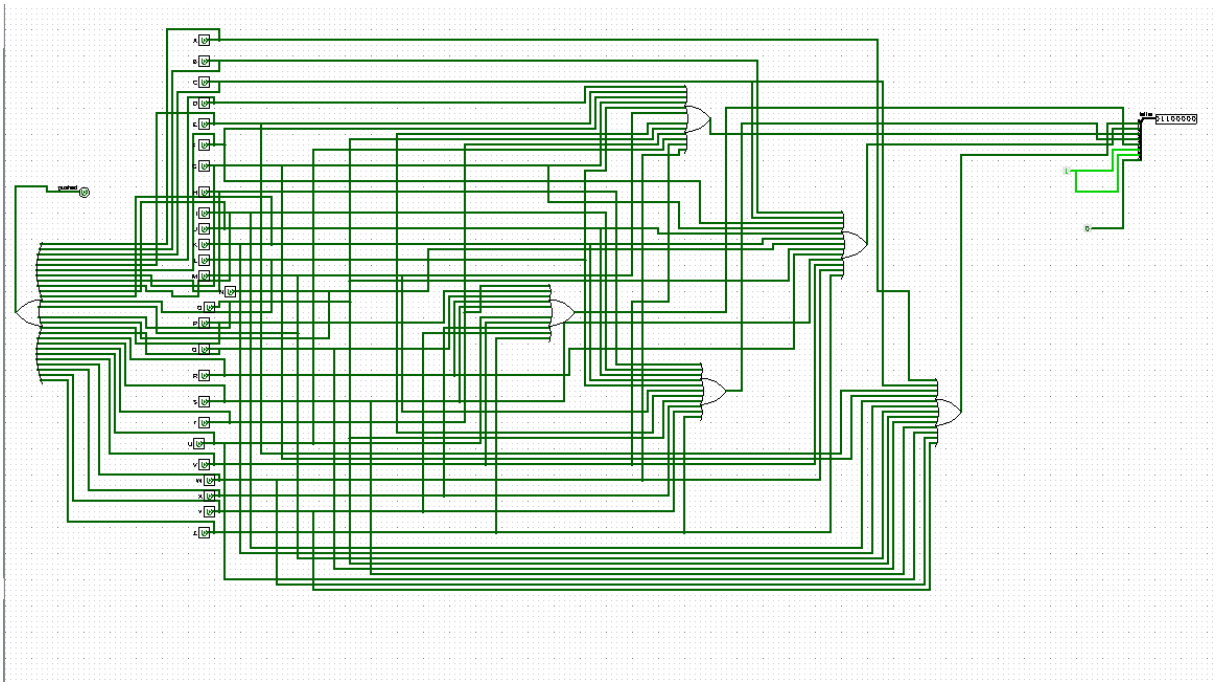


You can guess a letter by pushing a letter

