PROJECT TITLE

DIGITAL LOCKER USING VERILOG HDL

OBJECTIVE:

To design a electronic digital locker using Verilog HDL using Logisim and implementation using FPGA Kit

SOFTWARE USED - LOGISIM

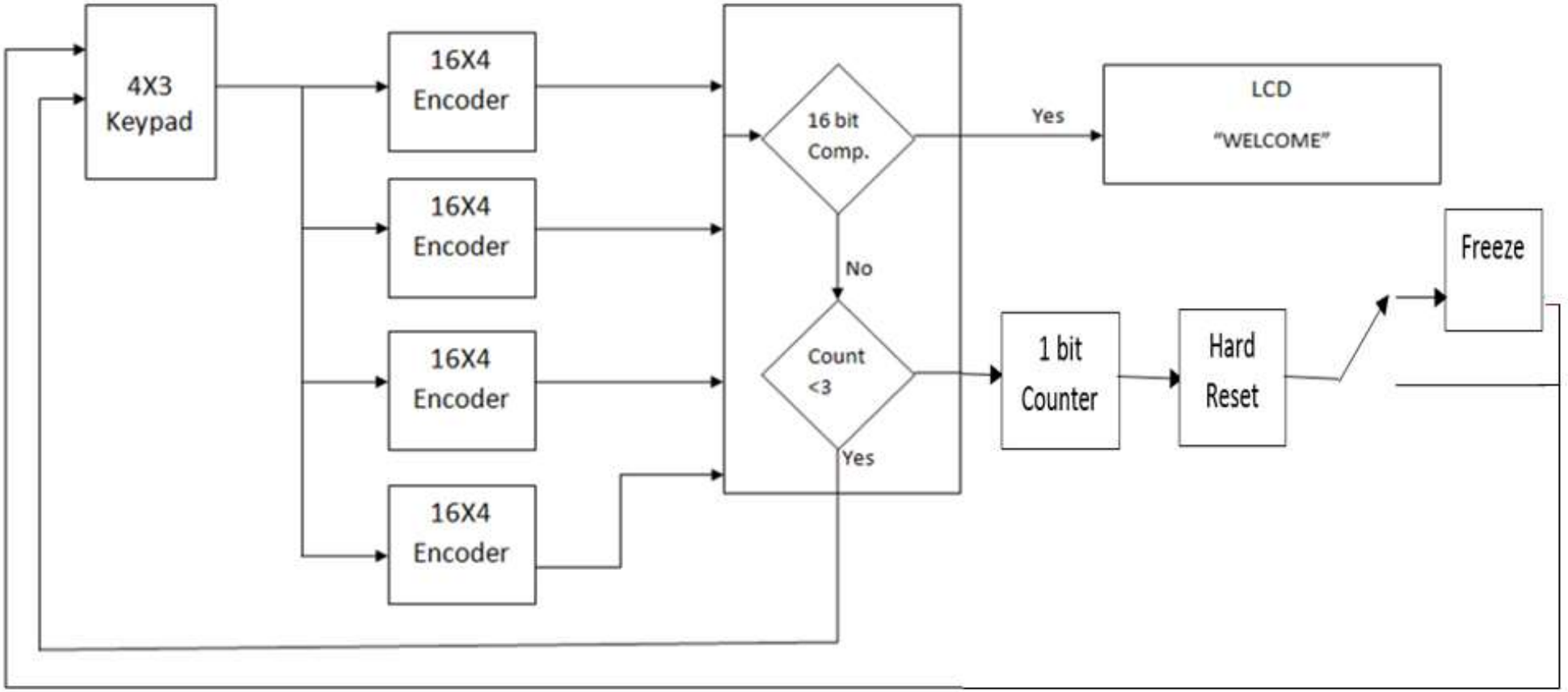
LOGISIM :

Logisim is a tool for designing and simulating digital logic circuits. With its simple tool bar interface and simulation of circuits as you build them , it is simple enough to facilitate learning the most basic concept related to logic circuit.

LANGUAGE USED – VERILOG

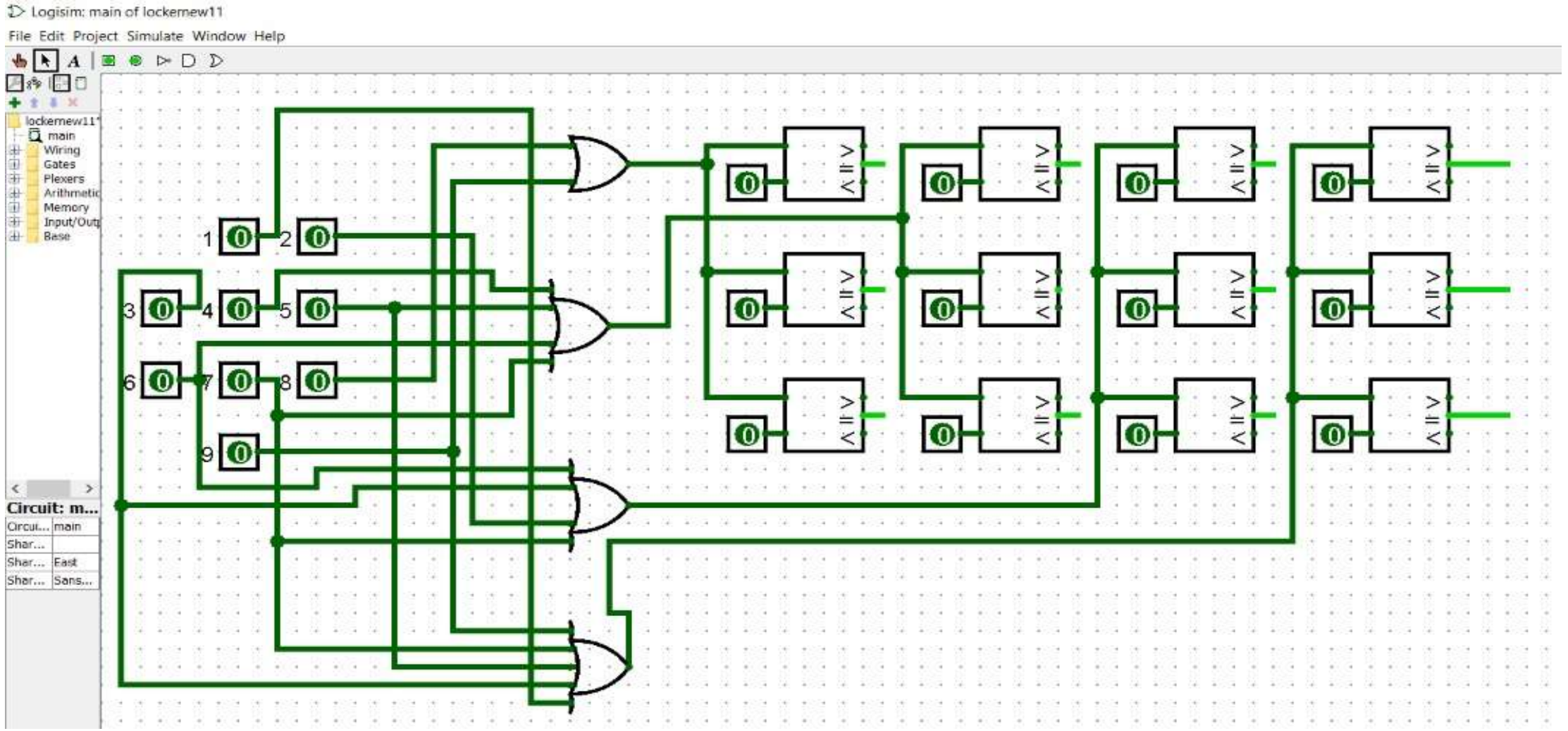
IMPLEMENTATION-FPGA KIT

BLOCK DIAGRAM:

