Mind Plateau: A Collaborative Mobile Application and Procedural Puzzle Generation for Mind Games Education

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Mind games are puzzles that can be solved using clues and cognitive skills and their benefits in cognitive development have been demonstrated in experimental studies. In addition, an increasing number of individuals and educational institutions are investing in curricula development for mind games, resulting in numerous books and digital materials. On the other hand, mind games education is generally conducted in classrooms and printed materials are preferred. Creating these materials using traditional methods limits the number of puzzles and thus makes them inconvenient to access and limits their educational functions. Mind Plateau aims to overcome these problems by developing a novel digital learning platform for mind games. In this project, procedural puzzle generation algorithms were developed to generate an almost unlimited number of puzzles with varying difficulties. Generative procedures were tested to quantify runtime performance. A mobile application that communicates through a REST-API was developed to create a full-fledged digital platform. In Mind Plateau, there are hands-on tutorials and statistics for personal training, as well as synchronous communication to support online group lectures. Mind Plateau has been tested by students and instructors and its usability evaluated through user surveys. Participant progress which was analyzed over time has demonstrated significant improvement of solution speeds. Moreover, the online teaching feature has proven to be effective through user studies conducted in this research. In summary, Mind Plateau is a collaborative mobile platform which aims to popularize mind games around the world with multilingual support, convenient access to mind games and many educational features.

Awards Won:
Fourth Award of $500