

eSeeCode: Creating a computer language from teaching experiences

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IOI Conference 2016, Kazan



Programming, before and now...

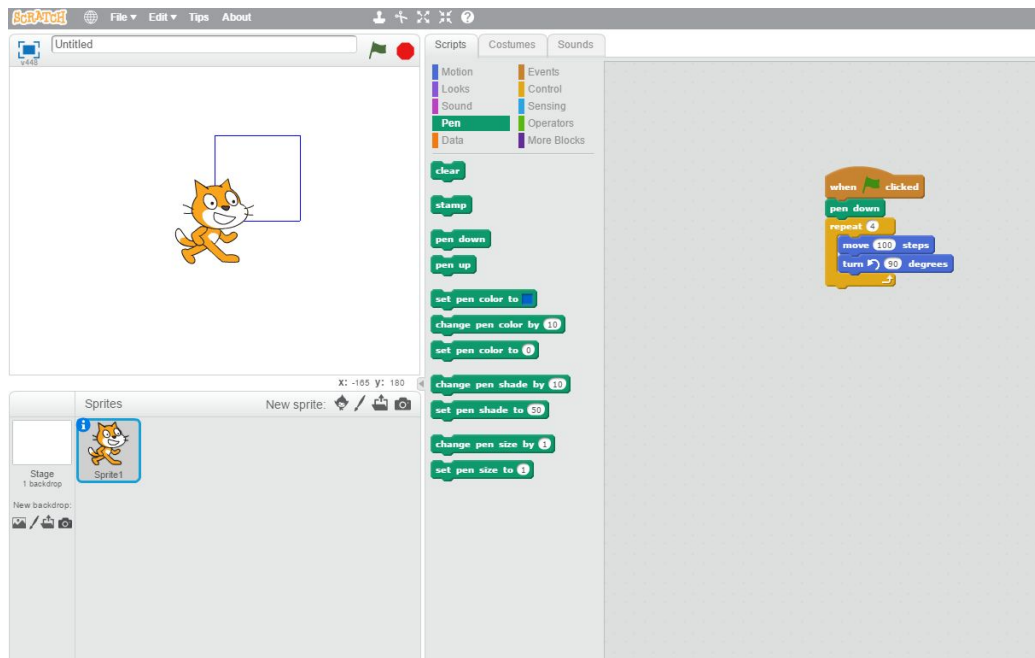
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- 50 years since the apparition of educational programming.
- Different approaches from textual programming to visual coding.
- Popularity in learning to code is increasing. Some countries are including it in their curricula.
- The number of programming languages is also increasing.



To a modern visual blocks programming (Scratch)

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But what are our goals?

Structure the students reasoning.

Being able to follow an algorithm.

Being able to create their own programs.

Problem solving vs Project-based learning.

(In particular for IOI) being able to reach a certain level of programming.

Current resources

- Some of the drawbacks of the popular choices:
 - Scratch: No continuity, difficulties in long programs.
 - Python / C++: Not prepared for the classroom, difficult to start at an early age, no visual help.
 - Pedagogical: Materials not configurable, lack of teacher training.
 - Technological: Difficult installation and usage depending on the device.
- Our solution **eSeeCode**:
 - Based on Javascript
 - Free (OpenSource)
 - Web (HTML5): Online/offline mode, multiplatform and multidevice.



Pieces

I/O

Debug

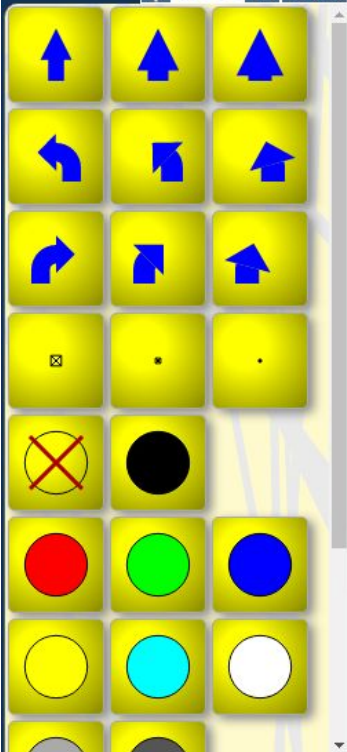
Views:

