ISLAMIC UNIVERSITY OF TECHNOLOGY

COURSE NO: EEE 4308

COURSE NAME: DIGITAL ELECTRONICS LAB

SUBJECT: Report on Snake-Ladder Game (software version)

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SECTION: C

LAB GROUP: C2

SNAKE-LADDER GAME

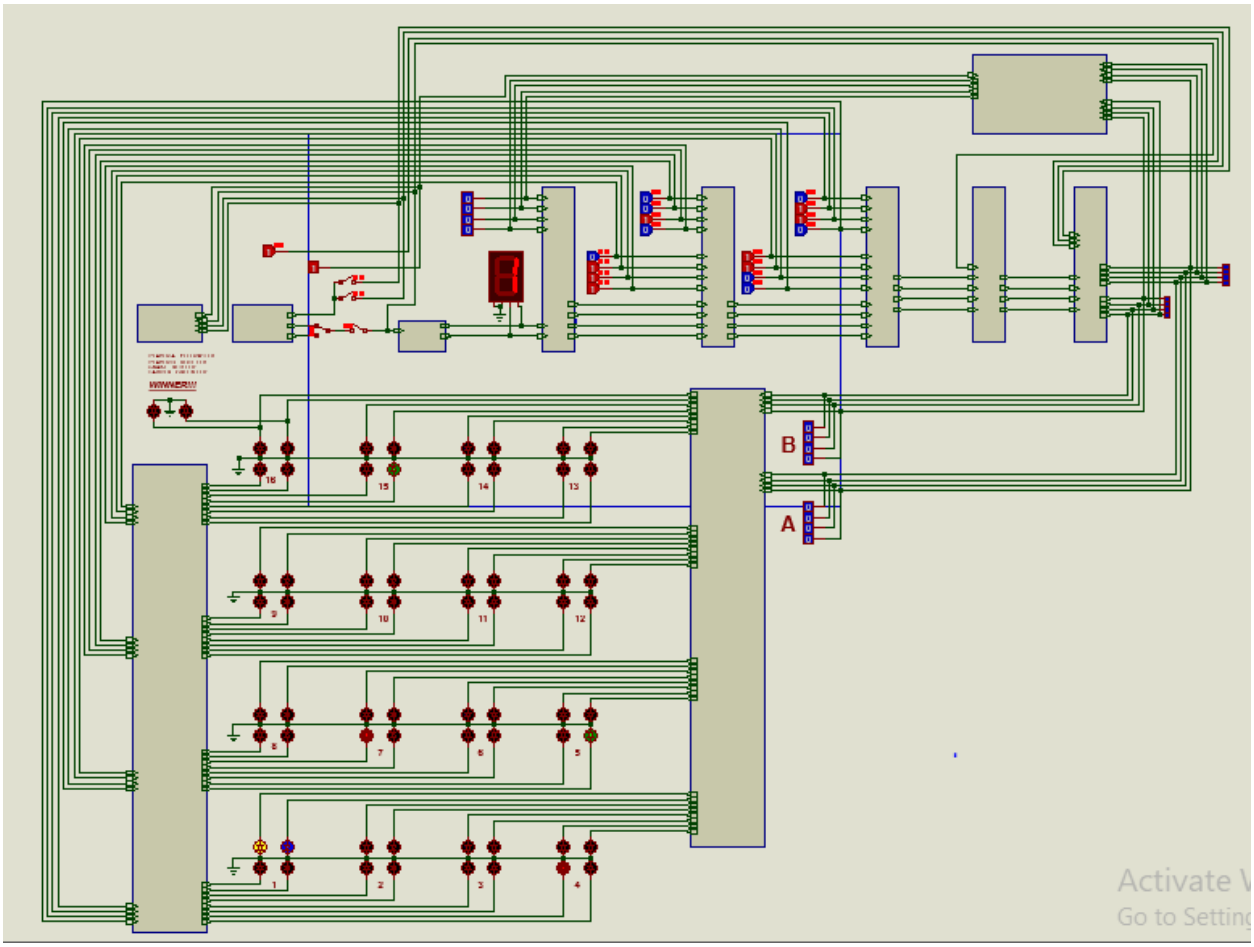

Figure: Full circuit diagram

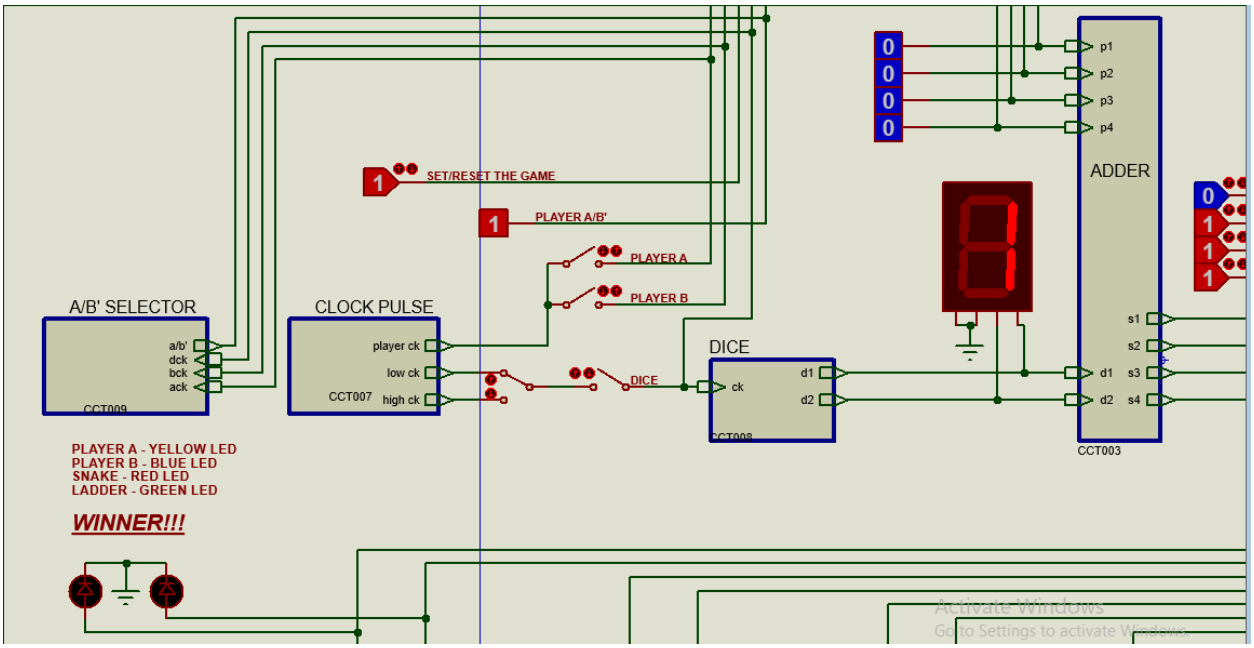

Figure: Zoomed in part of Full circuit diagram (1 of 3)

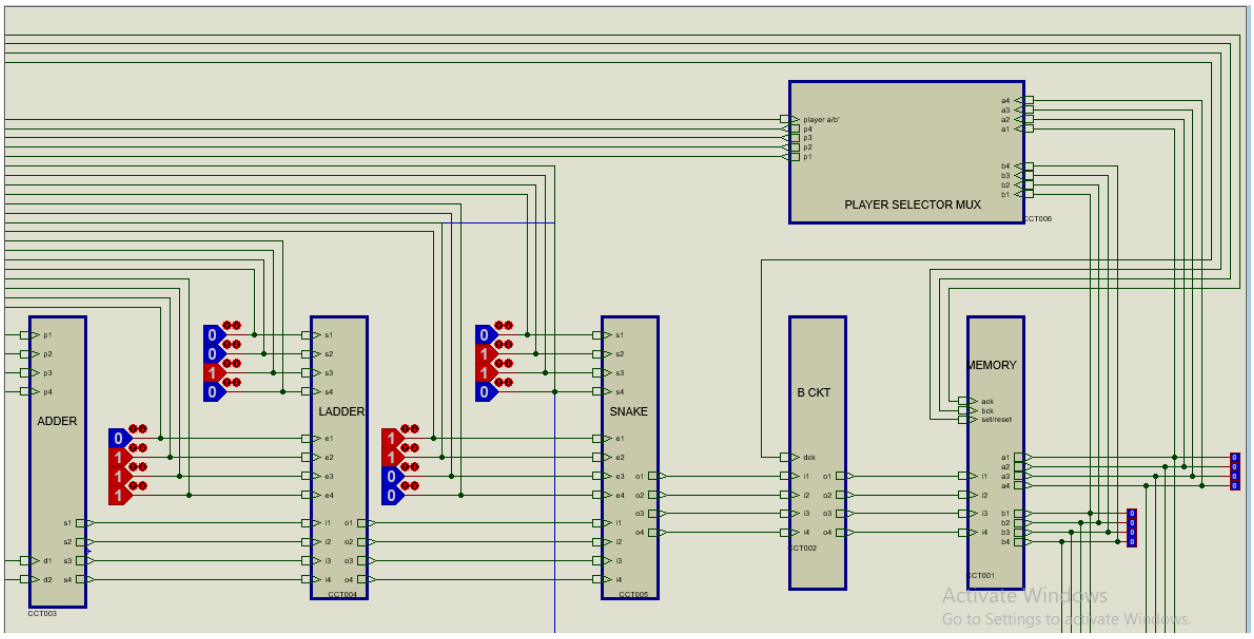

Figure: Zoomed in part of Full circuit diagram (2 of 3)

