Abstract

Objective of this paper is to present historiography of logic switching circuits. The research mainly focuses on chronological development and application of logic in the field of electronic and computer applications. This paper briefly discussed on the basic needs of logic synthesis and also discuss few interesting facts and design consideration regarding logic synthesis. It also enhances student’s deep understanding of different logic function minimization technique during a lecture and practical implementation.

References

3. Peirce, Charles Sanders. "On the algebra of logic: A contribution to the philosophy of
Arts and Sciences, John Wilson and Son (1885), 303-307.
6. Sheffer, Henry Maurice, "A set of five independent postulates for Boolean algebras, with
application to logical constants." in Transactions of the American Mathematical Society (1913),
Vol. 14, No. 4, 481-488.
computer.com/ModernComputer/thinkers/Stanhope.html last seen July (2015).
Indiana University Press.
http://history-computer.com/ModernComputer/thinkers/Peirce.html last seen (July 2015).
(1891).
11. Jess, Jochen AG."Designing electronic engines with electronic engines: 40 years of
bootstrapping of a technology upon itself." in IEEE Transactions on Computer-Aided Design of
12. C.E. Shannon, “A symbolic analysis of relay and switching circuits,” in Trans. of the
Transactions of the Communication and Electronics, American Institute of Electrical Engineers,
Part I: Nov. (1953), Vol.72, No.5, 593-599.
of the 33rd annual Design Automation Conference, DAC ‘96 (1996),629-634.doi:
10.1109/DAC.1996.545651.
17. S. Roy and C.T. Bhunia, “Constraints Analysis for Minimization of Multiple Inputs Logic
Programming,” in Elsevier Proc. of International Conference on Signal and Speech Processing
(ICSSP-14), Aug. (2014), 61-64, Kollam, India.
18. K. P. Parker and E. J. McCluskey, “Probabilistic treatment of general combinational
20. S.M. Nowick and D.L. Dill. “Exact two-level minimization of hazard-free logic with
multiple-input changes," IEEE Trans. Computer-Aided Design of Integrated Circuits and
22. Jim Stiles, “Power Dissipation," The Univ. of


40. Randal E Bryant, "Graph-based algorithms for Boolean function manipulation.", IEEE Transactions on Computers, (1986), Vol.100, no. 8, 677-691.
Index Terms

Computer Science  Circuits and Systems

Keywords

Boolean function, Combinational logic, Digital electronics, Maxterm, Minimization, Minterms, Multiple inputs, Switching circuit simplification.