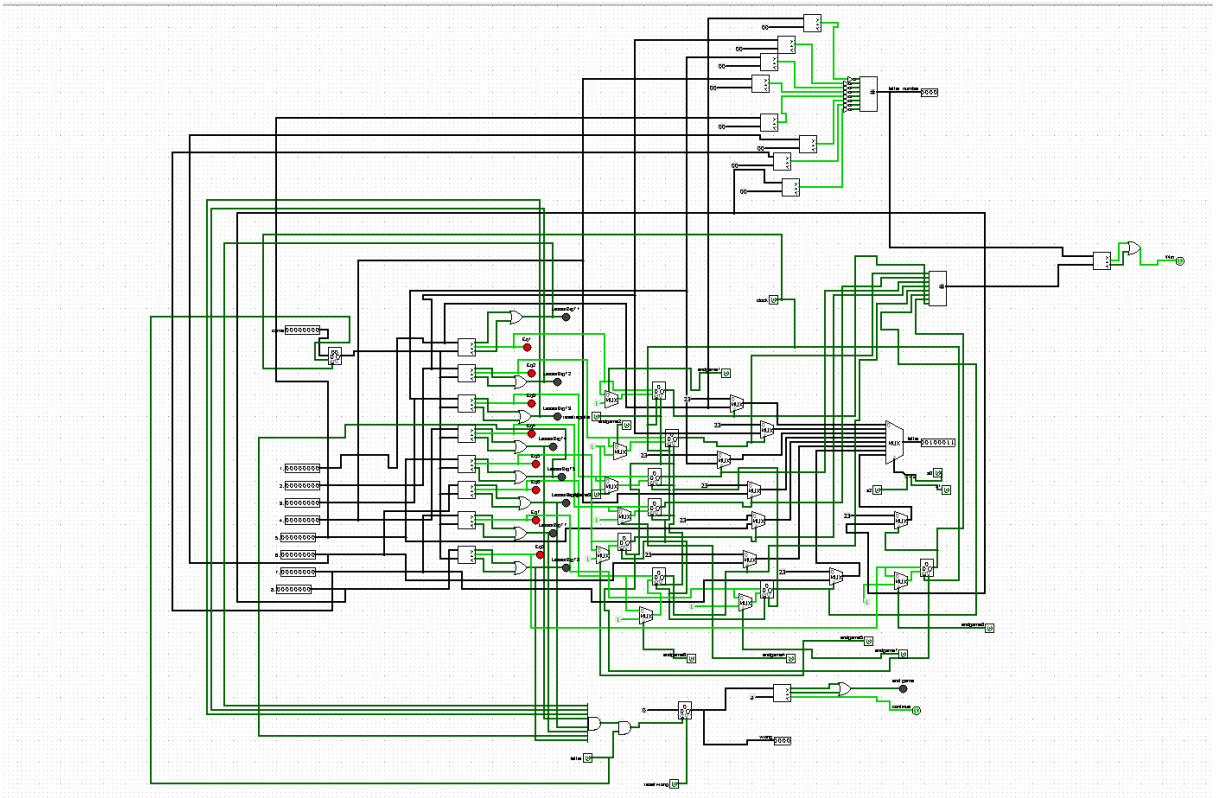


There is a combinatinal circuit that finds binary form of pushed button.