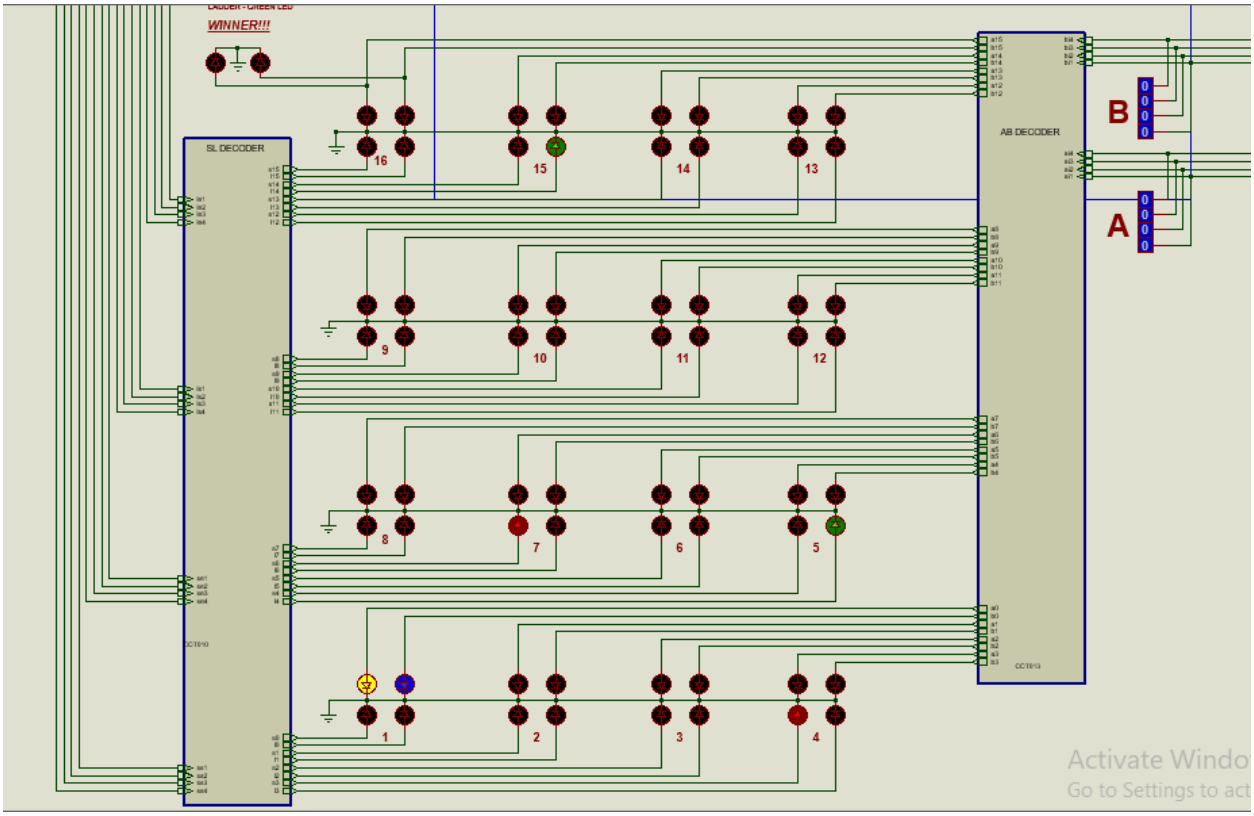

Figure: Zoomed in part of Full circuit diagram (3 of 3)

