Communication Technical Engineering Department
1ˢᵗ Stage
Digital Logic- UOMU028021
Lab 2

Dr. Mohammed Fadhil
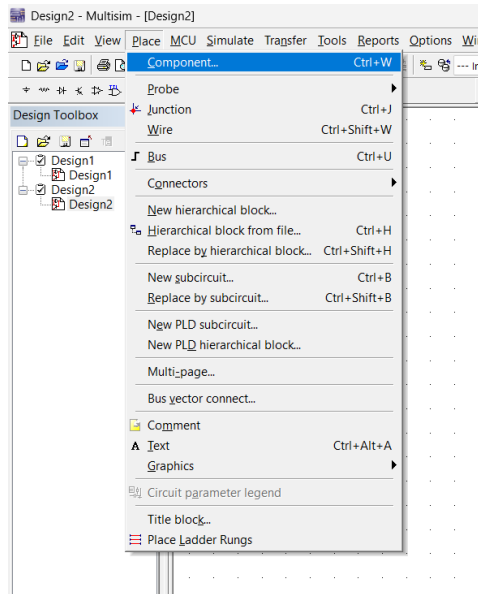
PhD in Computer Networks
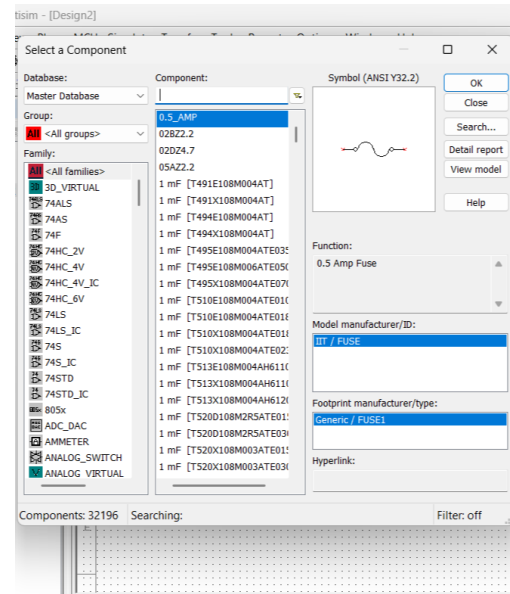
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Lab 2:
Implement the logic gates (AND, OR, & NOT) using diodes, transistors, and resistors
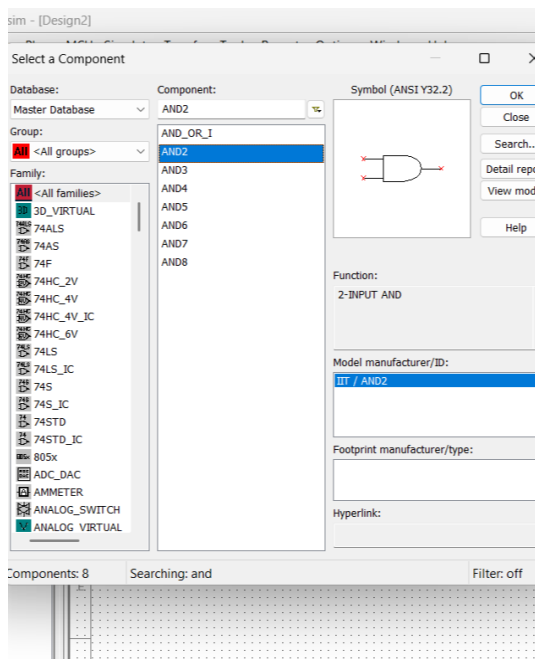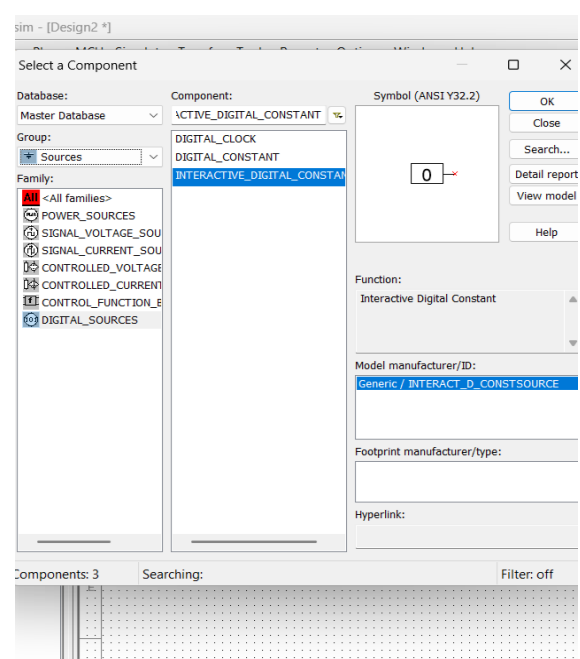
1)place + component