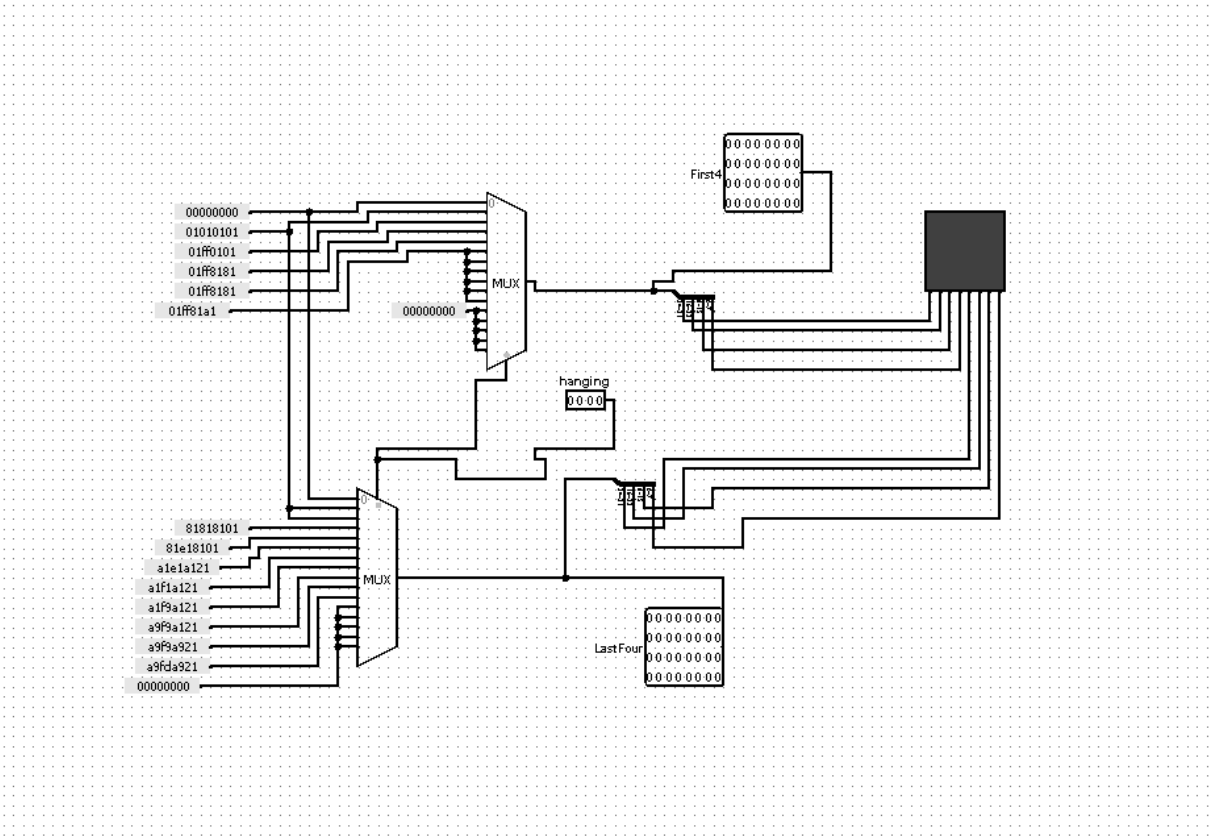
Letter Circuit



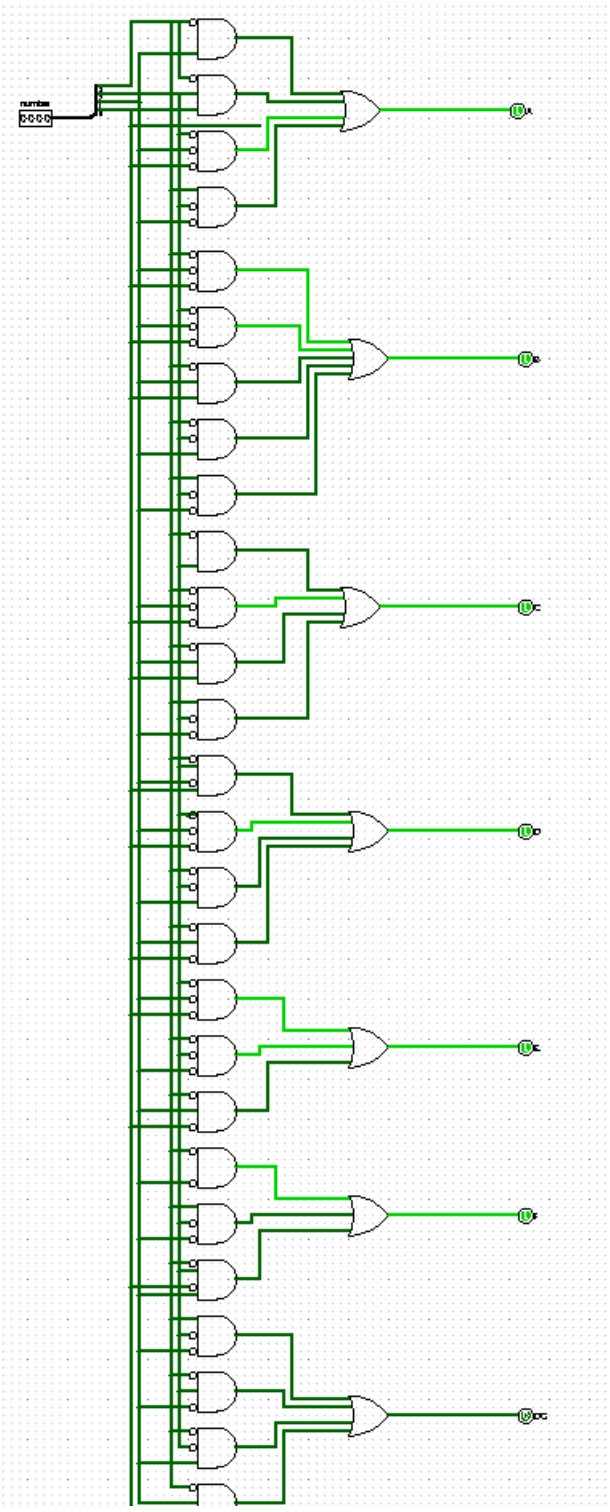