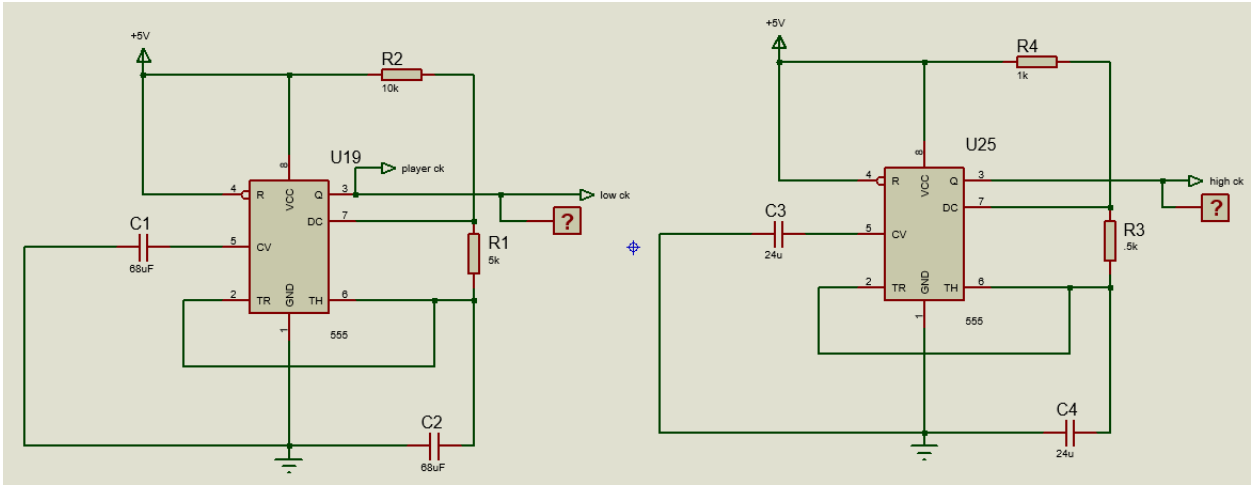

Figure: Sub-circuit of CLOCK PULSE

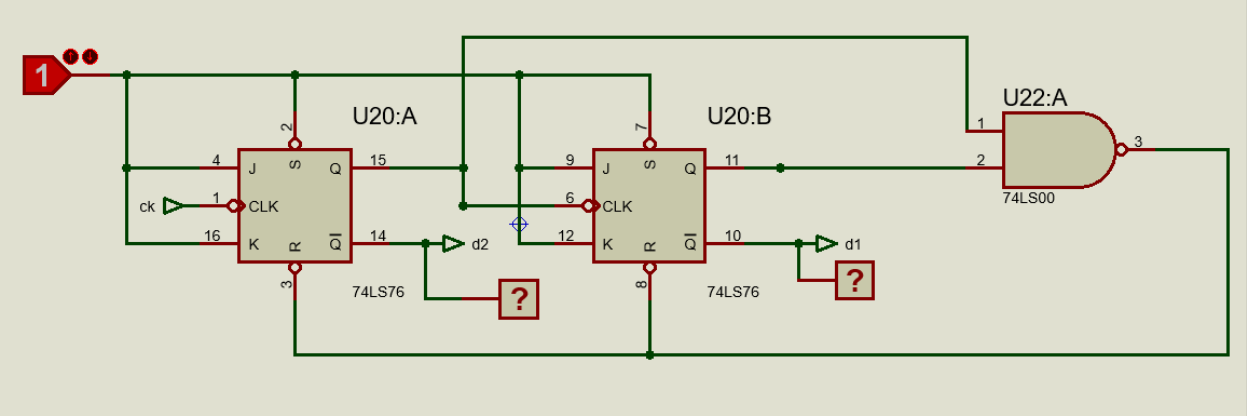

Figure: Sub-circuit of DICE

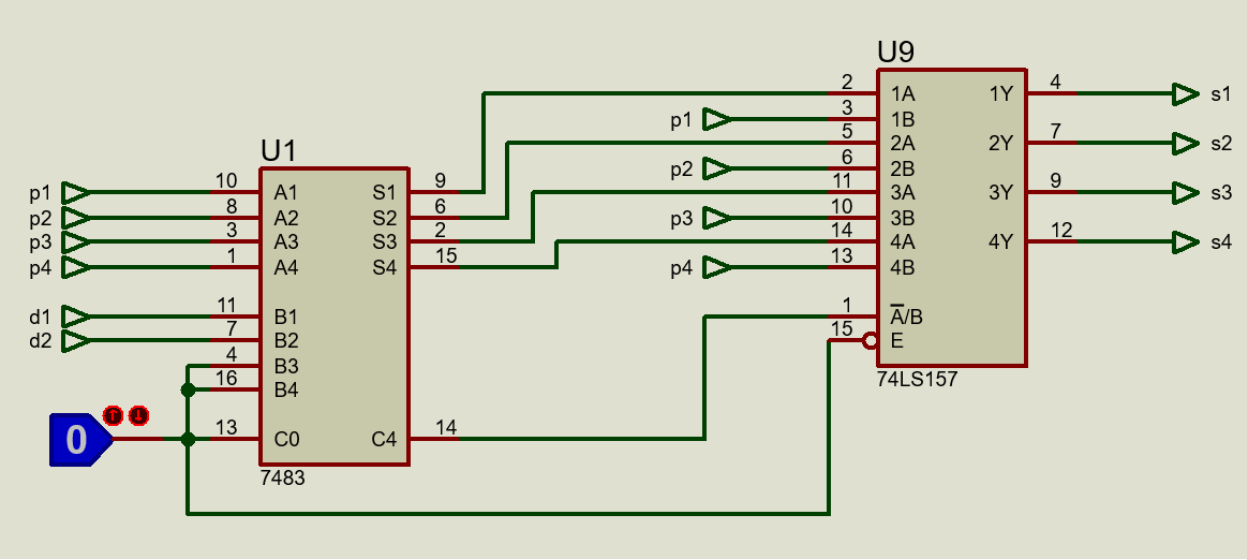

Figure: Sub-circuit of ADDER

