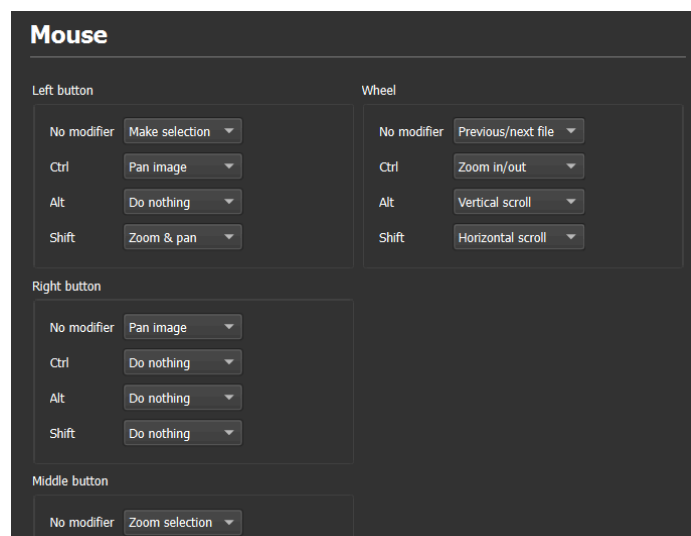


During the course of this project, I created 10 different patches in Puke, 3 of which were subpatches as a part of a patch to recreate a C harmonica. Notes regarding issues, bugs, and desired features that came up are listed below. In addition, I updated 16 different help patches to be more descriptive or encompassing of the given node's options and uses, and created 12 help patches for nodes that previously lacked them.

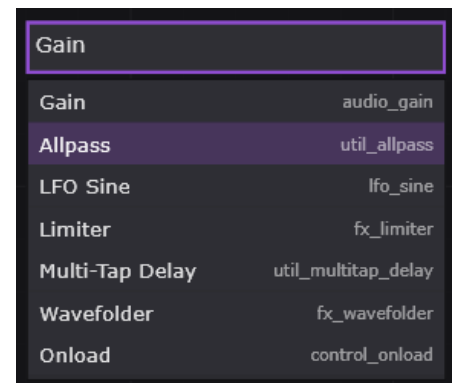
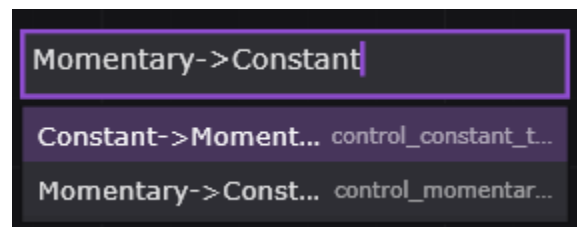
All testing was done on Windows 11 with Puke version 0.1.9

- Input controls and customization could be more robust
 - Left click always pans, shift modifies it to highlight
 - Right click always opens context menu
 - No ability to switch what the mouse presses do
 - Does not open the settings/context menu of nodes when right clicking
 - Cant customize scroll wheel.
 - Always either zooms or pans vertically
 - Ctrl + scroll will always zoom regardless of the setting
 - No ability to pan horizontally or customize what the scroll does with modifier keys (e.g. when holding ctrl/Cmd ⌘, alt, or shift)
 - No scroll sensitivity option
 - *XnView's mouse settings are a good model for customization options*

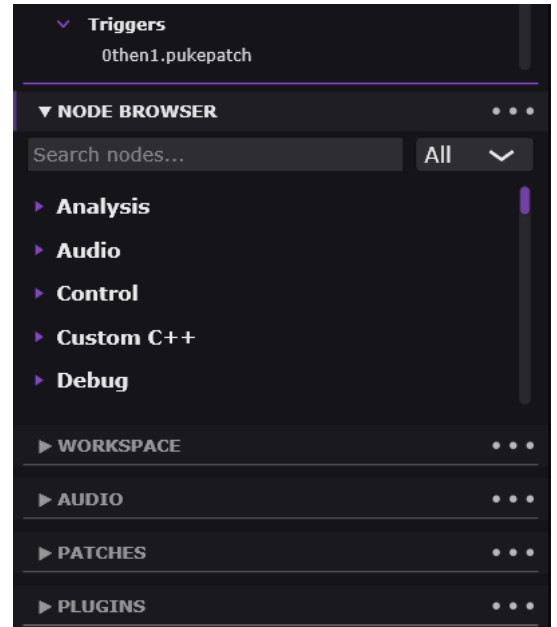


- Shift + + and Shift + * do not function
- No way to add custom nodes to quick node add