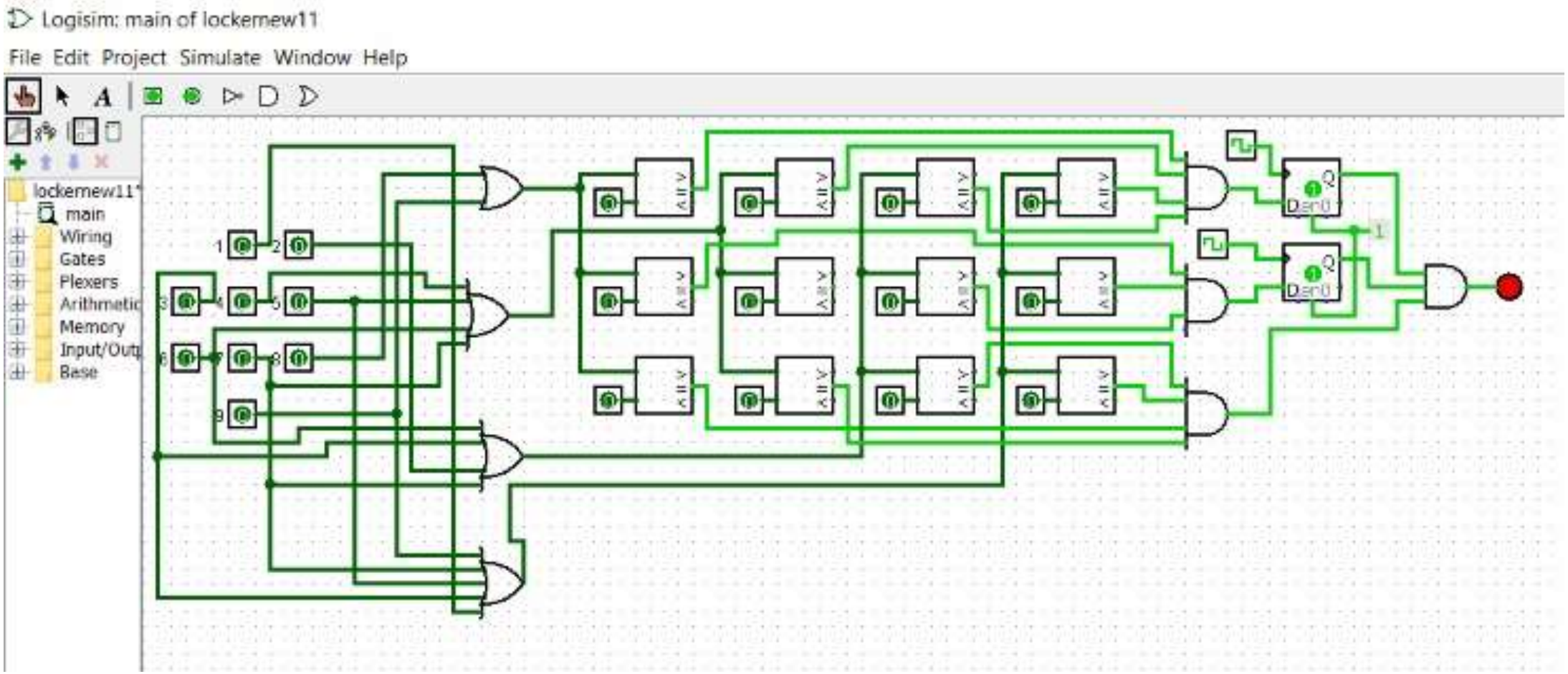


PROCEDURE

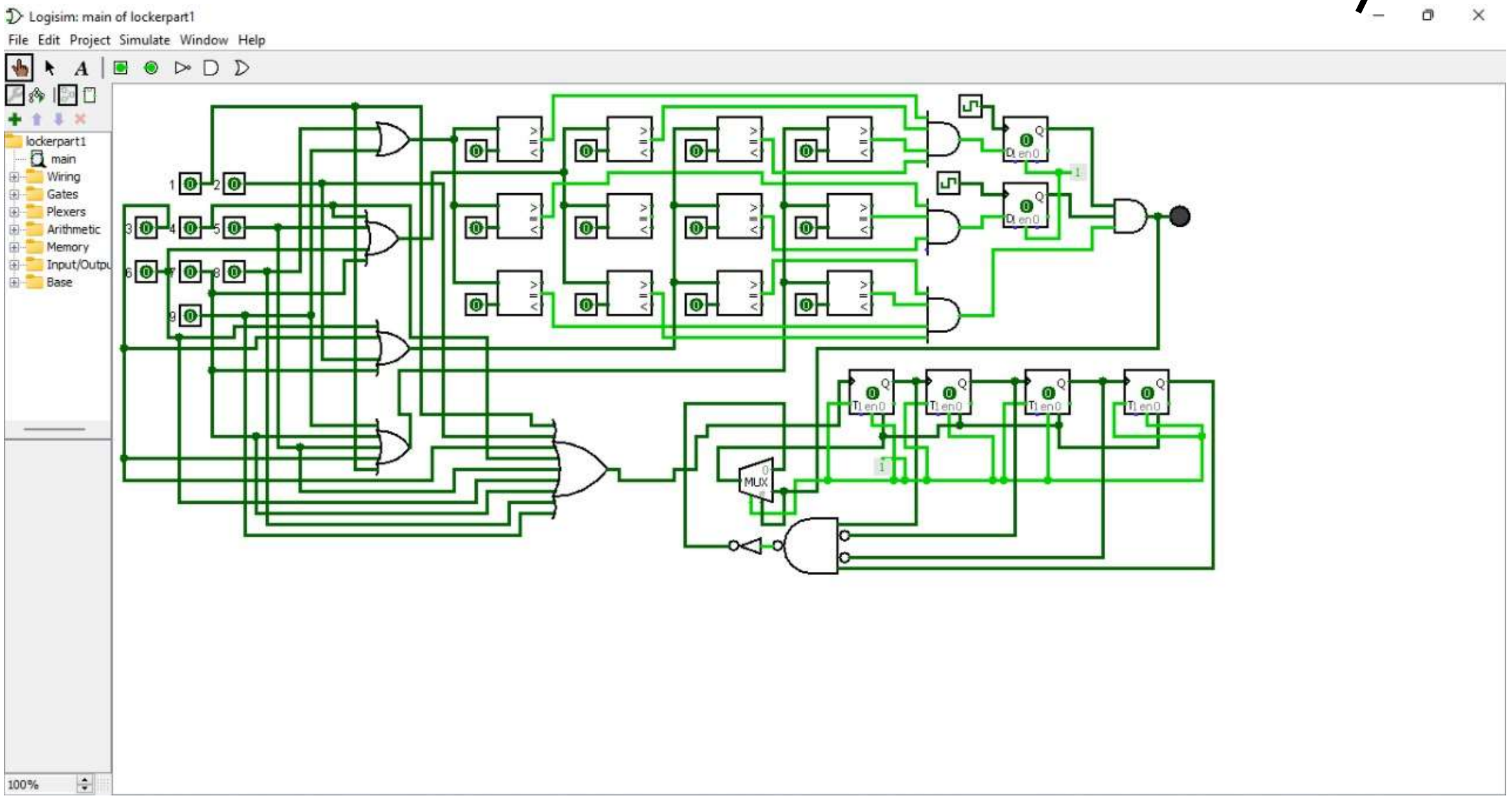
STEP 1:

