

MAX PROGRAMMING

“Connect to anything.”

– Cycling ‘74

Reading

Max Getting Started, v4.5 (Cycling 74: Palo Alto, 2005), pp. 3, 9-13, 17-19 & 28-31.

Terms & Concepts

Max Programming Visual programming language Patcher, or patch Object-oriented programming Objects - Inlets/outlets - Assistance text Patch cords (delete with <i>esc</i>) Message (m) Lock/Unlock – Run/Edit Comment (c) Self-commenting code Subpatcher (p) Encapsulation Program Execution Bang (means “do it”) Trigger events (bang, <i>trigger</i>) Triggering by left-most inlet Message order of execution: - Right-to-left - Bottom-to-top Runtime issues: - Max Console (<i>print</i>) - Error messages - Debugging - Stack overflow Objects Help on ‘object’ (Option-click) Copy object (Option-drag) Inspector (Cmd-i) Arguments - Obligatory - Optional - Default value Key commands (x): - z, n, t, b, c, i, f & m Messages Data types - Int & Float - List - Bang - Symbol - Any message	Send/Receive Messages (w/o patch cords): <i>send</i> (s) <i>receive</i> (r) Working with Data Number boxes (int. vs. float) Number box (int) - Decimal - Pitch (C4) - Binary Variables: <i>int</i> & <i>float</i> <i>key</i> (ASCII) <i>pack</i> & <i>unpack</i> <i>table</i> & <i>coll</i> <i>text</i> Math Objects +, -, *, / and % <i>expr</i> <i>random</i> MIDI Objects High-level MIDI messages - <i>notein/noteout</i> - <i>ctlin/ctlout</i> - <i>pgmin/pgmout</i> - <i>bendin/bendout</i> Note on/off - <i>makenote</i> & <i>noteout</i> - <i>stripnote</i> & <i>flush</i> Low-level MIDI messages - <i>midin/midiout</i> - <i>midiparse</i> & <i>midiformat</i> Routing, Selection & Counting Objects <i>gate</i> <i>select</i> (sel) <i>counter</i> Timing Objects <i>metro</i> <i>tempo</i> <i>pipe</i>	User Interface Objects <i>button</i> (b) – bang <i>toggle</i> (t) – off (0), or on (1) <i>sliders</i> - <i>kslider</i>, <i>nslider</i>, <i>dial</i>, etc. <i>panel</i> (Arrange > Send to Back) <i>umenu</i> Human-Interface Design Resize an object Nudge keys (cursor arrows) Arrange > Align Distribute Object > - Show Fonts - Color - Fix Width (Cmd-j) - Hide/Show on Lock - Seg. Patch Cords (Cmd-y) Presentation mode Program Initialization <i>loadbang</i> & <i>loadmess</i> Environment Settings Max > Preferences Options > Overdrive Options > MIDI Setup... Documentation & Tutorials Max Tutorials, Topics & Guides Max Reference Interactive Help files File Extensions .maxpat, .txt, .coll, .mid, etc. Application Types Generative Parameter mapping Real-time interactive Transformative Sequenced Standalone
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Reference

Cycling ‘74. 2025. *Max 9 Documentation*. Palo Alto, CA: Cycling ‘74. Available online at:
<<https://docs.cycling74.com>>.