Datapath



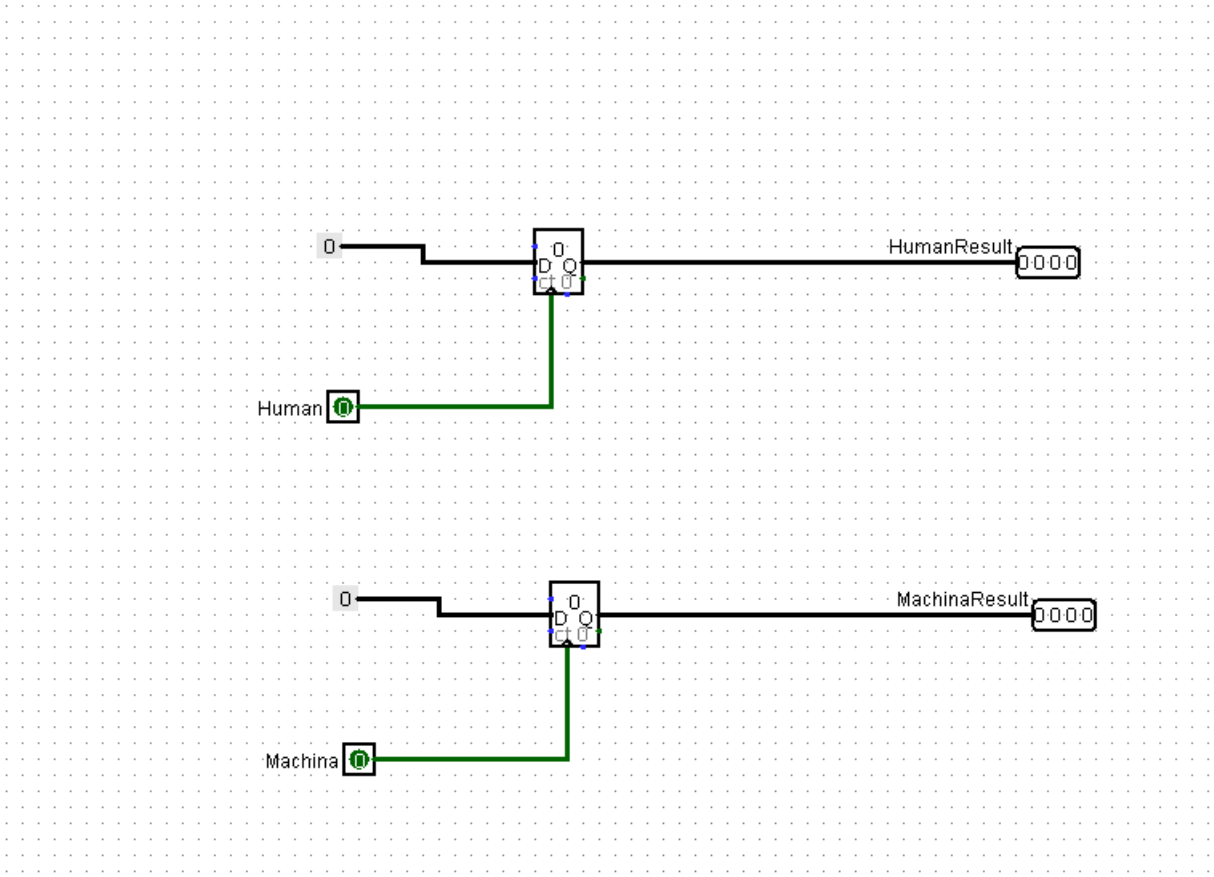
Led Matrix (Bonus Part)