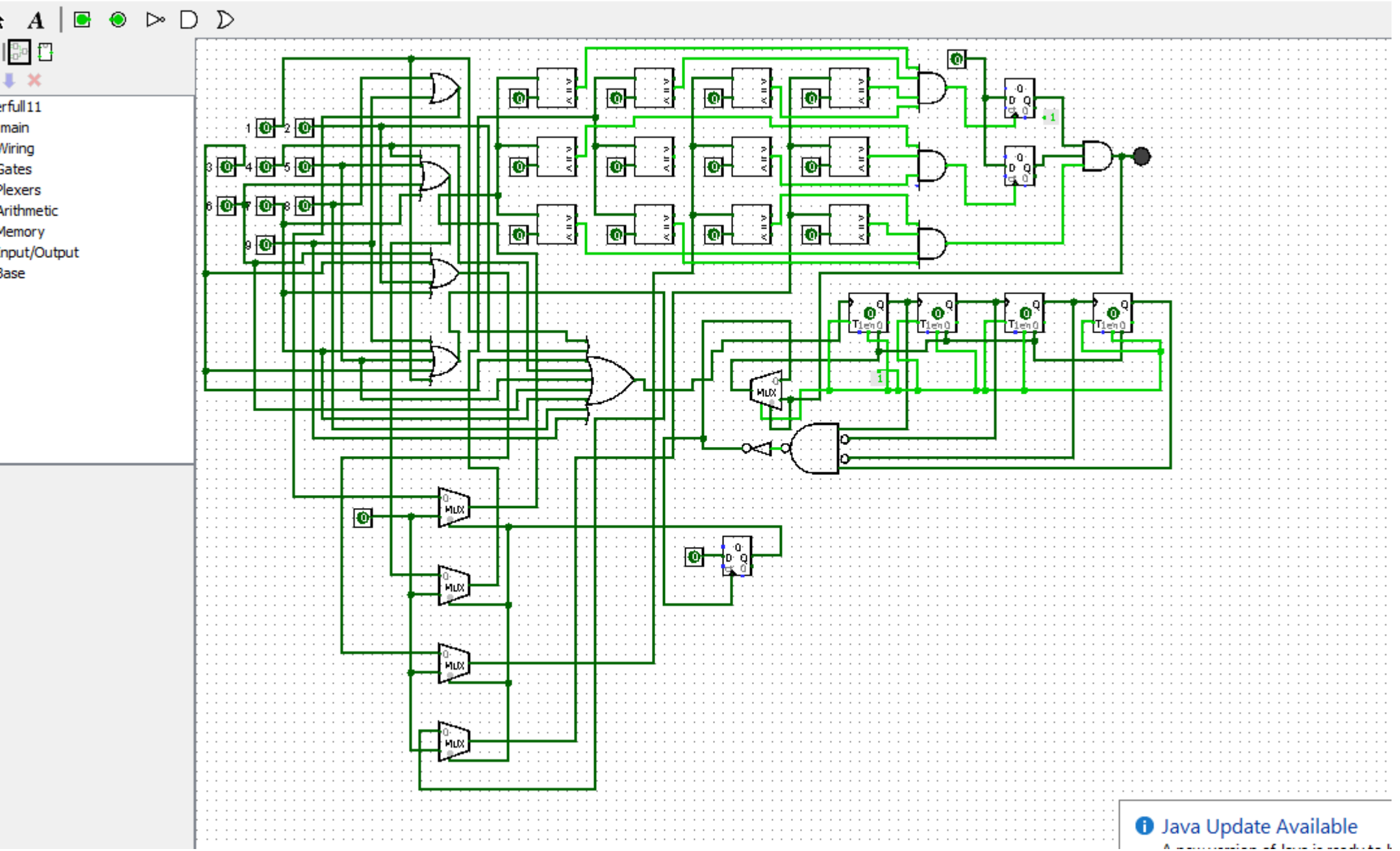


STEP 2:

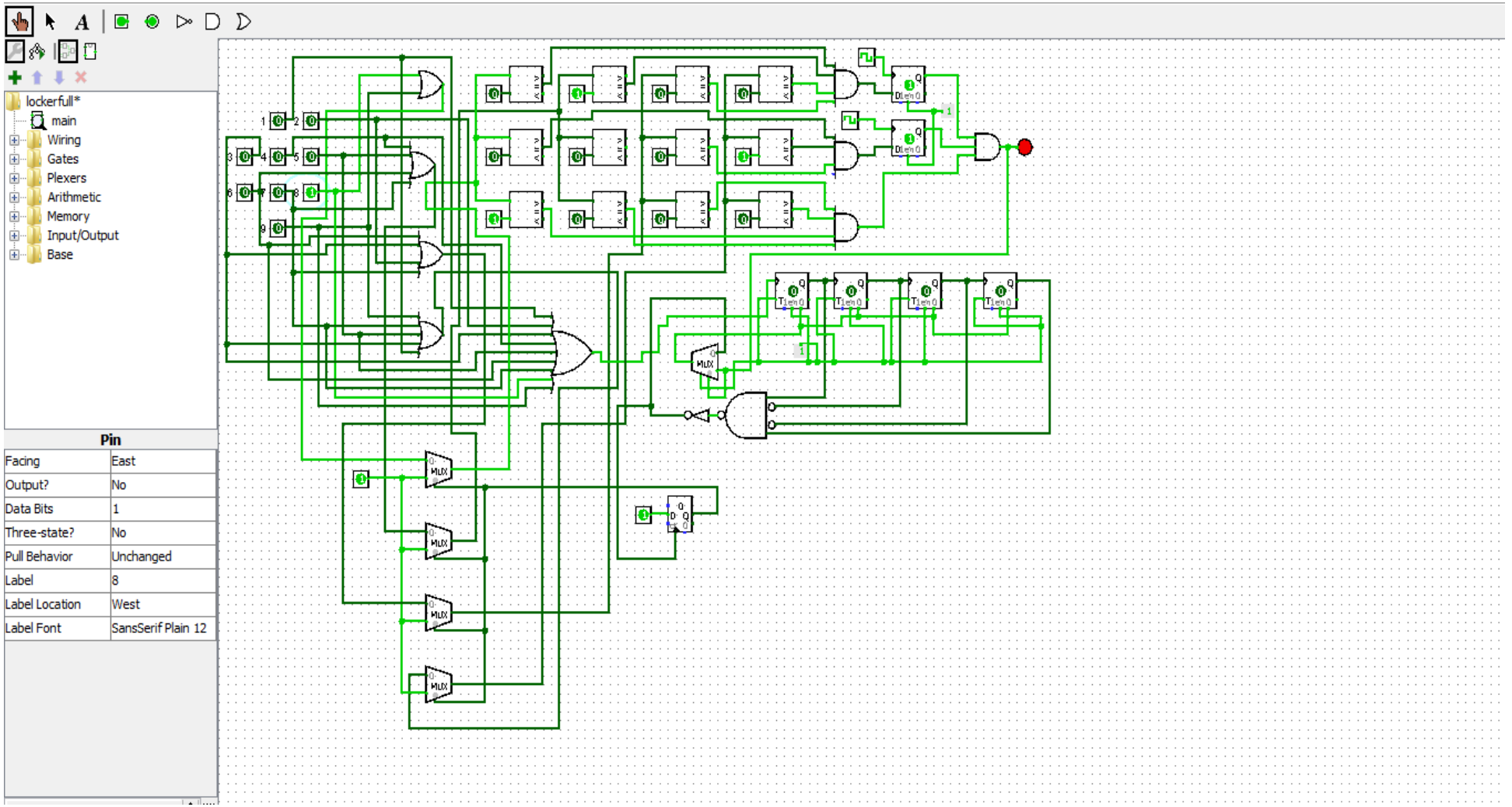

Logisim: main of lockemew11
File Edit Project Simulate Window Help
lockemew11*
main
Wiring
Gates
Plexers
Arithmetic
Memory
Input/Outp
Base

STEP 3:

