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Automated problem and solution generation software for computer-aided instruction in elementary linear circuit analysis

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution

11

Scopus
citations

Abstract

Initial progress is described on the development of a software engine capable of generating and solving textbook-like problems of randomly selected topologies and element values that are suitable for use in courses on elementary linear circuit analysis. The circuit generation algorithms are discussed in detail, including the criteria that define an "acceptable" circuit of the type typically used for this purpose. The operation of the working prototype is illustrated, showing automated problem generation, node and mesh analysis, and combination of series and parallel elements. Various graphical features are available to support student understanding, and an interactive exercise in identifying series and parallel elements is provided. When fully developed this engine will be incorporated into a tutorial system designed to supplement conventional instructional approaches.

ORIGINAL LANGUAGE	English (US)
TITLE OF HOST PUBLICATION	119th ASEE Annual Conference and Exposition
PUBLISHER	American Society for Engineering Education
ISBN (PRINT)	9780878232413
STATE	Published - 2012
EVENT	119th ASEE Annual Conference and Exposition - San Antonio, TX, United States Duration: Jun 10 2012 → Jun 13 2012

Other

OTHER	119th ASEE Annual Conference and Exposition
COUNTRY	United States
CITY	San Antonio, TX
PERIOD	6/10/12 → 6/13/12

ASJC Scopus subject areas

Engineering(all)







Access to Document

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 Students ENGINEERING & MATERIALS SCIENCE	 Topology ENGINEERING & MATERIALS SCIENCE

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Whitlatch, C. D., Wang, Q., & Skromme, B. (2012). Automated problem and solution generation software for computer-aided instruction in elementary linear circuit analysis. In *119th ASEE Annual Conference and Exposition* American Society for Engineering Education.

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Computer-Aided Instruction. Related terms: Computer Science. 2.3.2 Computer-Assisted Instruction. CAI is the use of specific software programs on computers in the classroom.¹⁴ Frequently these programs are individualized or self-paced in order to accommodate differences in student ability or speed. In a large randomized study, the U.S. Department of Education and Mathematica Policy Research (2007; 2009) evaluated six reading and four math software products for students in elementary, middle, and high school. Randomization was across teachers within the same schools. In an analysis of randomized interventions (both technological and nontechnological) in developing countries, Kremer et al. Tutorial on solving linear programming word problems and applications with two variables. Examples and word problems with detailed solutions are presented. We need to select the nearest integers to $x = 57.14$ and $y = 28.57$ that are satisfy all constraints and give a maximum profit $x = 57$ and $y = 29$ do not satisfy all constraints $x = 57$ and $y = 28$ satisfy all constraints Profit = $400 \times 57 + 700 \times 28 = 42400$, which is maximum. Earth science. Engineering. YES! Now is the time to redefine your true self using Slader's Engineering Circuit Analysis answers. Shed the societal and cultural narratives holding you back and let step-by-step Engineering Circuit Analysis textbook solutions reorient your old paradigms. NOW is the time to make today the first day of the rest of your life. Unlock your Engineering Circuit Analysis PDF (Profound Dynamic Fulfillment) today.