Contribution ID: **55** Type: **Paper presentation**

Gamification of the Learning Process for Acquiring Logical Thinking in Programming

Friday 20 September 2024 14:00 (20 minutes)

The process of learning programming is essential in developing children's algorithmic and rational thinking. However, there is often reluctance due to a general misunderstanding of basic concepts and a lack of desire to practice.
This article focuses on describing existing solutions based on educational games and proposes a different implementation. On one hand, the proposal is based on creating an engaging and attractive web environment that facilitates distance learning, where children from grades 2-6 can learn through the JavaScript language. On the other hand, the Cellular Automata algorithm is used to generate the player's map based on predefined rules dedicated to each programming concept. Security measures, including Abstract Syntax Tree (AST) analysis, are implemented to protect the solution from potentially receiving malicious code. The project demonstrates that the proposed system successfully balances educational and entertainment aspects, making programming accessible and enjoyable. The final goal is to use game-specific elements such as competition, rewards, and constant feedback to stimulate engagement in studying fundamental and advanced programming concepts.

Author: Ms BARCAN, Nicoleta-Gabriela (Gheorghe Asachi Technical University of Iasi)

Co-authors: ALEXANDRESCU, Adrian (Gheorghe Asachi Technical University of Iasi); Prof. TURCANU, Tatiana (Technical University of Moldova)

Presenter: ALEXANDRESCU, Adrian (Gheorghe Asachi Technical University of Iasi)

Session Classification: Networking in Education and Research

Track Classification: Networking in Education and Research