Universiti Teknologi MARA

Finding Selection Sets for LL (1) Grammar with Game-Based Learning

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ABSTRACT

LL1 Grammar is a sub-topic in Topic Four: Syntax & Semantic Analysis based on syllabus CSC569 Principle of Compiler. In order to find the Selection Sets of LL1 grammar, students need to solve twelve steps of operations. However, for some students, they face difficulties to memorize these twelve steps to find the Selection Sets. Therefore, the goal of the developed game is to help them understand all steps in LL1 Grammar and to increase their enjoyment while learning. ADDIE method has been chosen as the methodology for this project because it is one of the most common models used to create an effective instructional design. Game elements such as challenge, rule, reward, theme, and progress are employed in the game. The platform chosen for the game is a stand-alone on PC. The design of the game is Role Playing Game where each of the steps has been translated into twelve cities and the player needs to travel to all of the cities in the correct order to solve the mission that has been given to them. Usability testing for the developed game involves 22 respondents from CSC569 Principles of Compiler students. The result of the test shows a positive result as most of the respondents enjoys learning using the game. Most of the respondents are satisfied with the content of the game. While expecting the negative reviews on the length of time it takes, the opposite thing happens. They really enjoy the challenging part of the game. The game itself is lengthy because they need to travel to the twelve cities. However, the majority of the respondents requested more missions. Further enhancement can be added to the game such as add online features to the game. To conclude, the game has completely developed and all the objectives have been achieved.

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