Blockly Programming Dataset

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CSEDM 2019

Block-Based Programming

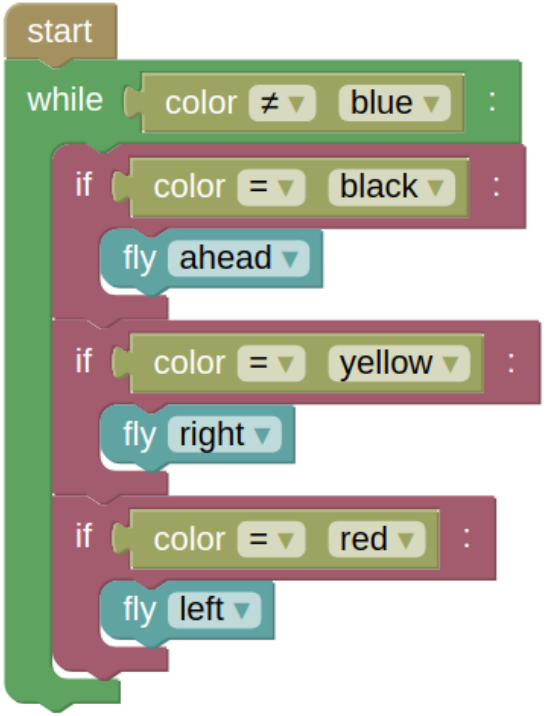
RoboMission

- 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



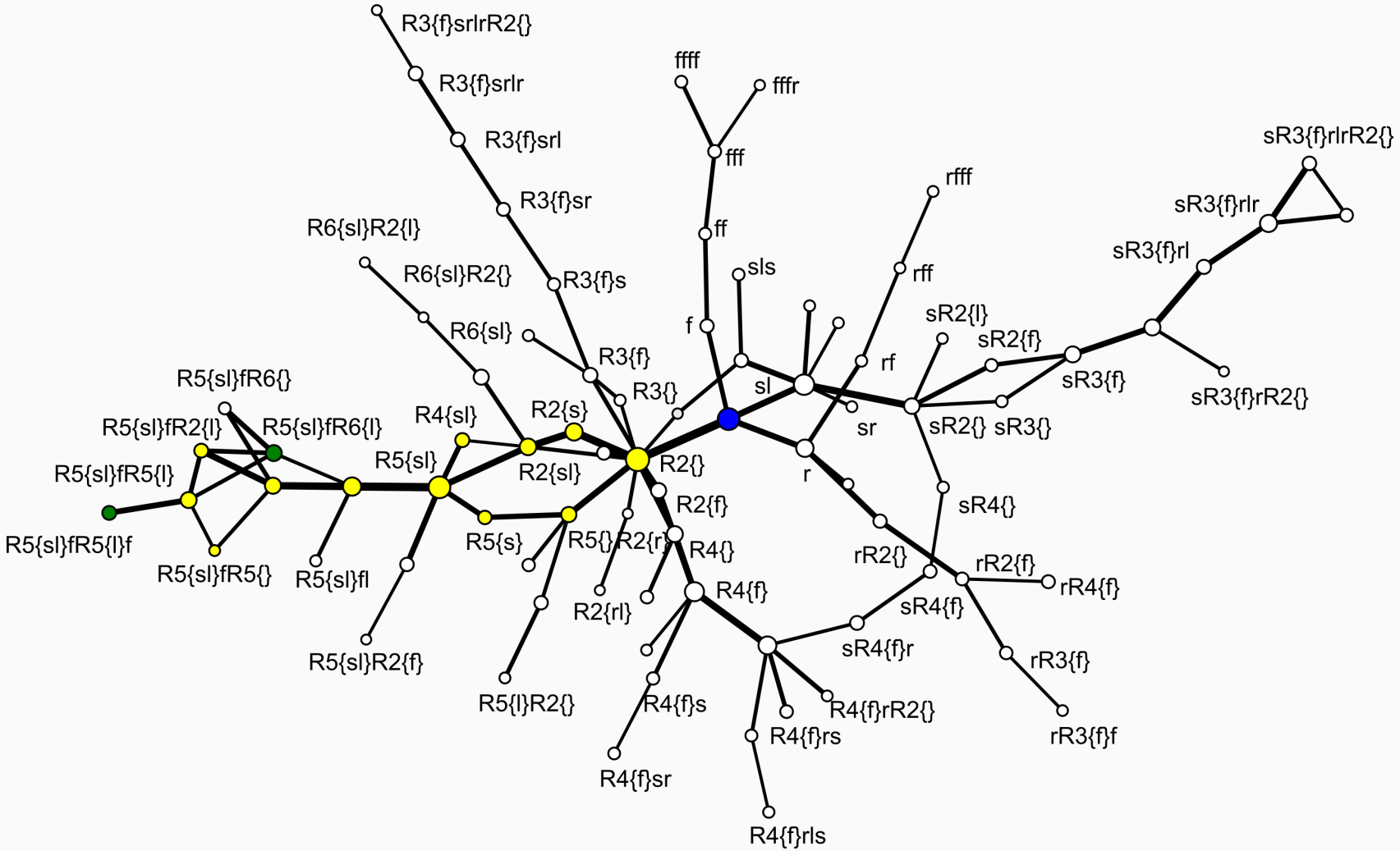
setting.fields:

```
|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
- 1.4 million program snapshots
- 85 tasks
- comprehensive documentation
- free online game
- published models
- open source code