

Board Game Supporting Learning Prim's Algorithm and Dijkstra's Algorithm

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Abstract

The concept of minimum spanning tree algorithms in data structure is difficult for students to learn and to imagine without practice. Usually learners need to diagram the spanning trees with pen to realize how the minimum spanning tree algorithm works. In this paper, we introduced a competitive board game to motivate students to learn the concept of minimum spanning tree algorithms. We discussed the reasons about why it is beneficial to combine graph theories and board game for the Dijkstra and Prim minimum spanning tree theories. In the experimental results, we demonstrated the board game and examined the learning feedback for the mentioned two graph theories, and further summarized the advantages brought by combining the graph theories with board game.

Keyword : Game based Learning, board game