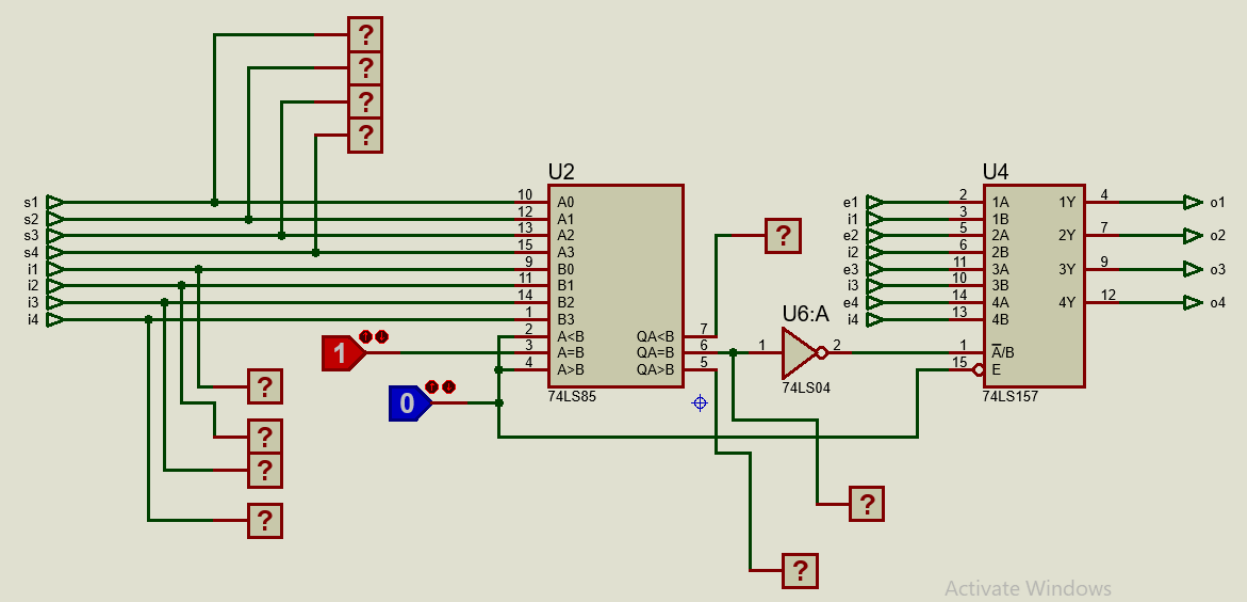

Figure: Sub-circuit of LADDER

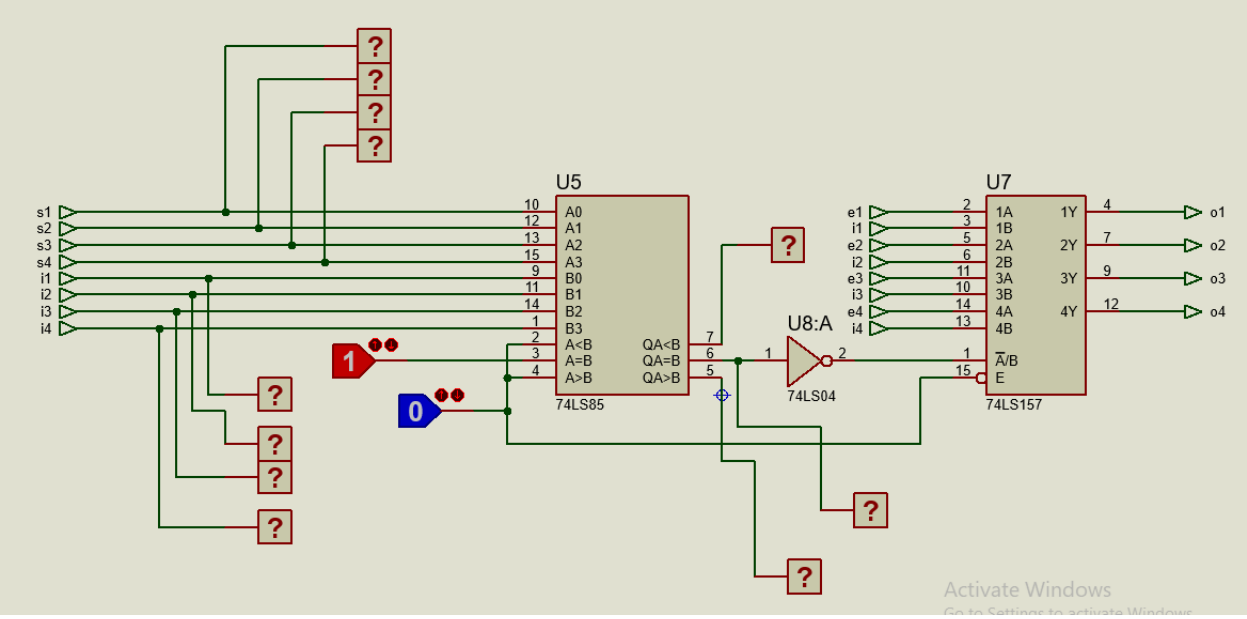

Figure: Sub-circuit of SNAKE

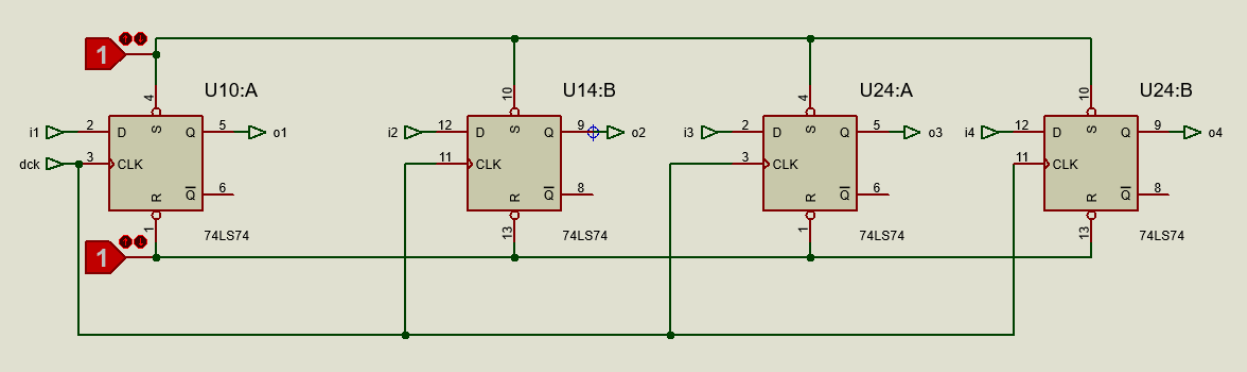

