DLD LAB REPORT

Project Title:

IC TESTER

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- ## Main Objective

  The IC Tester aims to identify various types of ICs and can even check for faulty ICs in the circuit.

- ## Introduction

  The IC tester is developed to address the need for efficient debugging in electronic circuits. The tester comprises comprehensive testing capabilities to differentiate between the commonly used ICs, moreover, the IC tester is even capable of figuring out the faulty IC.

- ## Methodology

  We used the logic capabilities of basic logic gates, demultiplexers, encoder, multiplexers. The two slide switches are used to create the 4 combinations meanwhile the third slide switch sets the flip flop enable. The four combinations are sent through decoders, storing the combinations in each flip flop for four gates respectively. The bits are then compared either giving alike (passed to check the IC type) or unlike bits combinations (glowing red light, representing faulty IC). With the help of multiplexers, the IC type is then determined.

- ## Applications

  1. Debugging and troubleshooting

2. Failure Analysis
3. Reverse Engineering
4. Component Validation
5. Education and training
6. Research and development

- **Costing (In a proper Tabular Format)**

Components	Qty	Price (Approximately)
Breadboard	4	800
74_139	6	240
74_04	3	120
74_138	2	80
74_08	2	80
74_86	2	80
74_32	1	40
74_266	2	120
74_75	4	260
LED	7	20
Wire	18 feet	270
Battery	2	200
Voltage Regulator	2	60
Slide switches	3	30
	TOTAL:	**2400**

- ## Conclusion

  The IC tester proved to be a comprehensive project where the theoretical concepts learned, and hands-on skills we acquired both were effectively implemented. The formulated logic diagram aimed to cover maximum course content in logic implementation and the practical experience gained proved to be worthwhile in implementing it in hardware. For further improvement the logic can be revised to produce the results without adjusting the slide switches making the IC tester user friendly.