Reform and Practice of Data-Driven C Language Teaching Based on Computational Thinking

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Abstract

The advancement of big data and artificial intelligence technologies has bestowed new significance and forms upon the application of computational thinking in education. This article initially reviews the recent educational application models based on computational thinking put forward by colleagues both domestically and internationally. It utilizes statistical analysis to investigate C language teaching in several domestic undergraduate institutions, identifying the deficiencies of current educational approaches. Subsequently, it proposes a "data-driven C language curriculum" training model aimed at fostering "interest, ability, and effectiveness." Finally, the new model is implemented in the C language teaching activities of certain majors for the 2023 cohort at the school. A comparative analysis of the learning outcome data between the 2022 and 2023 cohorts indicates that the data-driven method based on computational thinking effectively stimulates students' interest in learning, enhances their comprehensive application capabilities, and significantly improves learning outcomes.

Keywords

Computational Thinking, Data-Driven, Model, Analysis, Practice