Figure: Sub-circuit of B CKT (buffer circuit)

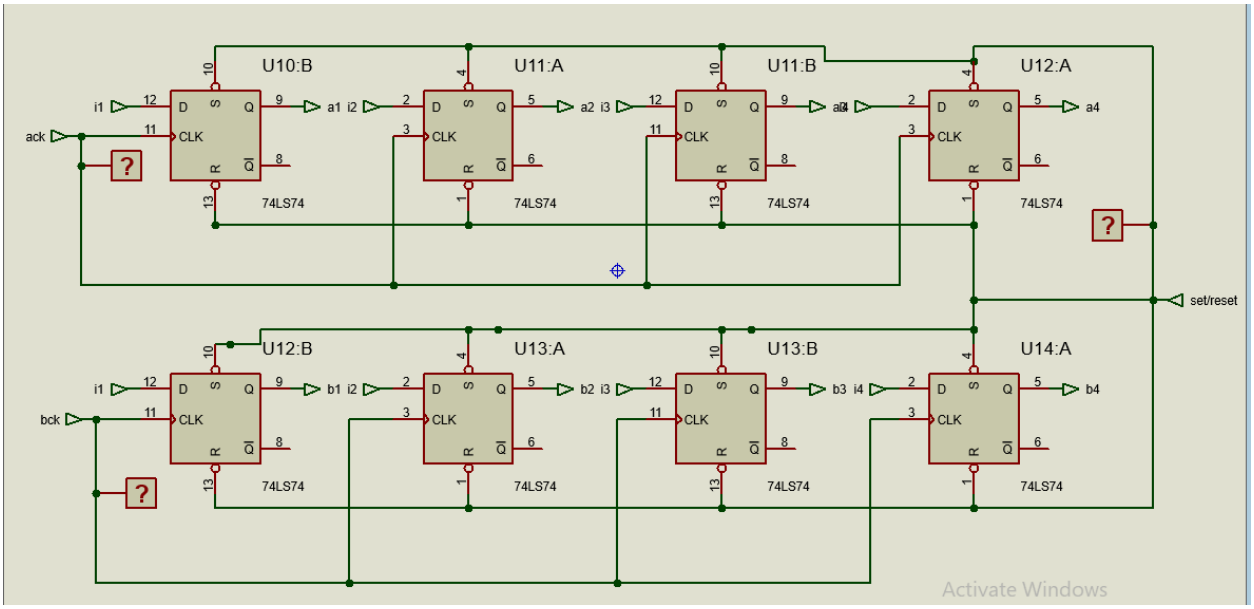

Figure: Sub-circuit of MEMORY

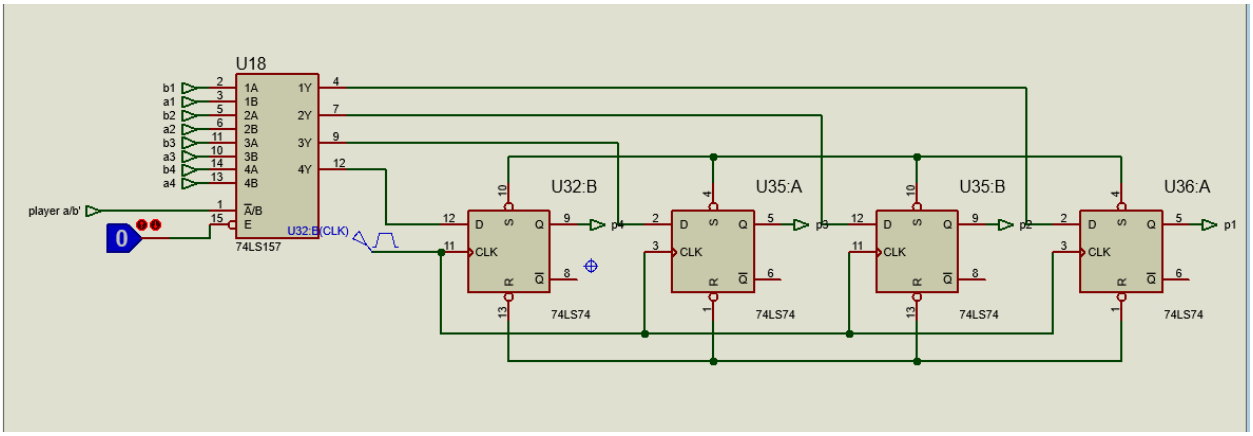

Figure: Sub-circuit of PLAYER SELECTOR MUX (feedback memory circuit)