2)all groups

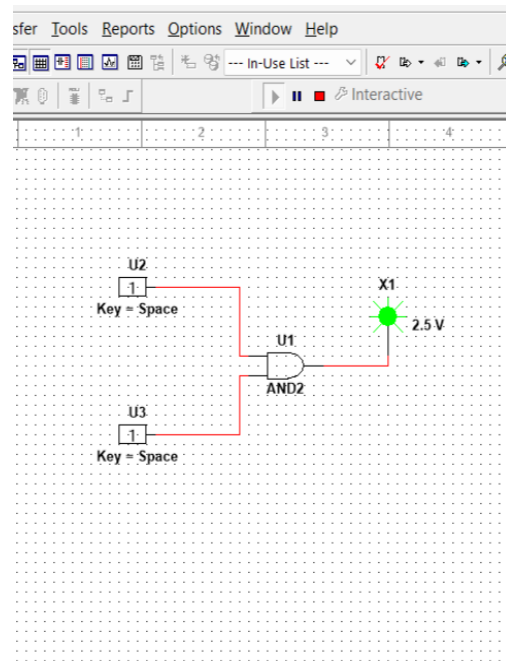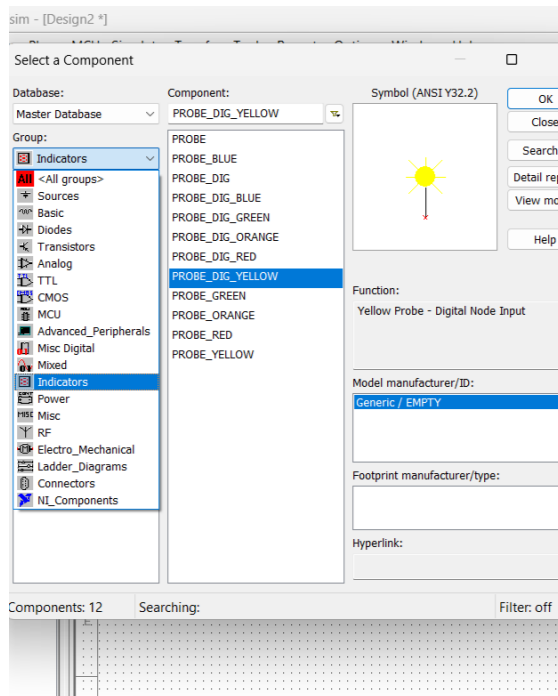
3)choose logic gates(AND-OR-NOT)

