

TITLE : Design and Implementation of Majority and Minority Circuits Using CMOS and RTL Logic.

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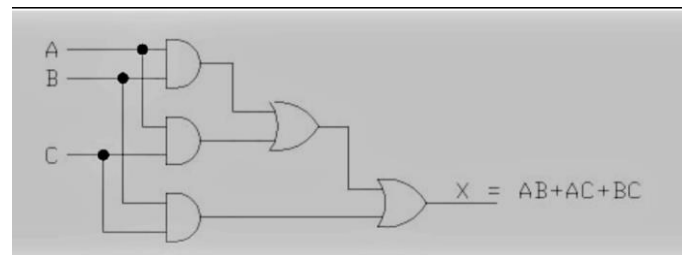
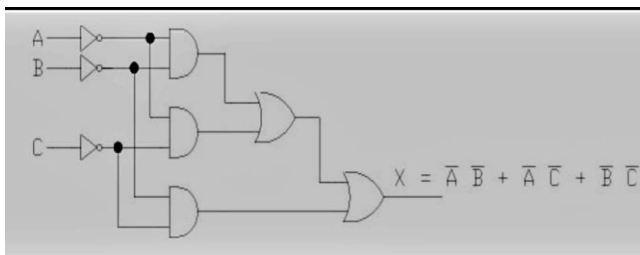
PROBLEM STATEMENT:

Design and implement majority and minority circuits using CMOS and RTL logic to optimize power, area, and speed. Compare performance metrics like power consumption, delay, and transistor count.

ABSTRACT:

This project focuses on the design and implementation of majority and minority logic circuits using CMOS and Resistor-Transistor Logic (RTL) methodologies. The circuits are optimized for power consumption, area, and delay to ensure efficiency in digital systems. CMOS logic is employed for its low power and high-speed characteristics, while RTL design utilizes resistor-transistor configurations to provide simplicity and cost-effectiveness. Performance metrics such as power consumption, propagation delay, and transistor count are analyzed and compared to highlight the strengths and trade-offs of each implementation. The results demonstrate the feasibility and efficiency of these designs for real-world applications in decision-making systems and digital computing.

PROPOSED CIRCUIT:



PUBLICATIONS:

1.TITLE : Rediscovering Majority Logic in the Post-CMOS Era: A Perspective from In-Memory Computing

AUTHOR : Chen, P.-Y., & Yu, S.

VOLUME : Journal of Low Power Electronics and Applications, Volume 10, Issue 3, 2020.

REFERENCE LINK: <https://www.mdpi.com/2079-9268/10/3/28>

2.TITLE : Majority logic synthesis

AUTHOR : Soeken, M., & De Micheli, G.

VOLUME : Proceedings of the 2018 Design, Automation & Test in Europe Conference & Exhibition (DATE), 2018

REFERENCE LINK: https://www.researchgate.net/publication/328777265_Majority_logic_synthesis