

Blockly Programming Dataset

Tomáš Effenberger



CSEDM 2019

Block-Based Programming

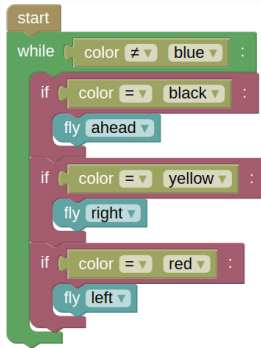


- online learning system
- published models and algorithms
- open source code
- 9 levels, 85 tasks
- sequential execution, loops, conditions
- block-based programming

Data

- 1.4 million program snapshots (events)
- 85 000 task session (student-task pairs)
- 85 tasks
- 5 800 students

Grid World and Code Representation



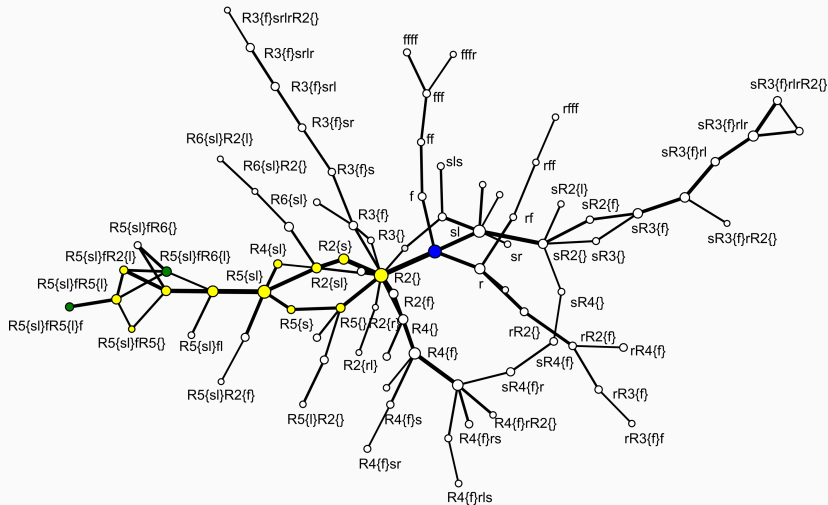
setting.fields:

b	b	b	b	b
kA	kA	k	k	k
k	y	kA	kA	k
k	k	r	kA	kA
kA	kA	kA	r	k
k	k	y	k	k
k	k	kS	k	k

solution:

W!b{Ik{f}Iy{r}Ir{l}}

Usage Example: Exploring State Space Graphs



Usage Examples

- exploring state space graphs
- measuring similarity of programming tasks
- measuring performance on programming tasks
- measuring difficulty of programming tasks

Summary

- block-based introductory programming
- 85 tasks
- 1.4 program snapshots
- comprehensive documentation
- free online game
- published models
- open source code