Touch

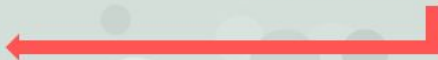
Drag

Build

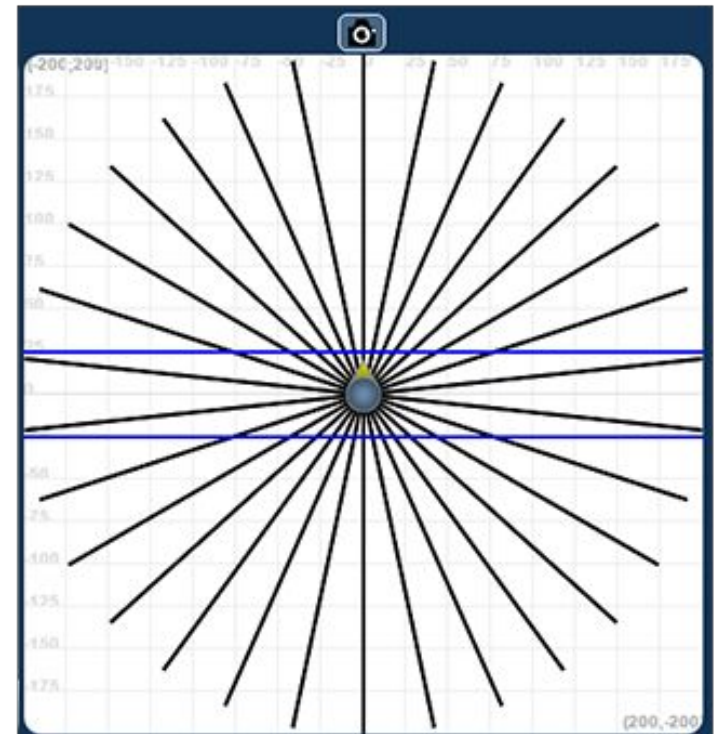
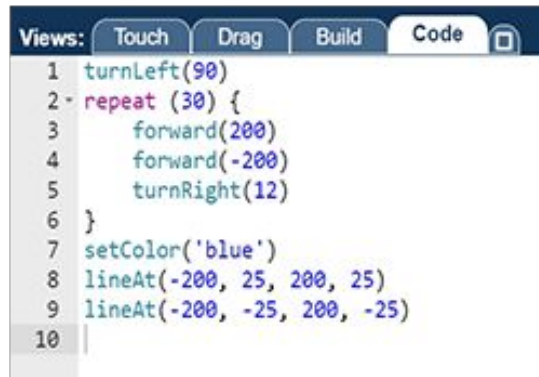
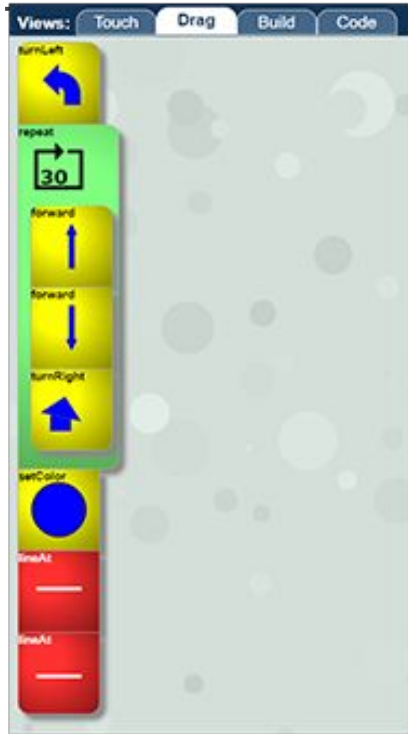
Code



Click some blocks to start programming!

