

Sortbot



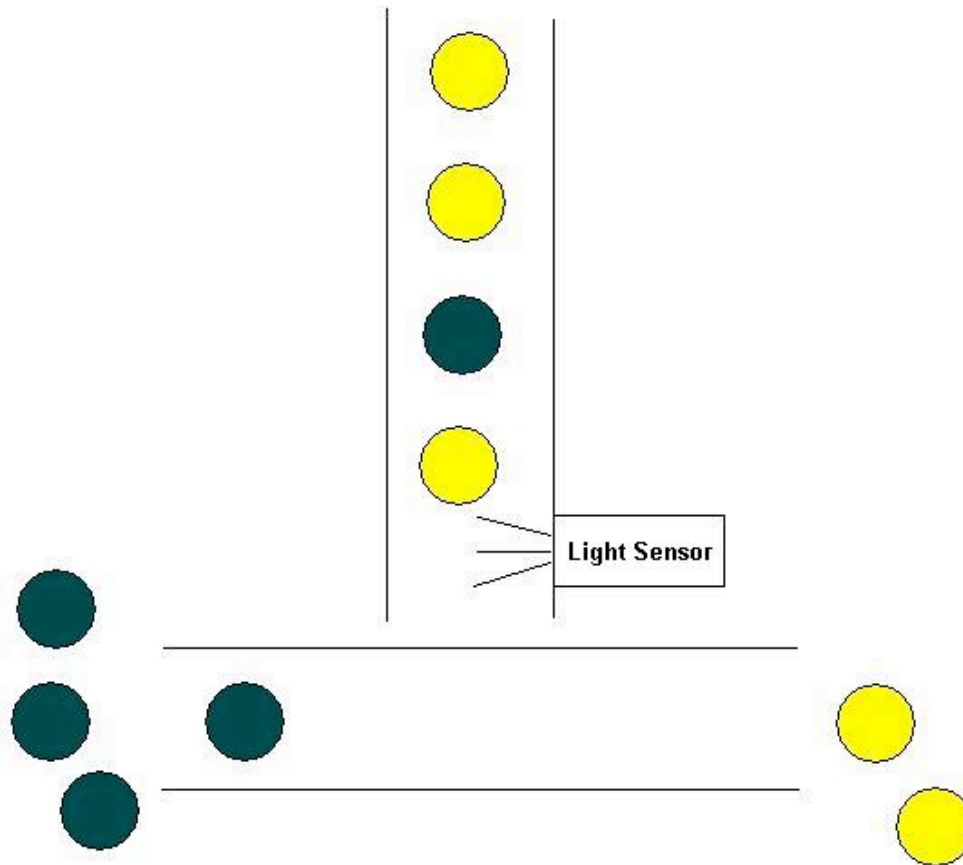
E-Machine goes Lego



Introduction

- Implementation of E-Machine and S-Machine
- Hardware: Lego Robotics Invention
- Software:
 - RCX: brickOS Ver. 0.6.2.10
 - Programming Language: C++
- Challenge: Sorting lego bricks by colour