- The ability to add a shortcut for adding reroute nodes would be useful (at least for the way I used Puke)
- More documentation
 - More work on developing a wiki would be very useful; for example, being able to search for a way to do a high cut and being able to discover the biquad filter node
 - It would be very beneficial to have somewhere to give an explanation of the basics of Puke, what it can do, common nodes, and useful shortcut controls in the default keyboard layout
- Help patches
 - Many functions do not work inside of the help patch, only when copied somewhere else (e.g. audio, the analyzer node, many input nodes, attempting to move nodes)
 - The starting position and zoom is often way off from where the help patch nodes are actually located
 - Some help patches still remain absent, incomplete, or sparsely commented on with explanations
- Quick Add Node
 - When typing after pressing n to create a new node, tab and shift + tab should perform the same action as the down and up arrow keys, respectively, rather than just closing the autofill node menu; tab is typically the button for “next selection” and shift tab for “previous selection”
 - The node search should put higher priority on nodes whose names match closer to what is typed rather than what is first alphabetically. e.g.
 - Typing “momentary->constant” highlights the “constant->momentary” node as the first selection.
 - Typing “Gain” results in the “Gain” node being the first selection, but oddly has “Allpass” remain as the highlighted default selection.
- In the left submenus (Especially project folder, workspace menu)



- Right clicking a file should give an option to copy/duplicate the file/pukepatch in the context menu
- Right clicking a folder should give an option to create a subfolder/subdirectory in
- I am unable to resize the different sections (e.g. Node Browser) to be larger or smaller than specific sizes, presumably due to an arbitrary minimum vertical length.
- An option to refresh the contents of the folder for if the files are changed externally (e.g. patch files moved/renamed through file explorer rather than Puke while Puke remains open, which results in odd behavior).
- The state of which folders are opened or collapsed is not saved; in a project with many patches within many folders, all but the contents of the currently relevant folders must be collapsed again every time Puke is reopened to reasonably allow navigation.
- Saving or creating a node will change the scroll bar position to a seemingly default position, which can be distant from the previous position in large project folders.
- Node issues:
 - Hardware in knob node acts strange when moving up from its minimum value using the mouse
 - Very inconsistently, clicking on a toggle not work, requiring it to be clicked again in order to actually toggle it
 - Switch's selector fallback max does not properly reflect the number of inputs until after changing to another patch and back.
- Node Changes/Feature Requests:
 - Comments should be automatically selected when placed (or have an option to do so), like in apps such as powerpoint when a textbox is made, rather than having to double click it immediately
 - No bell, notch, or shelf filters; only LP, BP, and HP through the biquad filter
 - Subpatch



- Input/output quantity should automatically switch to the correct amount based on the placed subpatch in/out nodes inside of the selected subpatch
 - Allow for adding hover descriptions and names for subpatch inputs and outputs for easier use
- Generally, node inputs/outputs should switch colors between blue and purple if its mode can switch between momentary and constant (e.g. Tapper)
- Print should show its input connector even when collapsed
- Add a checkbox to the automation curve node to enable and disable automatic looping after completion
- New Nodes
 - A visual EQ would be nice; something of a combination between the “bars” mode in the analyze node and the curve control UI of the automation curve node
 - A more robust selection of MIDI nodes
 - A pair of nodes with a single input and single output respectively where the output node to a corresponding input node will simply pass through the value, with some sort of identifier (name, number, etc.) to set which nodes correspond to each other. Currently, connecting distant nodes across a large patch makes it feel cluttered and unpleasant; a node where a connection can be made to a node somewhere on the patch and the value is simply passed through to the output of another node (possibly in multiple separate locations) would be very useful in making patches appear less cluttered and easier to understand.
- General Features
 - Adding some new node to detect keyboard input and sent a pulse (e.g. to be connected to a button or a toggle) or some way to otherwise detect keyboard input
 - Some way to “swap” nodes, maybe by dragging a new node over a currently placed one and replacing all of its connections with the inputs/outputs of the same index
- General Issues
 - Reroute nodes are removed whenever the input or output of the connection is changed, requiring them to be

Help Patches:

Updated:

- Sources/Utility/Constant
- FX/Drive/Bitcrusher
- FX/Drive/Distortion
- Sources/Modulators/Noise
 - Now for both Noise and Pink Noise
- Control/Transform/Scale
- Logic/Compare/Select
- Control/Triggers/Latch
- Control/Triggers/Tapper
- Control/Triggers/Momentary-Gate
- Control/Triggers/Toggle-Momentary
- Math/Functions/Trunc
- Analysis/Pitch/Pitch Detect
- Math/Functions/sign
- Sources/Utility/SampleRate
- Sources/Modulators/Phasor

Created:

- Audio/Utility/Gain
- Math/Convert/mtof-ftom
 - For both mtof and ftom nodes
- Sources/Modulators/LFO
 - For LFO Saw, LFO Sine, LFO Square, and LFO Tri
- Logic/Switching/Switch
- Logic/Compare/if_else
- Control/Automation/Automation Curve
- Utility/Delay/Feedback Block
- Control/Conversion/Constant-Momentary
 - For both Constant->Momentary and Momentary->Constant
- Control/Timing/BeatToSamples
- Control/Triggers/Button
- Control/Triggers/Message

- Math/Functions/degrees-radians
 - To replace both degrees and radians nodes