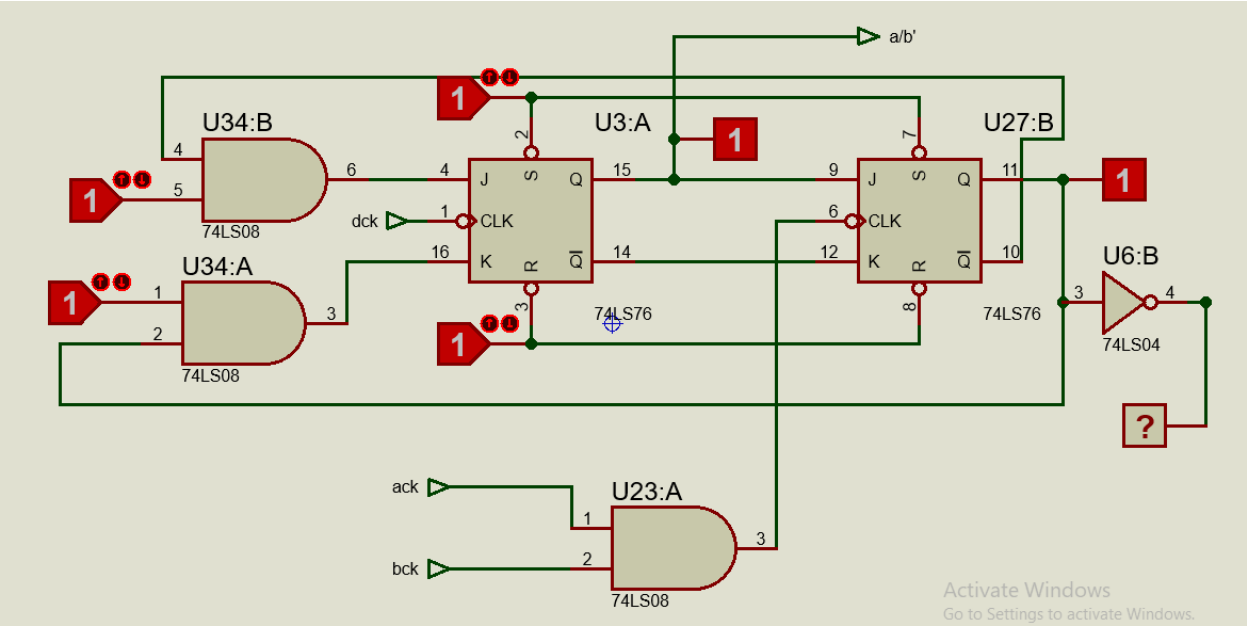

Figure: Sub-circuit of A/B' SELECTOR

NB: This is the part where the design I have made is more stable than most of the designs. Here I used a master-slave JK combination to overcome the propagation delay and other delays which will appear in our hardware project.