Sorting Lego Bricks



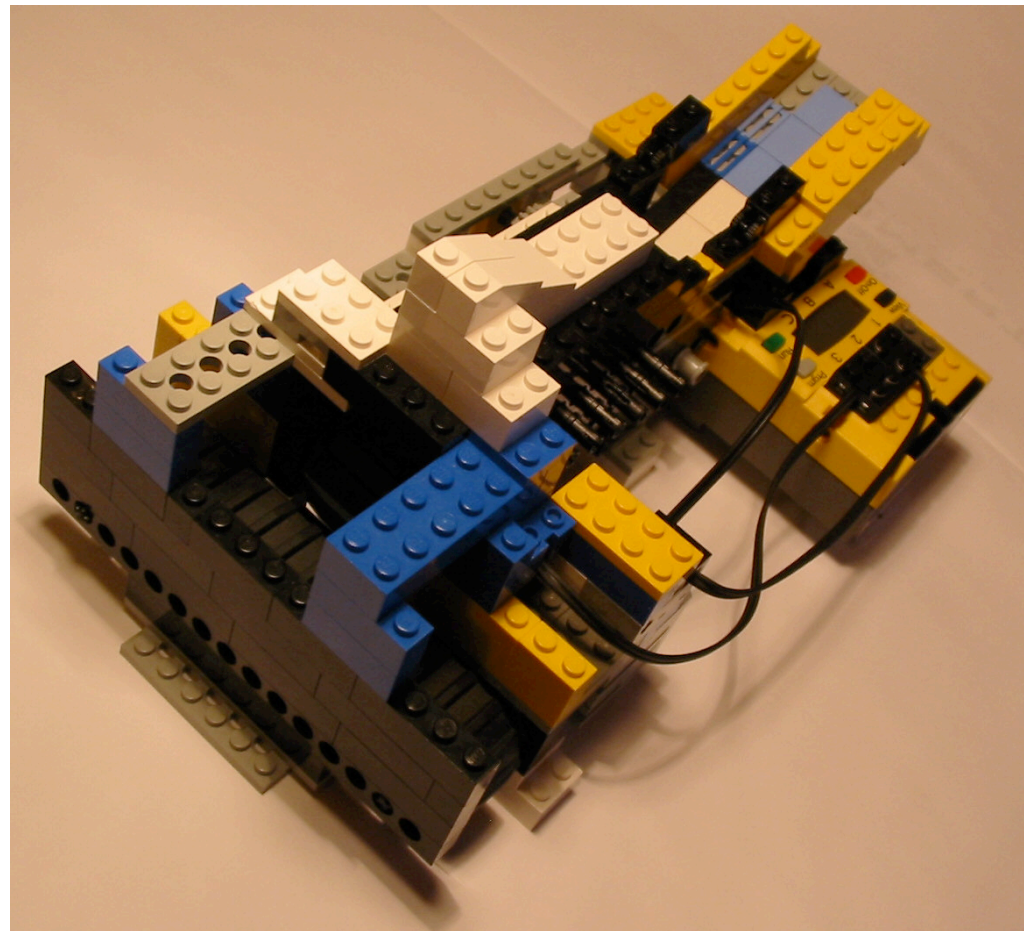


Hardware

- 2 conveyer bands (motor A and C)
- 1 light sensor (sensor 3)
- 1 touch sensor (sensor 2)
- 1 RCX
- 174 different lego parts

-> assembled together = Sortbot

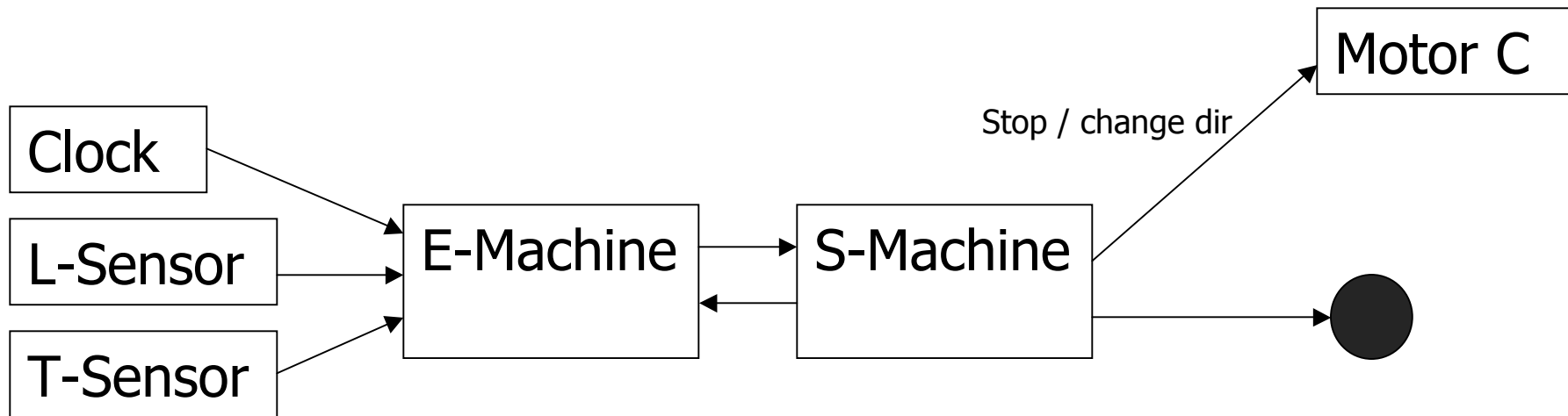
Hardware Cont.



Trummer & Löffelberger ESE WS
04/05



Scheme



Base frequency = 200 Hz



E-Code and S-Code

```
e00: if( halted, e05 )
e01: if( is_item, e08 )
e02: if( stop_c, e11 )
e03: future( 5, e00 )
e04: return
```

```
e05: release( halt_program[5] )
e06: future( 5, e00 )
e07: return
```

```
e08: release( set_motor_c[500] )
e09: future( 5, e00 )
e10: return
```

```
e11: release( set_motor_c[5] )
e12: future( 5, e00 )
e13: return
```

```
s00: dispatch( halt_program[0] )
s01: dispatch( set_motor_c[0] )
s02: jump( s00 )
s03: return
```



Demo

Enjoy the demo!