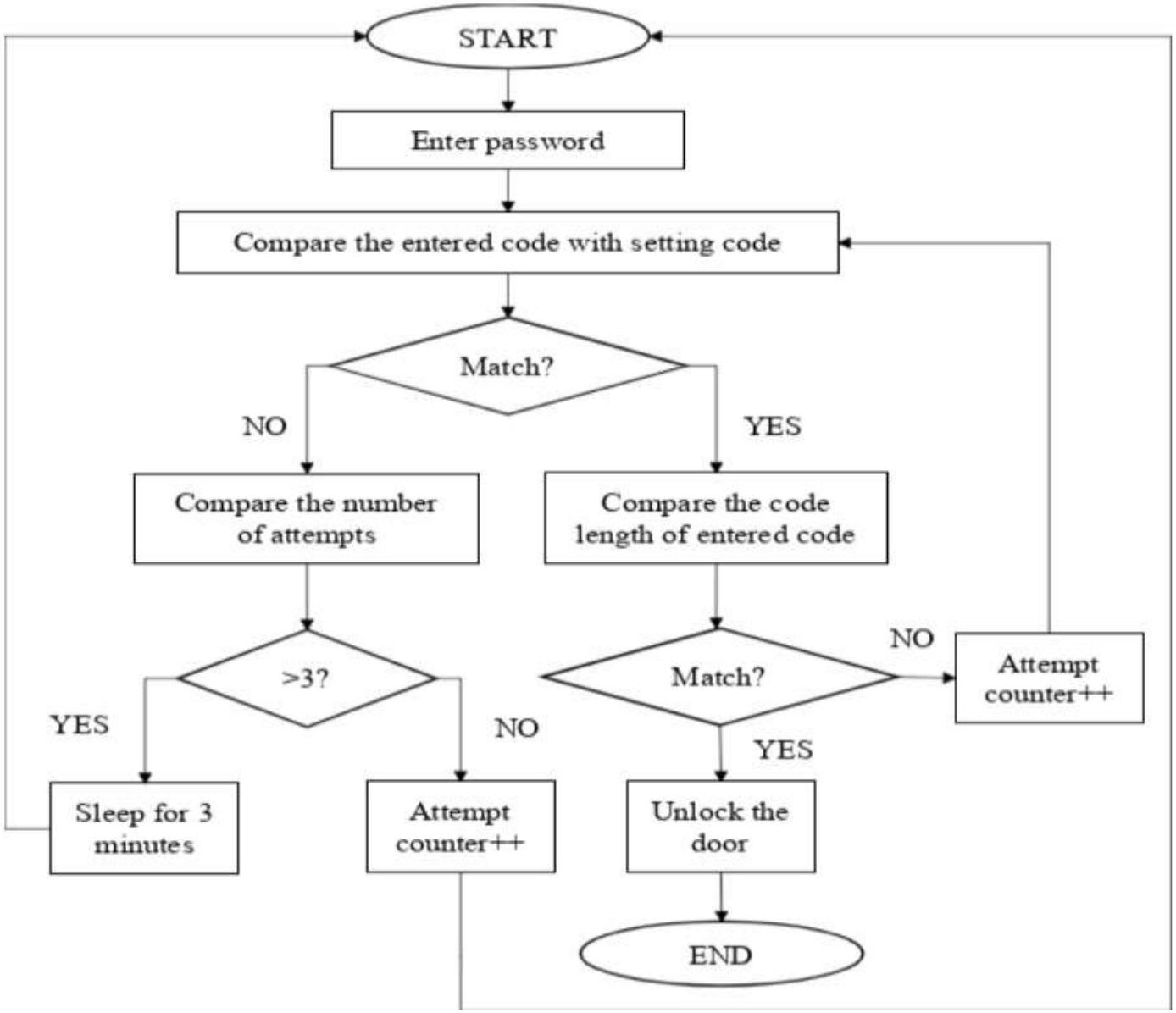

Logisim: main of lockerpart1
File Edit Project Simulate Window Help
lockerpart1
main
Wiring
Gates
Plexers
Arithmetic
Memory
Input/Outpu
Base
100%
MUX


erfull11
main
Wiring
Gates
Plexers
Arithmetic
Memory
Input/Output
Base
MUX
Java Update Available

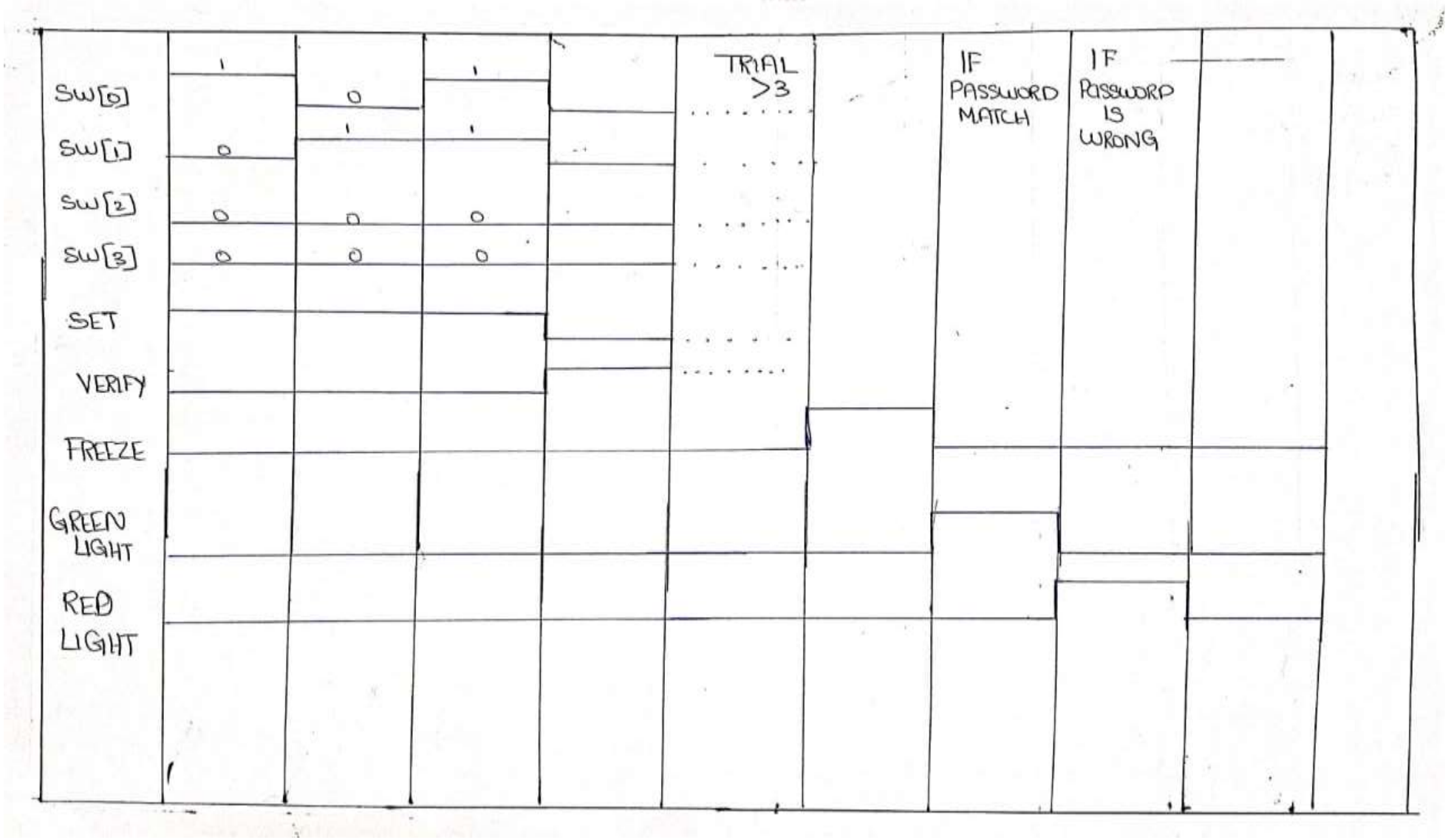
SCHEMATIC DIAGRAM :



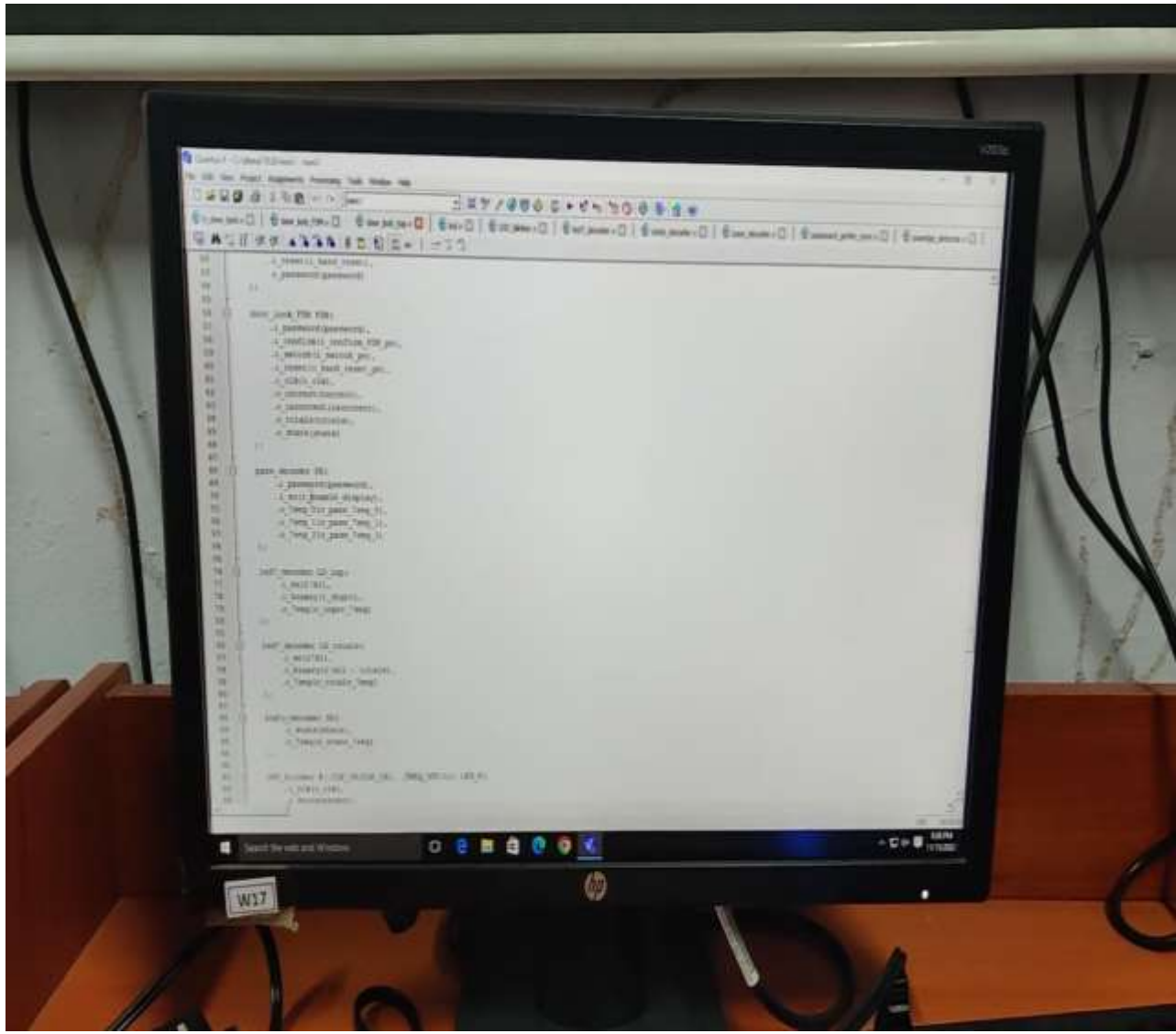
FLOW CHART :


