

A Study on Smart contract for efficient learner problem recommendation in distance education environment.

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- **Abstract:** For learner's self-directed distance education, the need for Problem Recommendation learning guides reflecting accurate learning patterns based on learner data is increasing. In this paper, based on blockchain based smart contract technology, various learner data generated in the distance education environment were collected and accurately managed to analyze Problem Recommendation patterns for individual learners and gave weights for each learning situation. It is possible to present the optimal Problem Recommendation path when individual learners solve problems based on the assigned weights for each learning situation. To evaluate the performance of this study, the learning satisfaction with the existing similar learning environment, the usefulness of the Problem Recommendation guide, and the processing speed of learner data were analyzed. As a result, compared to the existing learning environment, the proposed learning environment improved learning satisfaction by 19% or more, and it was confirmed that the learning data processing speed was improved by more than 20%.
- **Keywords:** Smart Contract, Blockchain, Ethereum, Problem Recommendation, distance education