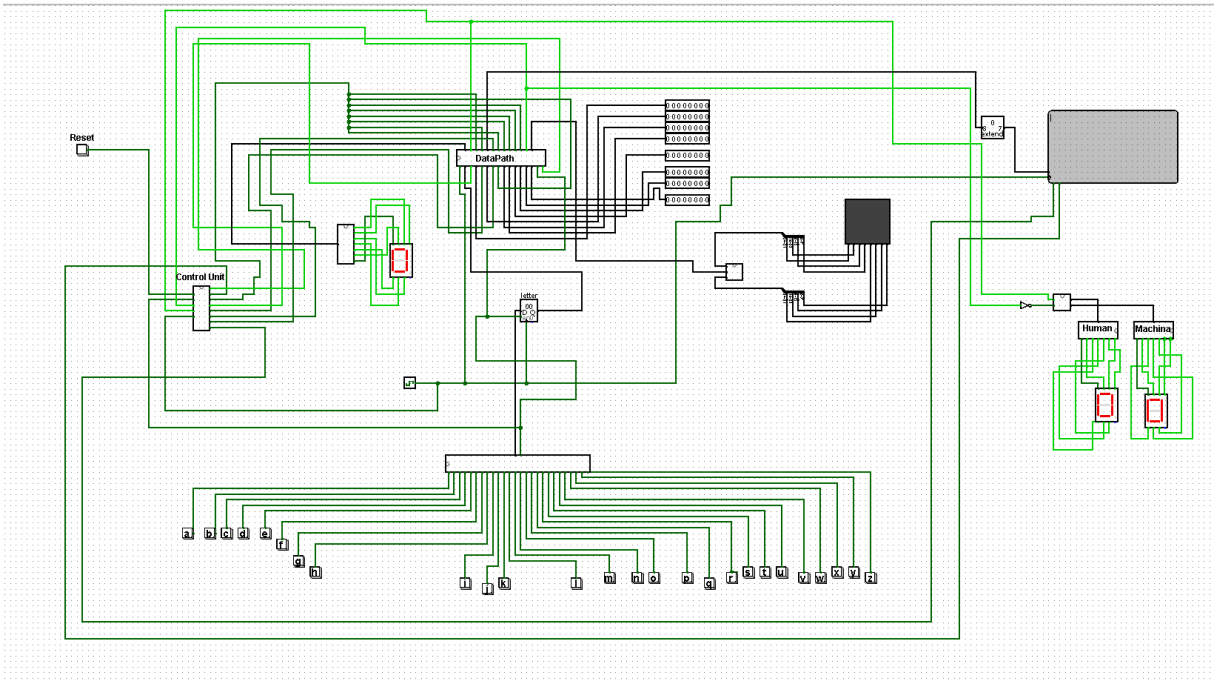
7-Segment Display



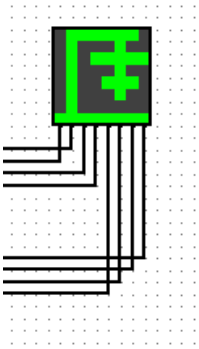
ScoreBoard (Bonus Part)