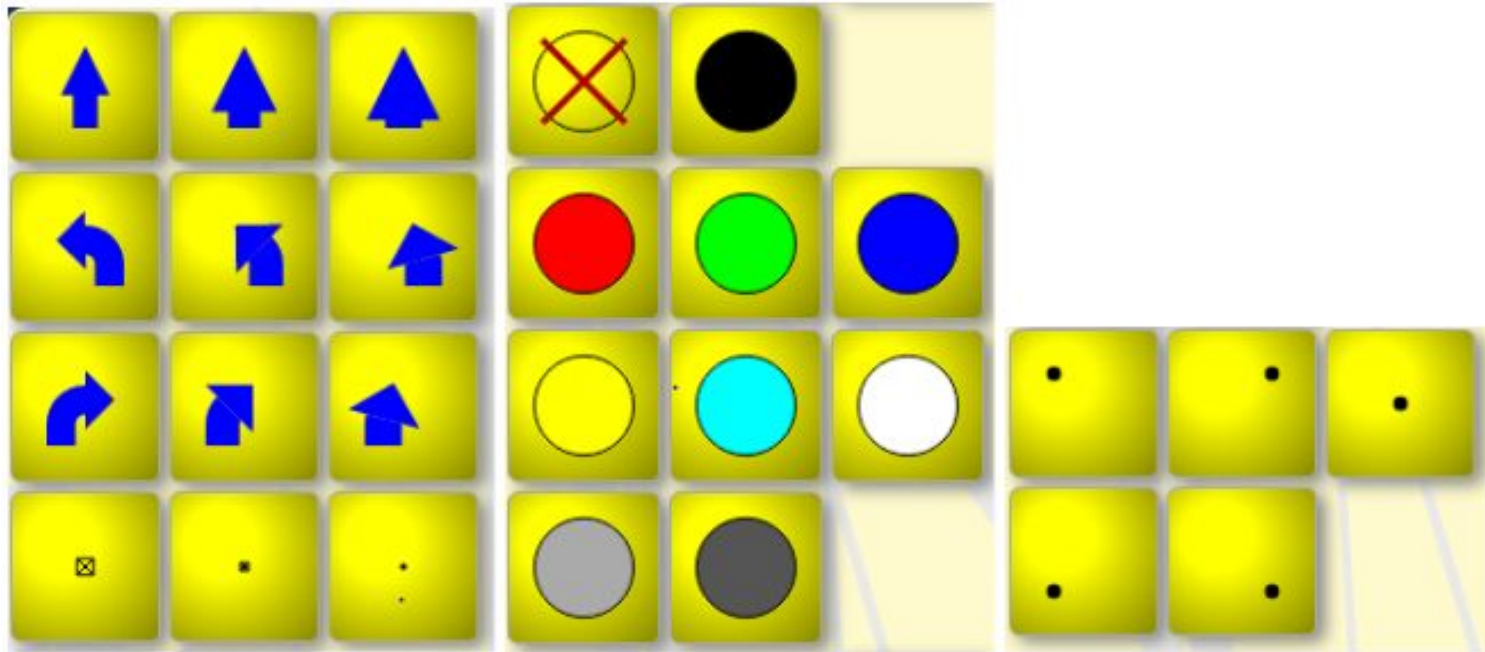


eSeeCode: Views



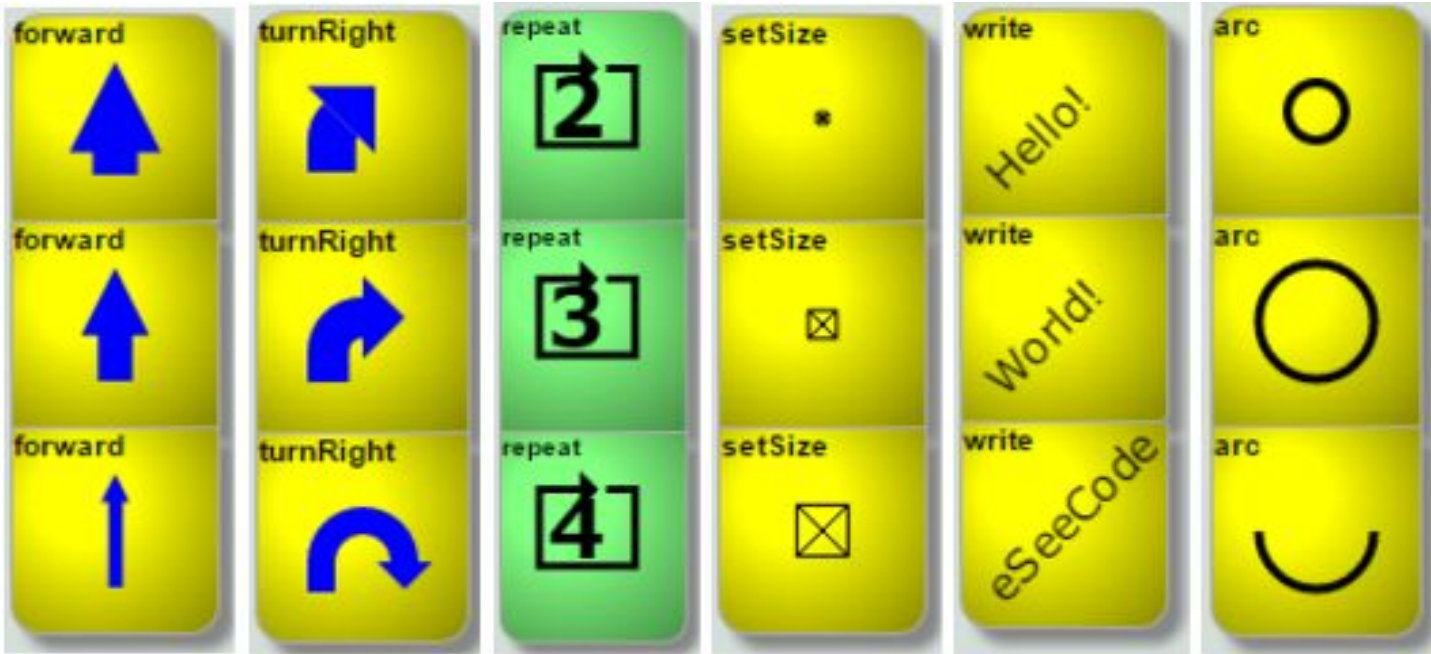
Basic set of icons for beginners

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Adaptive icons

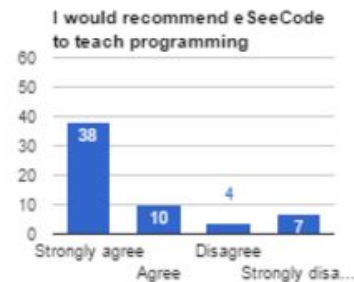
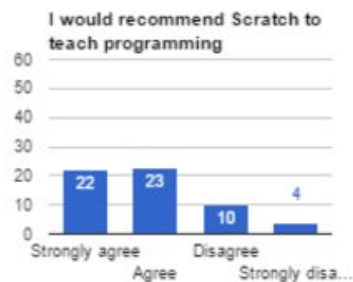
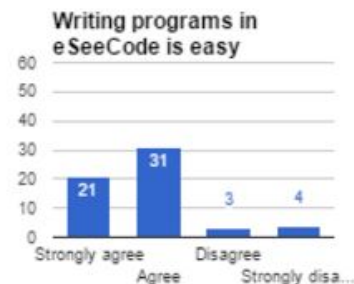
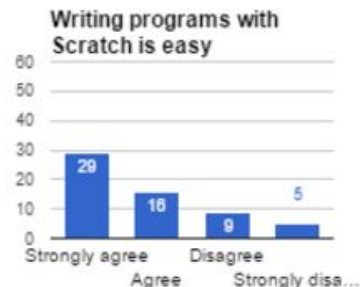
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Current status

- Being used in several schools in Catalonia.
- Teacher-oriented tools.
- Active development.

Formal studies comparing it with other languages.



Ideas to take home

1. Right now one language cannot cover all the learning process of programming.
2. It's important to adapt the language and the methodology to the different stages of the learning life.
3. eSeeCode is one tool that can cover some of the difficulties of transitioning from visual based coding to a textual language.