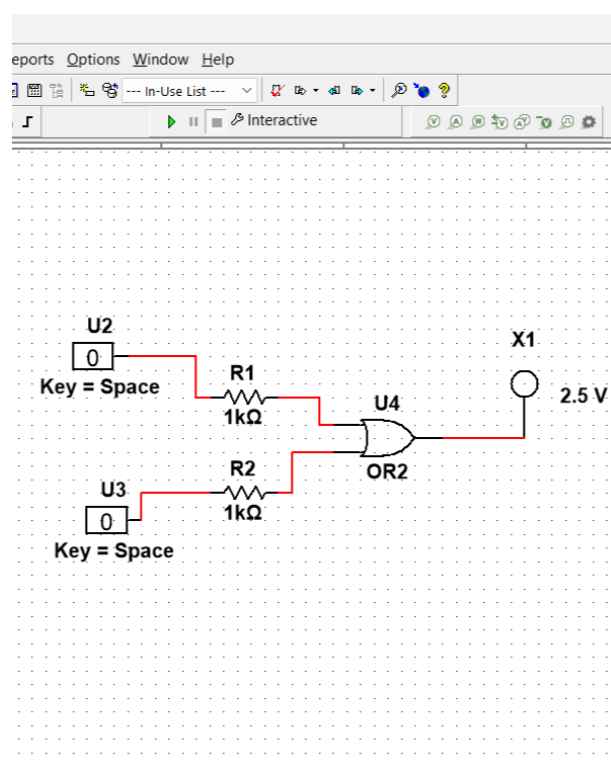
4)sources + digital-sources + interactive- digita-constant
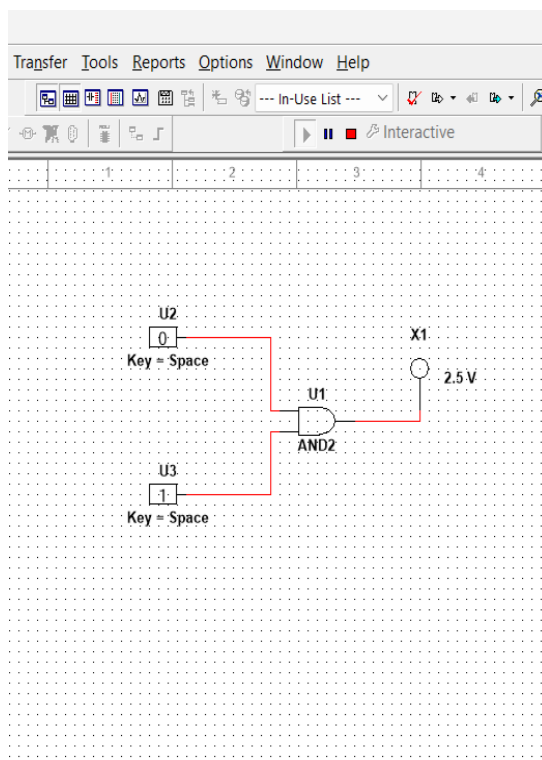
5) indicators + PROBE

6) run(ON)

7) run(OFF)

HW

Lab 3:
Verify the truth table of logic gates by using integrated circuits IC

Logic gates	IC number
AND	7408
OR	7432
NOT	7404
NAND	7400
NOR	7402
XOR	7486

IC Digital Logic Families

Digital IC gates are classified not only by their logic operation, but also by the specific logic-circuit family to which they belong. Each logic family has its own basic electronic circuit upon which more complex digital circuits and functions are developed.
The basic circuit in each family is either a NAND or a NOR gate. The electronic components employed in the construction of the basic circuit are usually used to name the logic family.
Many different logic families of digital ICs have been introduced commercially. The ones that have achieved widespread popularity are listed below:

TTL   Transistor-Transistor Logic
ECL   Emitter-Coupled Logic
MOS   Metal-Oxide Semiconductor
CMOS   Complementary Metal-Oxide Semiconductor
I2L   Integrated-injection Logic

HW

XOR gate is a special type of gat .It can be used in the half adder, full adder and subtractor .The exclusive-OR gate is abbreviated as XOR gate or sometime as X-OR gate. It has n input (n >= 2) and one output.

HW

A circuit which performs an OR operation It has input (n>=2) and one output