Automated Stock Trading – Developing the Serious Game FSTG to Teach the Topic of Finite State Machines

Abstract:
A new methodology to teach about the topic of Finite State Machines is presented in this paper. For this purpose, nine learning objectives which are classified into the three categories Basics of Finite State Machines, parallels between Finite State Machines and stock trading, and the application of Finite State Machines were developed and implemented into a Serious Game solution. This paper covers the third category about the application of Finite State Machines and its use to create Artificial Intelligence. The learning objectives were determined by using the widely-known Taxonomy of Bloom and integrated into the Serious Game The Finite State Trading Game (FSTG). In this turn-based trading game, the user aims to beat a Non-Player Character by skillfully trading shares while the user faces increasing complexity throughout the game. For the evaluation of the Serious Game approach a pre-test and post-test setting was performed with students of a local upper vocational school class at the Technical University of Munich. The results of the following
Analysis demonstrated significant progress in terms of the students’ knowledge about Finite State Machines for every tested statement.

Stichworte: Serious Game · Finite State Machine · stock trading · Bloom taxonomie for learning objectives · Artificial Intelligence

Intellectual Contribution: Learning and Pedagogical Research

Zeitschriftentitel: International Journal of Engineering Pedagogy (iJEP)

Journal gelistet in FT45 Ranking: nein

Jahr: 2017

Seiten: 17-33

Volltext / DOI: http://doi.org/10.3991/ijep.v7i1.6524

Urteilsanmerkung / Urteilsbesprechung: 0

Key publication: Nein

Peer reviewed: Ja

International: Ja

Book review: Nein

commissioned: not commissioned

Professional Journal: Nein

Interdisziplinarität: Nein

Leitbild: ;

Ethics & Sustainability: Nein

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Informatik > Lehrstühle der Informatik > Informatik 17
- Lehrstuhl für Wirtschaftsinformatik (Prof. Krcmar) > Journal Beiträge
- Hochschulbibliographie > 2017 > Fakultäten > Informatik > Informatik 17 - Lehrstuhl für Wirtschaftsinformatik (Prof. Krcmar)

entries: