

Building Domain Model via Game With a Purpose

Marek KIŠŠ*

*Slovak University of Technology in Bratislava
Faculty of Informatics and Information Technologies
Ilkovičova 3, 842 16 Bratislava, Slovakia
keramssik@gmail.com*

The Web brings many great uses for personalization. Prerequisite for a working adaptive system is the existence of the domain model to provide basis for modelling both user knowledge and semantics of domain documents. Despite the use of conventional, heavy-weight ontologies, simple domain model represented as a concept relationship networks and easier to create, also proved to be efficient for this task in certain systems [1]. However, even the creation of such a simple model cannot be fully automated and it is usually a work for authors of contents.

We created a game with a purpose [4] for building domain models. Our game is based on similar principles as Little Search Game [3]. It's an online single player game working with search queries and creating a lightweight term network. Its player interface is depicted in the Figure 1. At the beginning game display to player a single term. Then he tries to find a term, related to the displayed term. The number of points he obtains for his choice is based on a number of occurrences of this pair in a corpus of domain documents. Our game differs from Little Search Game in a way how the player interacts with a game. Instead of thinking out the best term and writing it to the input form, he has to choose the best one from terms offered by the game. They appear in colourful bubbles, blowing up upon selecting, yielding the number of points received by the player by that action. This makes our game more dynamic. We believe that such game can be more attractive for players.

We test our game in the domain of Principles of Software Engineering course and as input we use its documents from learning system ALEF comprising tens of textual learning objects (few pages each). As terms we use manually created concepts for this domain. We narrow down the number of terms, from which we randomly select terms in to game. We worked just with a subset of all terms. If many players have not chosen a certain word in the same round, game realizes that there is probably not any kind of a strong "hidden relationship" [2] between this term and round specific term, removes it

* Supervisor: Jakub Šimko, Institute of Informatics and Software Engineering

from this subset and replaces it with another one. This narrowing helps us to obtain results fast even with a small number of players.

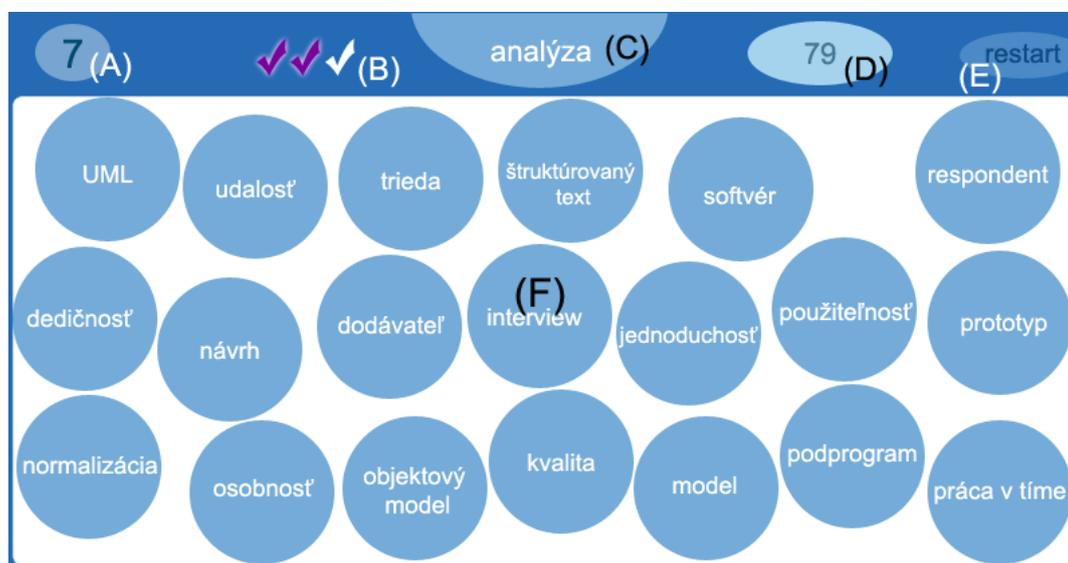


Figure 1. GUI of our game: timer(A), shot counter(B), game specific term(C), current score(D), restart button(E) and cloud of bubbles(F)

Outputs of our game are relationships between terms. It uses the “wisdom of crowds” paradigm: “If many say that A is an instance of B, A is likely an instance of B” [2]. So our game creates relationship between a pair of terms when couple of players have connected them in a game.

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References

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