START
Enter password
Compare the entered code with setting code
Match?
NO
YES
Compare the number of attempts
Compare the code length of entered code
>3?
Match?
NO
Attempt counter++
YES
NO
YES
Sleep for 3 minutes
Attempt counter++
Unlock the door
END

OUTPUT WAVEFORM :



VERILOG CODE IN QUARTUS-II SOFTWARE :



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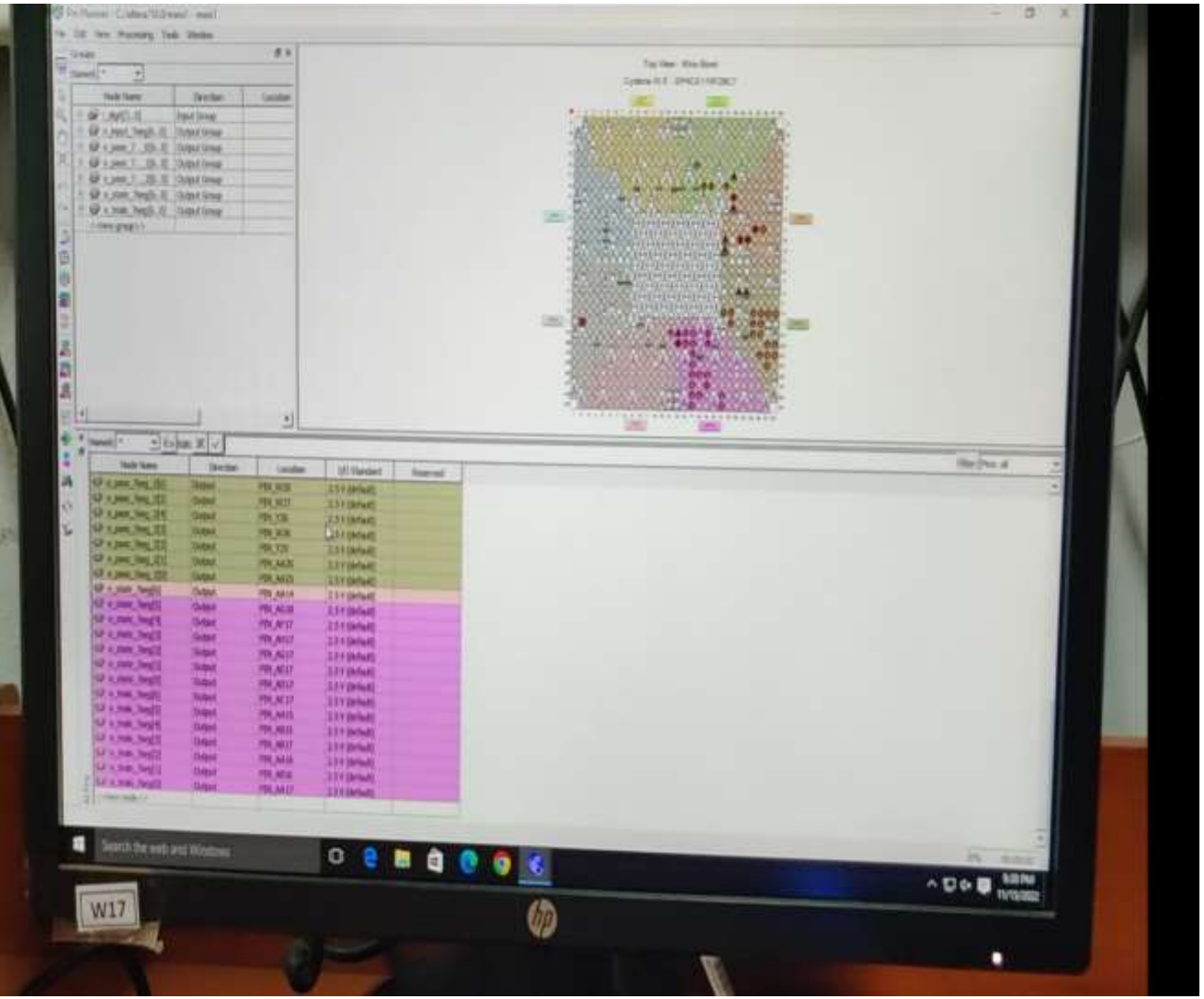
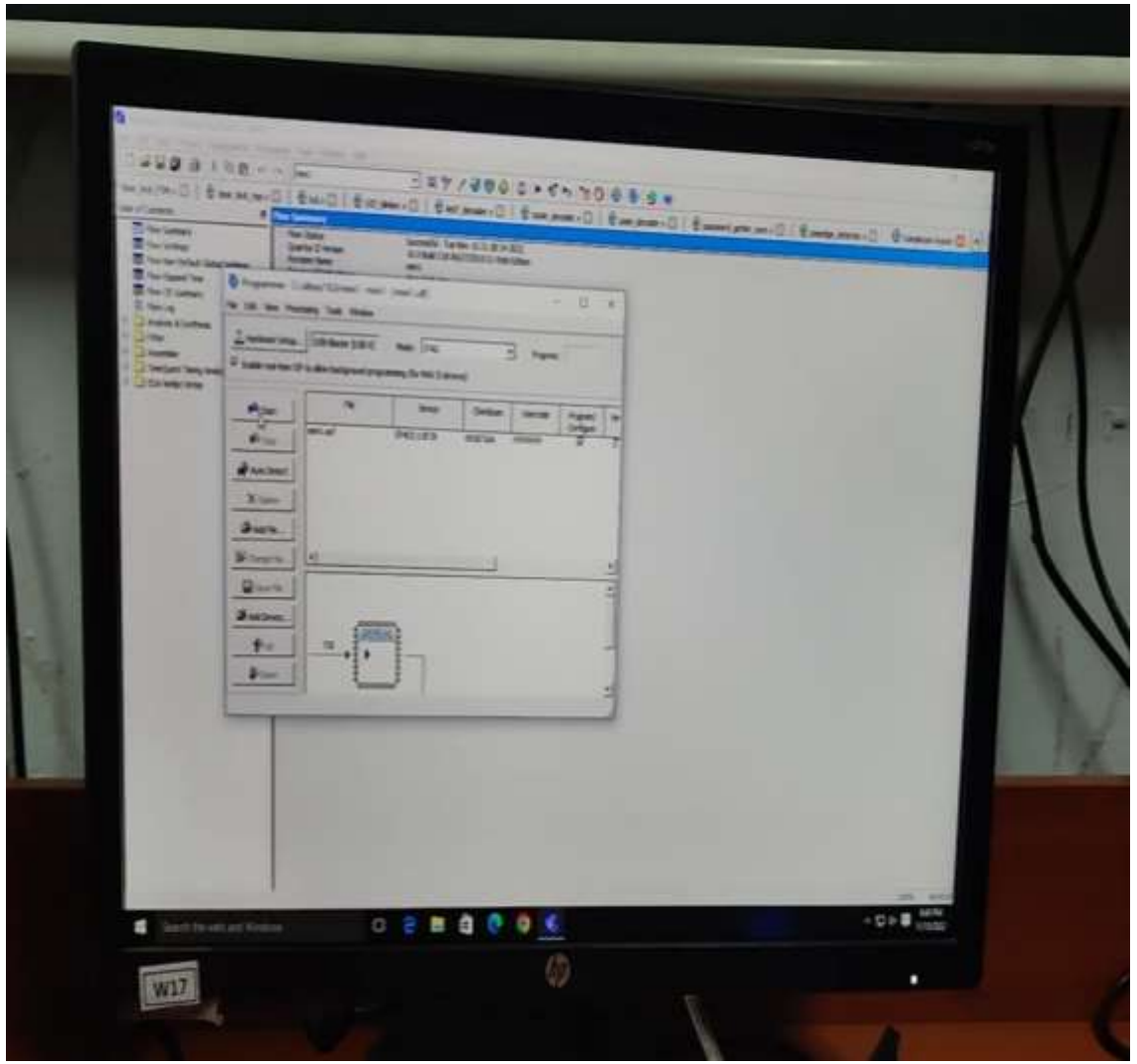
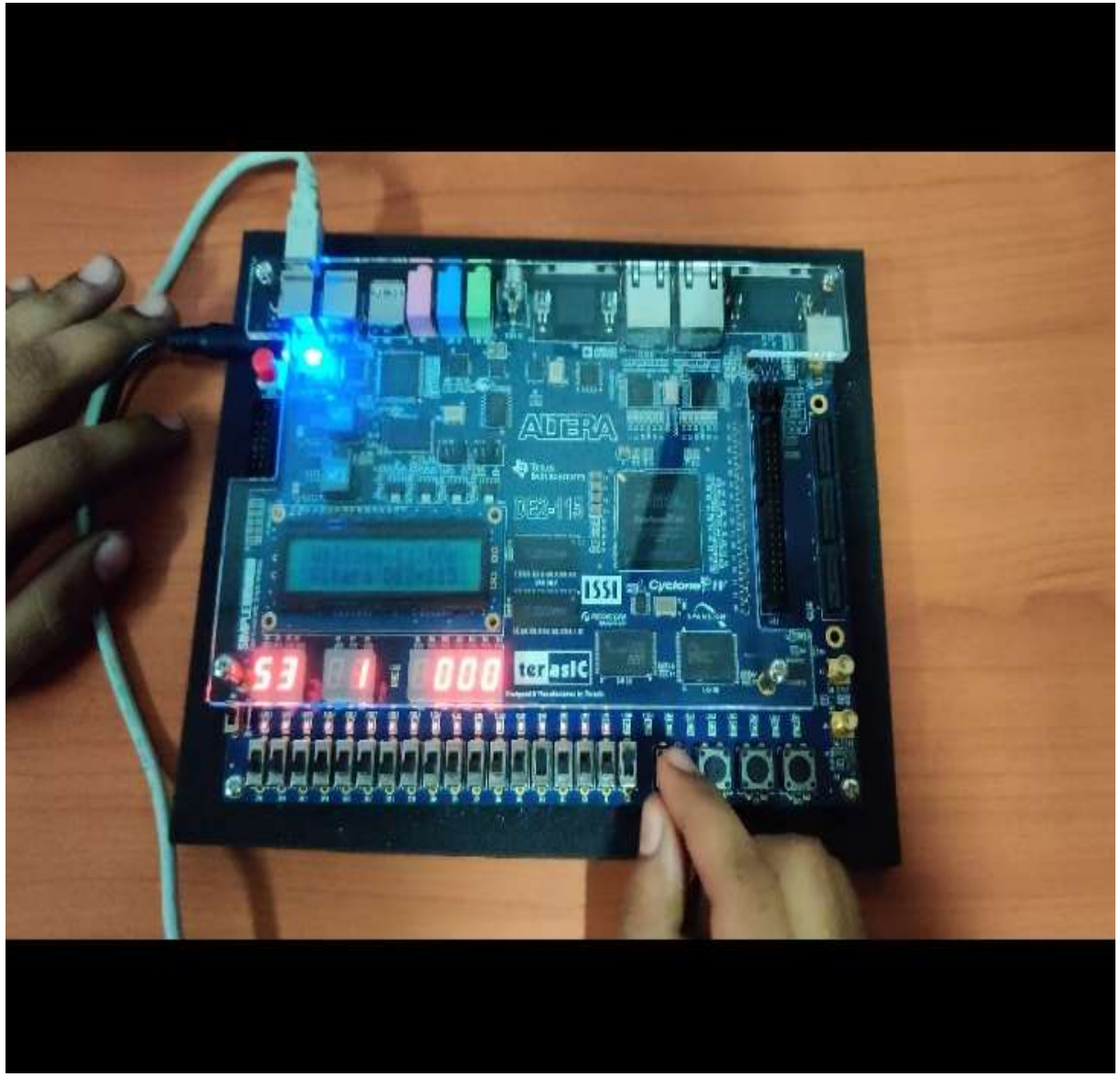
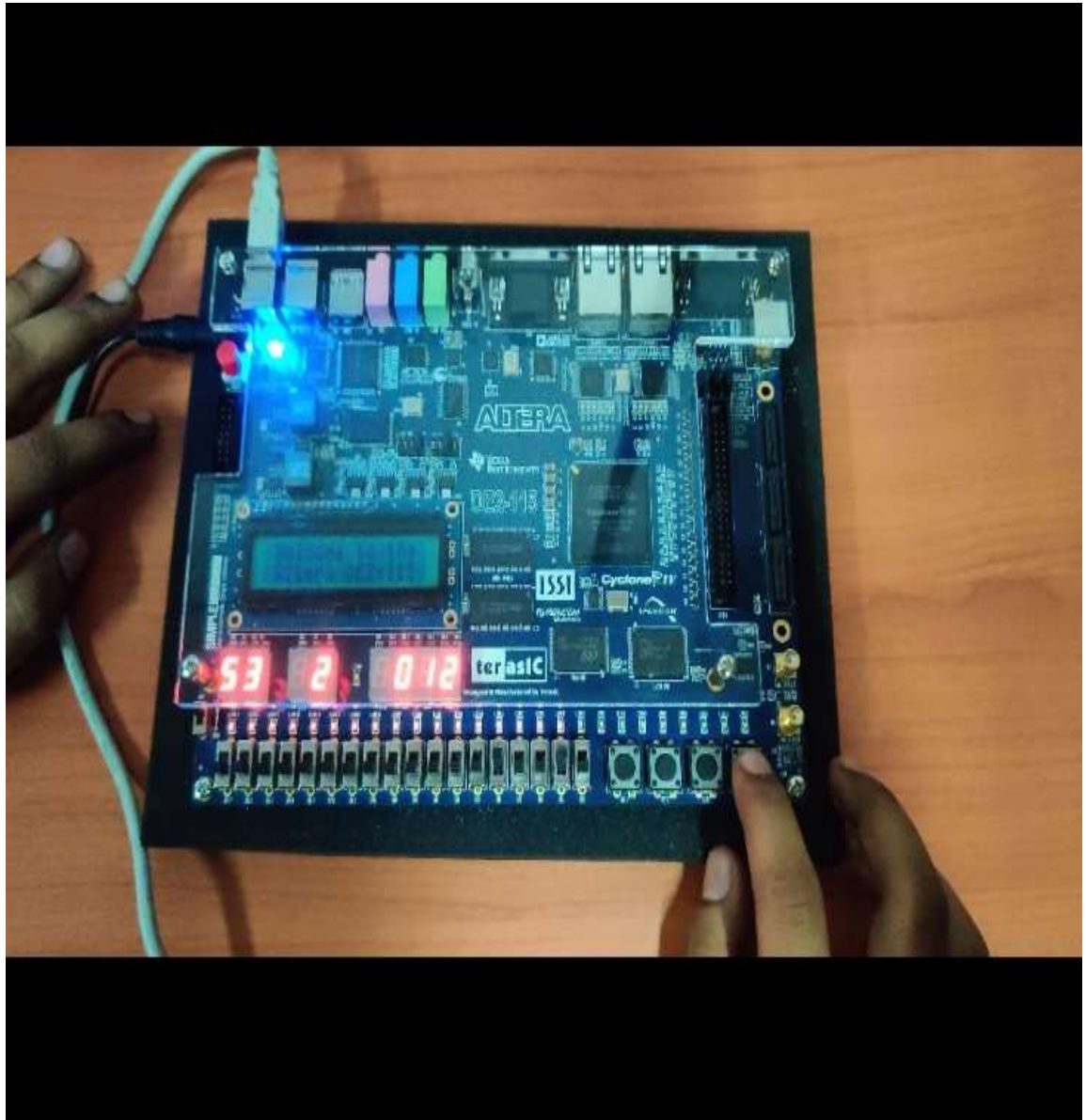




