

Implementing a Blockly Editor in MPS

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- Draggable blocks:



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Blockly in Blockly

Vehicle definition definition:

The image shows a Blockly workspace with a green block named 'vehicle_definition'. It has three 'dummy input' fields. The first field is labeled 'Name' and has a 'text input' block with 'default' and 'Name' as arguments. The second field is labeled 'Number of wheels' and has a 'numeric input' block with '4', 'Wheels', 'min 0', 'max Infinity', and 'precision 0' as arguments. The third field is labeled 'CHECKLIST' and has a 'statement input' block with 'CHECKLIST' as an argument and a 'text checklist' block with 'checklist' as an argument. The block's 'type' is set to 'any'. Below the main block, there are 'automatic inputs' for 'top+bottom connections', 'tooltip', 'help url', 'top type', 'bottom type', and 'colour' (set to '230°').

Vehicle definition:

The image shows a visual representation of the 'vehicle_definition' block. It is a purple block with three input fields: 'Name' with a 'default' value, 'Number of wheels' with a '4' value, and 'checklist' with a text input field.

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- May waste screen estate
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Why Blockly in MPS

- Should feel familiar to Blockly and Scratch users
- Fast editing, autocompletion
- Advanced code navigation and search
- Sane variable renaming
- Version control!
- Go to concept, go to editor

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- In Blockly, every block has an ID.
- This should make conversion between Blockly and MPS Blockly lossless in both directions.
- A helper language “BlocklyXML” captures the structure of the serialization format used by Blockly
- The introduction of BlocklyXML made generation much cleaner

Conclusions and Future

- It was really easy to create a PoC implementation of a specific Blockly language in MPS
- It was also easy to copy the major part of the semantics of the Blockly definition language
- Perhaps, this could be a nice example for those who are learning MPS
- The generator for the Blockly definition language is not implemented, but will be a nice exercise, as MPS concepts will have to be generated.
- Polishing and integration with the original Blockly is not yet done
- Meta-comment: This presentation was created in Lyx, which is an awesome projectional editor for Latex