And from here...



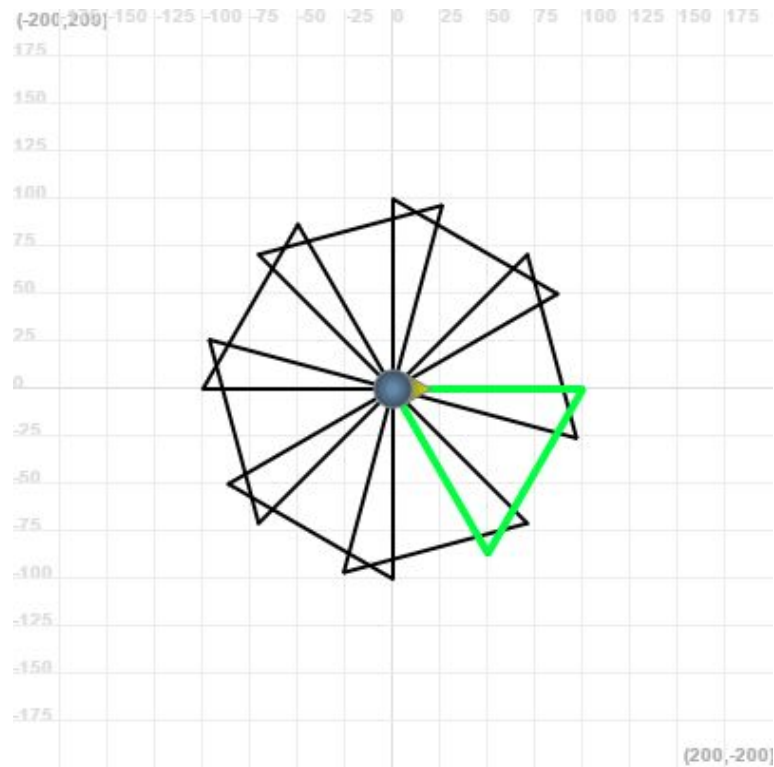
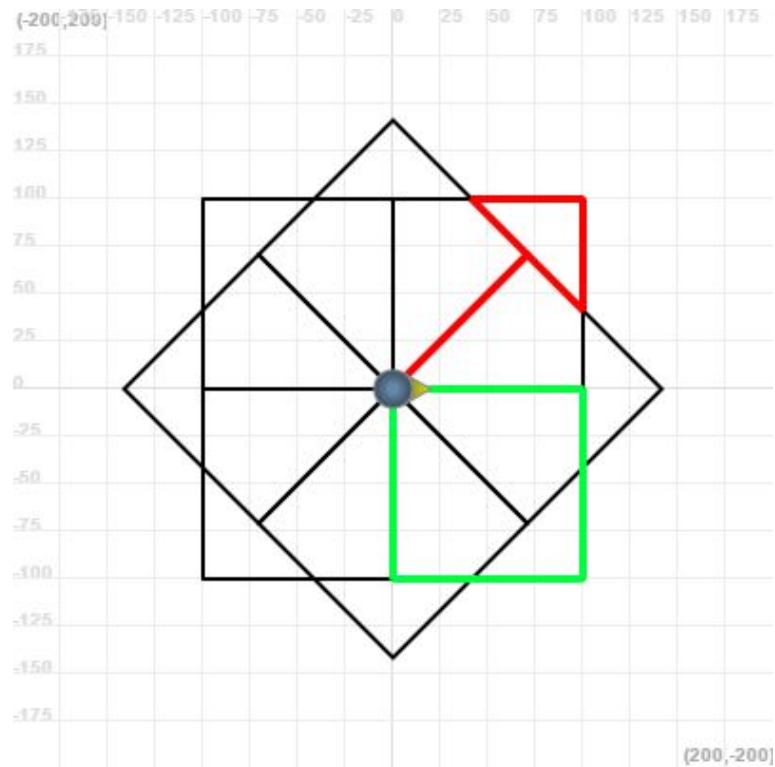
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Some of the possible patterns

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More examples