KIT IMPLEMENTATION IN FPGA KIT :





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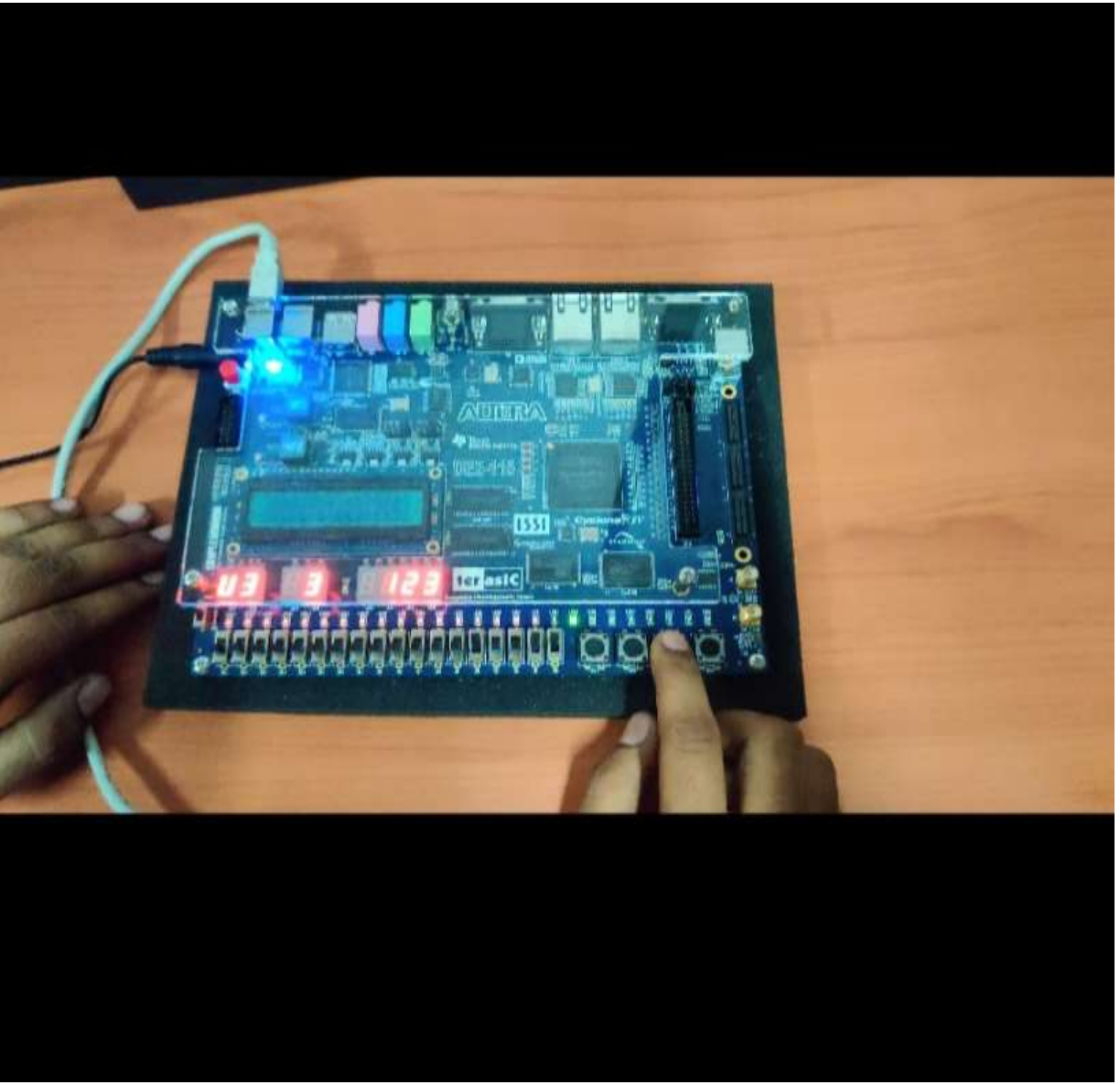

