

# Wiki for Designing Games at Summer Camp

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## Abstract

In this paper, we present a wiki as a medium for storing and sharing materials for games and as an ecological system that can serve as a basis for creating games and simulations. We used both approaches in the framework of summer schools for students 10–12 years old between 2008–2010.

## Summer Camp Activities

In August 2008 we organized our first one laptop per child summer camp in Russia. We taught 32 students from Nizhny Novgorod who used OLPC XO in the natural environment. The XO was used in 1:1 mode and each summer camp student became an owner of an XO for 10 days.

Summer camp activities included taking pictures of the plants and animals met in field trips, writing stories about their impressions and experiences, collecting and processing GIS data in the camp neighborhood, measuring sound volume and programming in the Scratch programming language. All the stories and pictures were stored in a MediaWiki run in a local wi-fi network. All 32 students registered in the MediaWiki and used the hypertext environment to collaborate with their peers.

In August 2009 we organized our second one laptop per child summer camp. We taught 35 students from Nizhny Novgorod who used OLPC XO and Intel Classmate PCs in the same 1:1 mode and in the same wi-fi network based on MediaWiki usage.

## Scratch projects

In 2008 we designed a Scratch programming activity as a collective project, in which students with diverse interests and attitudes could participate. The core of the activity was creating Scratch sprites and programming their behaviors as scripts, which were then used in a multi-agents model. Scratch programming consisted of four stages.

At stage 1 students designed a scenario of a Scratch based multi-agent game. They chose to create a Mario type game called “The Wanderer”. They decided that the Wanderer will walk across a forest, meet various creatures, such as frogs, bugs and dragonflies that will try to chase him. He will be able to reach the end of the road if he is not eaten by any of them.

At stage 2 the team collected and designed the sprites for the game. Each participant was responsible for their own sprites. The sprites were partially drawn by the “artists” and partially cut out from photos, made by “photographers”.

At stage 3 the game programming process was split into small tasks, each of which was fulfilled by an individual or by a pair of programmers. All the individual pieces of code, representing scripts, were shared as files on the collaborative MediaWiki environment.

At stage 4 all pieces of code were put together, tested, debugged and showcased as a game. This game is available on the Scratch website - <http://scratch.mit.edu/projects/KatkovJuriy/652601>



Figure 9. Strannik Project

In 2008 we designed Scratch programming activities as individual projects, in which students design projects with a single sprite. A single sprite contains all the necessary information, and reproduction of such a sprite, we get a ready-made model, in which the sprites behave as agents of the same breed.

For an example, the Flocking Sprite project - <http://scratch.mit.edu/projects/patarakin/702827> Each separate sprite contains all the information about how a butterfly moves around the screen, and how it reacts to the behavior of other butterflies.

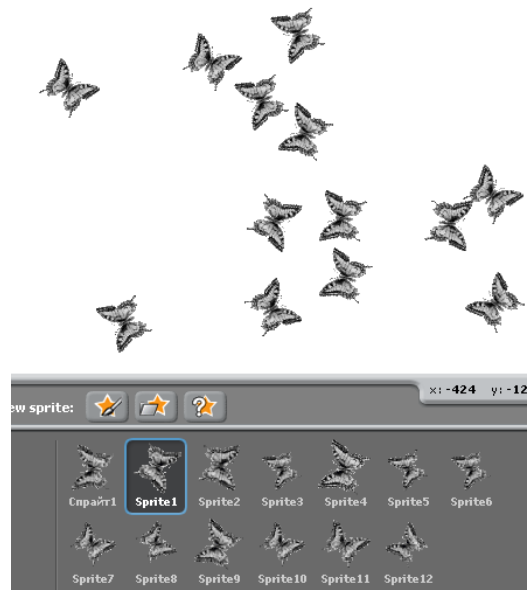


Figure 10. Flocking Sprite Project

Information about two species of butterflies was stored in the Battle Sprite Project. Each sprite in this model had the same script and it could be one or another species with the same behavior. If the agent met another creature it could change his breed or not.

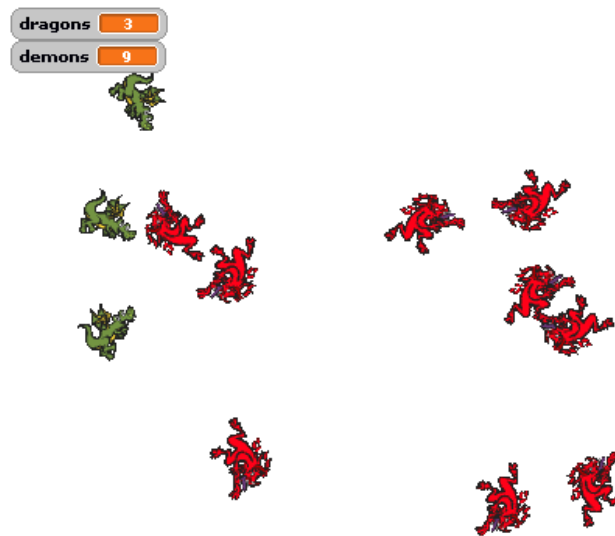


Figure 11. Battle Sprite Project

## MediaWiki

Historically the development of the Scratch programming language in Russia is closely linked with the development of educational wiki communities. It is not a coincidence. Both wikis and Scratch are built on the metaphor of constructing bricks. Very often we draw attention to the fact that a wiki is a very simple and very quick way to create and deploy a new page in the

network. In the same time attention is distracted from the point that it strengthens with the interaction of wiki pages and the collaborative efforts. What has been created by one person can be further used by other people. Articles inside a wiki assume power in their creation, we follow certain standards. We can collect articles from the finished blocks, the same way as the program collects from Lego blocks. Lego blocks or Wiki articles are useful and powerful not because they are simple but because they determine the exact template, and they are always compatible with each other.

All students were registered in the MediaWiki and used the hypertext environment to collaborate with others. All the stories and pictures were stored in a MediaWiki run in a local wi-fi network. Students used these materials, as well as materials from the digital collections to create games and stories in the Scratch environment.

In 2010 we made special MediaWiki extension which allowed us to insert Scratch applets in the MediaWiki website. In this first version of an extension you have to upload your scratch script on [scratch.mit.edu](http://scratch.mit.edu) The URL of extension is <http://www.mediawiki.org/wiki/Extension:Scratch>



**Figure 12. Logo of Scratch extension**

The approach to the storage of individual sprites and other materials in MediaWiki was successfully used in the course of two summer schools on the model of 1:1 in 2008 and 2009. The same approach with personal responsibilities for the project, we used from 2007–2009, as part of teaching students of Nizhny Novgorod State Pedagogical University.