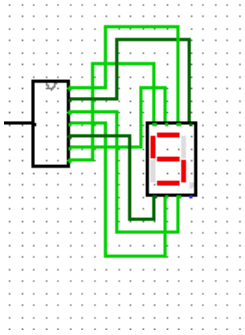
Main Circuit



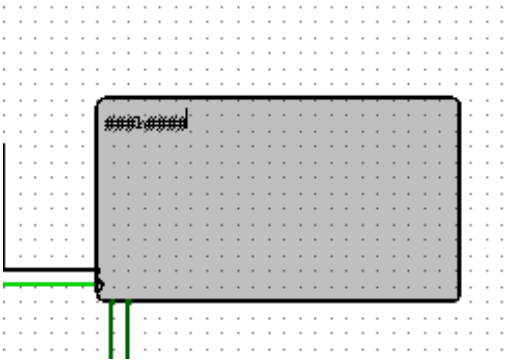
10 wrong guess in Led Matrix



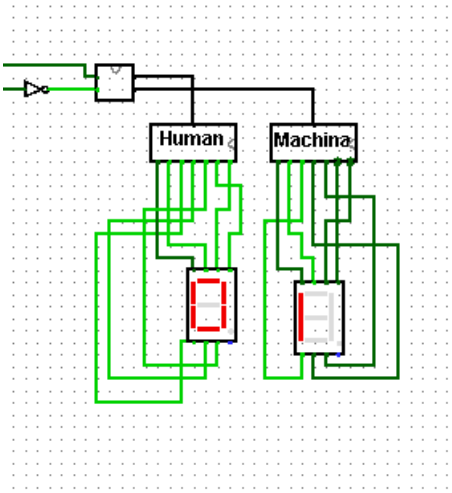
Number of Letter of The Word



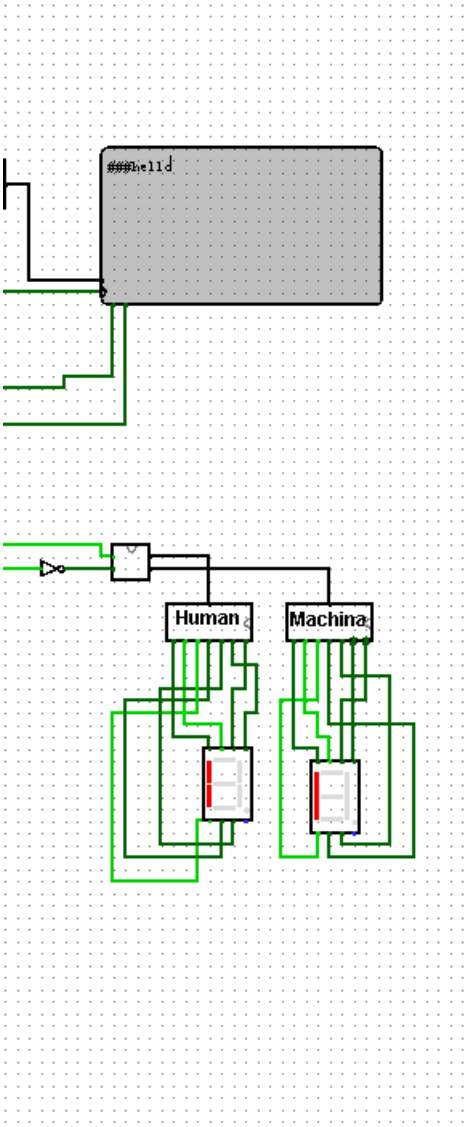
If you enter a letter that in the Word than it shows it on tty



If You loose then scoreboard



If you win then scoreboard



Datapath Optimization

Firstly I put 8 input for letters and 1 input for pushed letter.Then I compare pushed letter to 8 input letter.Then if they are all not equal letter then counter increases and led matrix turn one led on. If any one of them is equal to pushed one then it turns the register enable bit value to 1.So If it is one then it is shown in the TTY display.I use multiplexer for choosing true letter or # symbol.Also I compute letter number of the Word by comparing them to 0 .

Errors in my Project

When the program start it behaves a little different but I didn't solve it maybe it coused by my truth tables or finite state machine.So If You push a letter and push restart then program is continues well except this.

I expanded a lot of energy fort his Project by the way.Also I did 2 bonus part in this Project that are led matrix and scoreboard.

Thank you so much.

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