Programming LEGO robots with BlueJ

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Why use BlueJ with LEGO? (and vice versa!)

• Robotic models are motivational.
• Models can help to realise objects.
• BlueJ is a familiar, comfortable environment.

• I do have some reservations:
Two distinct approaches

• Using BlueJ as a development environment for autonomous models.
  – Such models would be programmed in Java.
• Using NXT models to enhance normal BlueJ instructional projects.
  – Model behaviour is controlled from BlueJ.
  – No programming required on the model.
Autonomous models

- BlueJ extension by David Bowes, University of Hertfordshire: www.bluej.org/extensions/extensions.html
- The leJOS library classes: lejos.sourceforge.net
- NXJ firmware on the brick.
- There may be stylistic issues you would like to avoid – use of static references.
Project-enhancing models

- No plug-in required for these.
- The *icommand* libraries offer direct communication with the NXT.
- No special firmware on the brick.
- Potentially usable with Greenfoot.

- The story of the TicketMachine project …
  - Missing was a real-world effect.
Inspiration for the missing piece

A candy-machine BlueJ project linked to the Candy Coated Catapult model.

Instead of printing tickets, a candy is delivered.

Summary

• LEGO models have the potential to add interest and elements of the real-world.
• BlueJ easily supports use of the leJOS libraries for the Mindstorms NXT.
• Both autonomous models and project enhancements are possible and have their place.