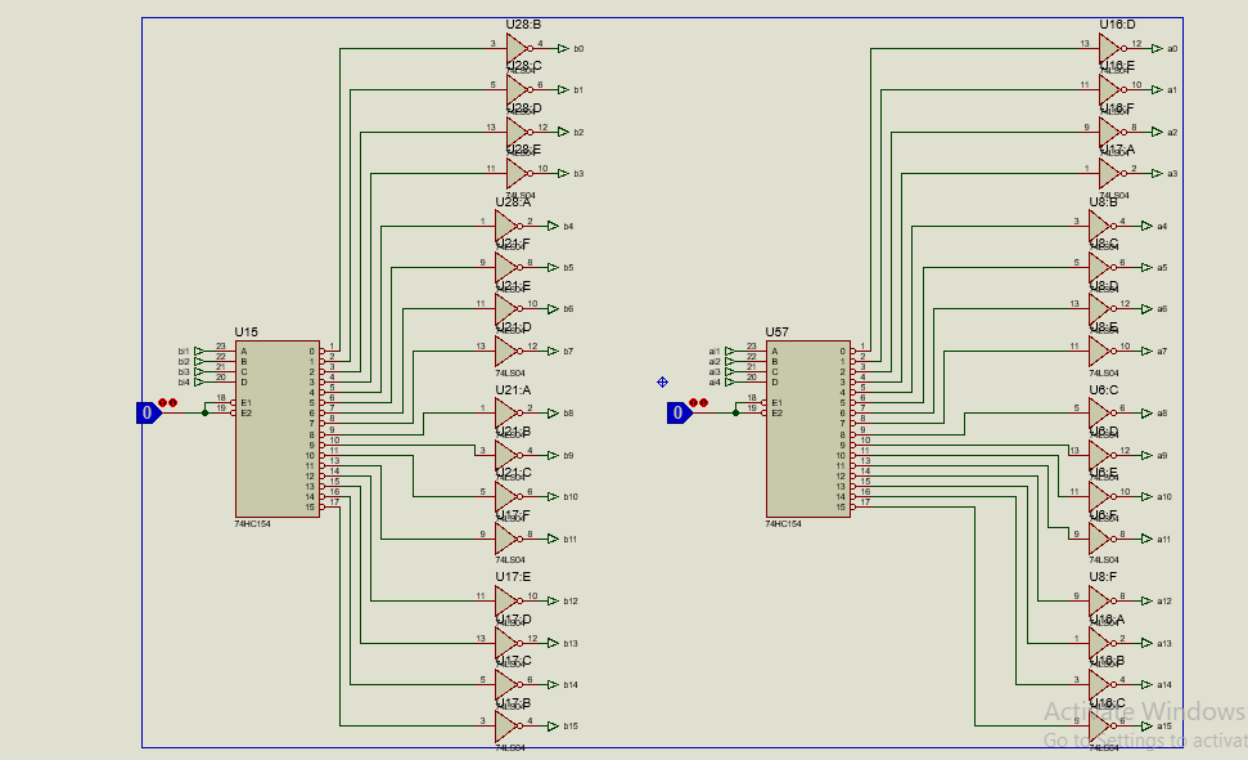

Figure: Sub-circuit of A/B’ DECODER

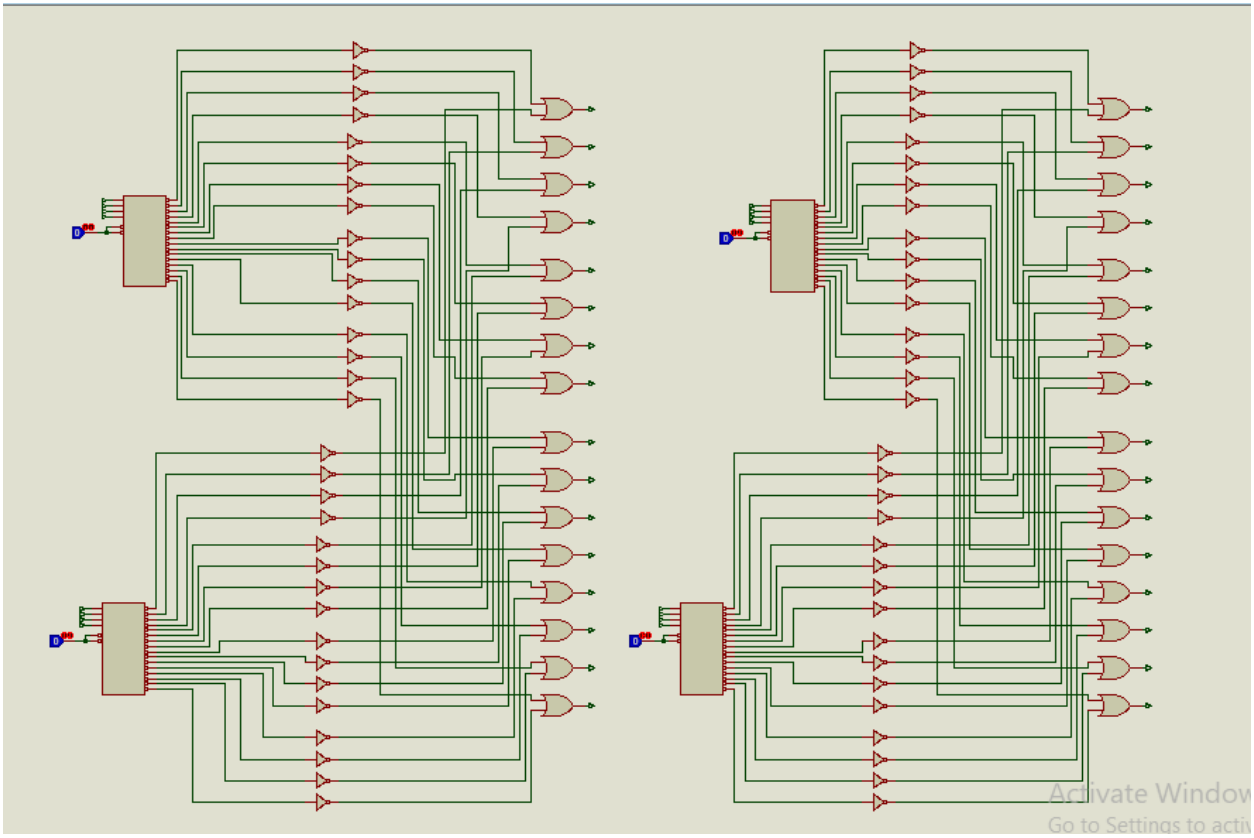

Figure: Sub-circuit of SL DECODER (snake ladder decoder)

Discussion: While we will need to implement this circuit in hardware, I think this design will give the best result. I have spent a lot of time just to make this a stable design. To do this, I have used an extra master-slave JK combination and a Buffer circuit so that this design has almost become automated. It can be modified very easily to a only 2-switch (dice & player) game.