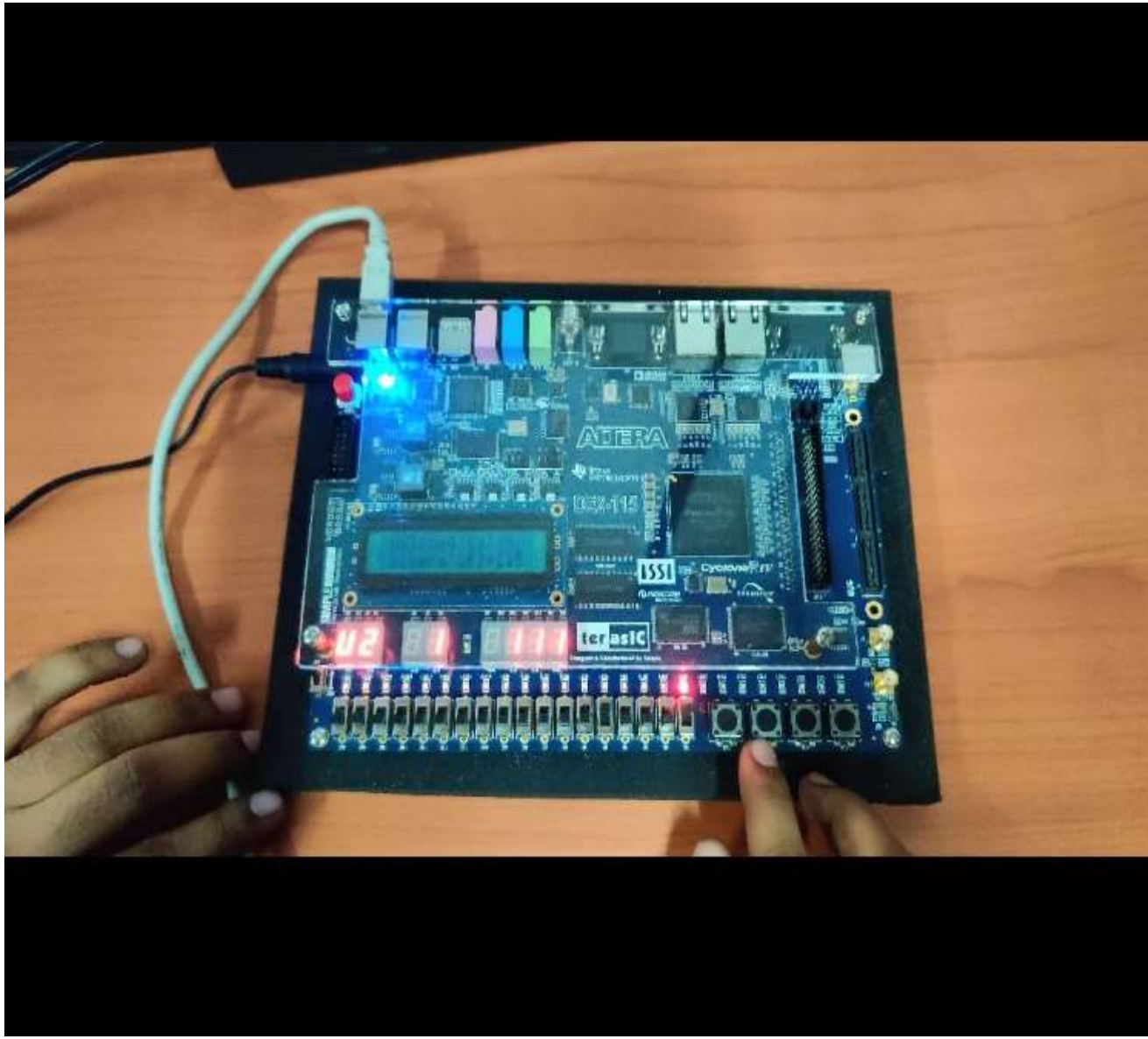

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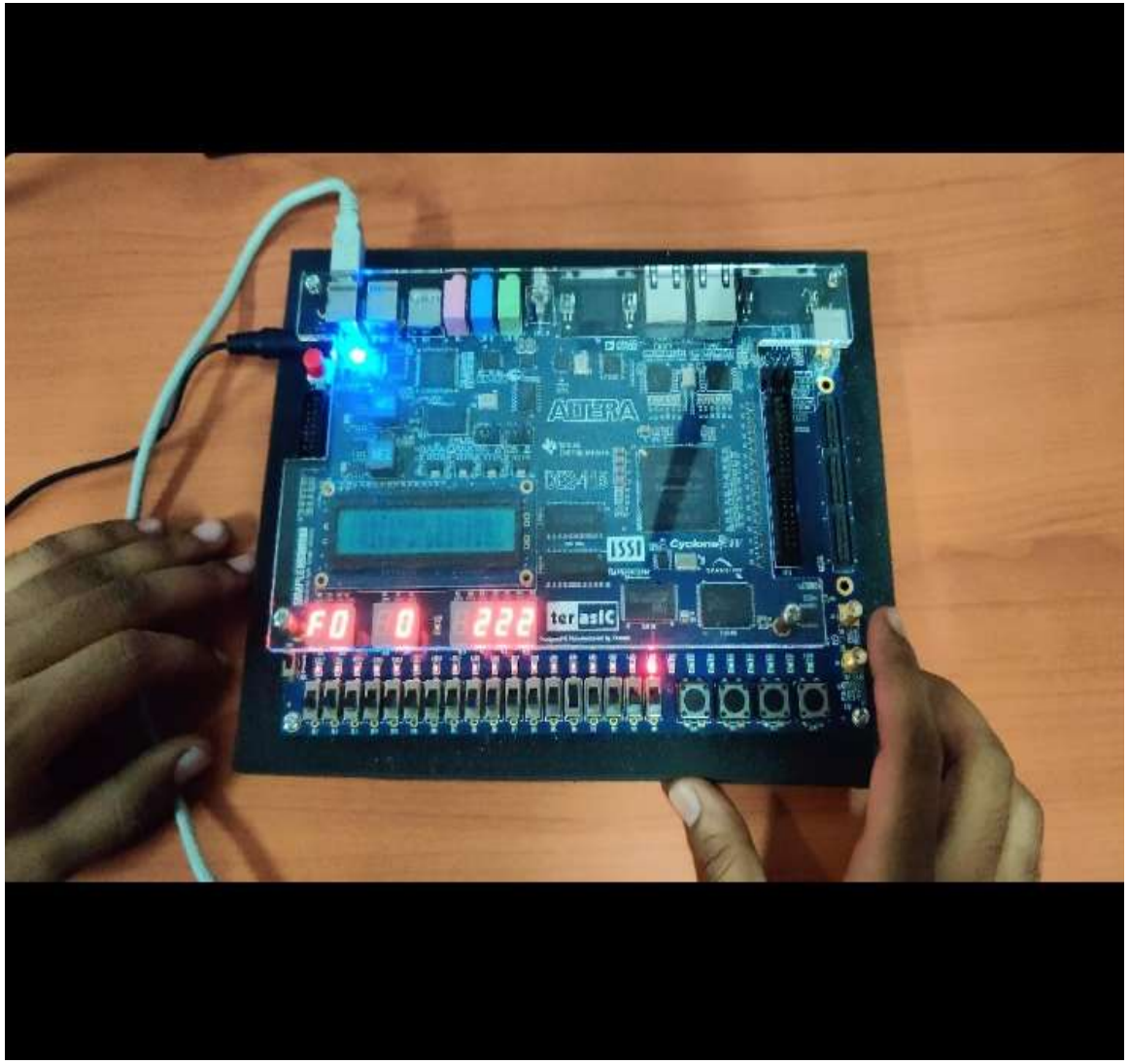

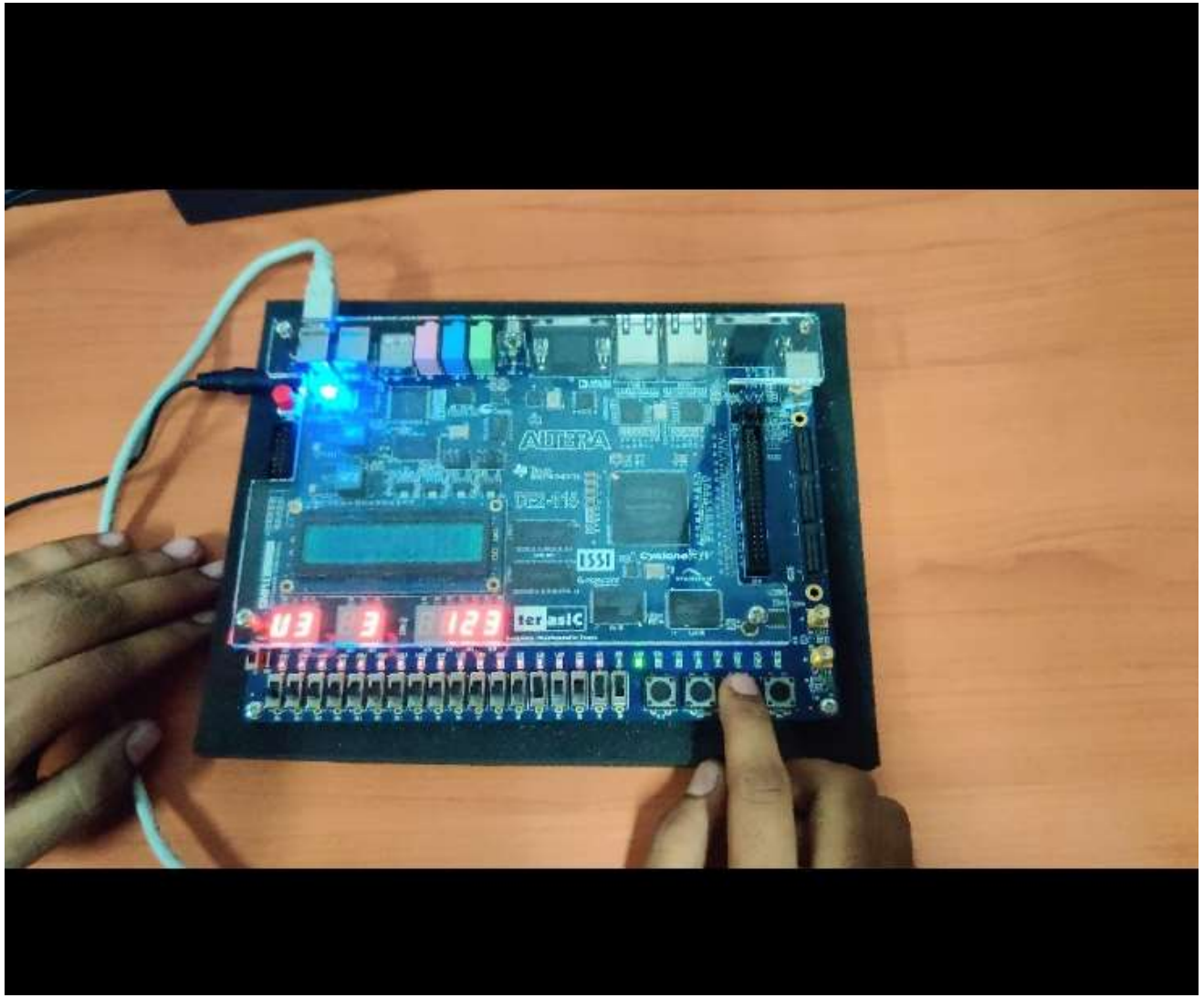

FPGA KIT DEMONSTRATION VIDEO:

https://drive.google.com/drive/folders/1bBPgs8-lQYcbvaz6iMaDZXlyYE9bi7g6

REFERENCE:

- **Digital Logic and Computer Design** - **M.Morris Mano** (2017 edition)
- **A Guide To Digital Design And Synthesis – Samir Palnitkar**(1996 edition)
- **System Verilog For Verification** – **Chris Spear & Greg Tumbush** (2006 edition)
- **Research Article** – **International Journal of Advance Technology and Engineering Exploration**

WEBSITES

- https://ieeexplore.ieee.org
- https://www.cornell.edu
- https://www.design-reuse.com
- https://www.edn.com

THANK YOU!