

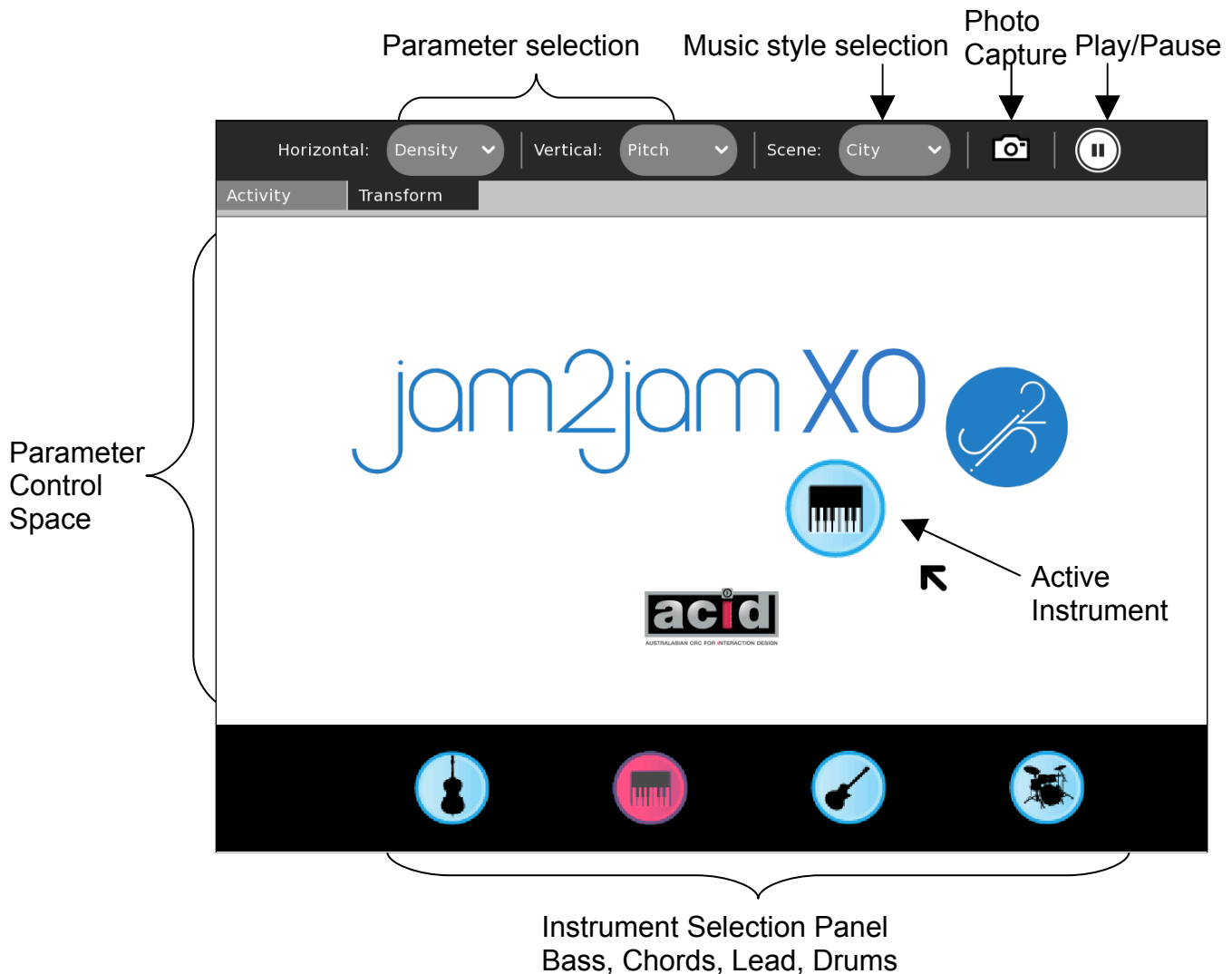


Jam2JamXO guide

Jam2Jam XO is an activity with a game-like interface which facilitates changes in the music such as the complexity of musical activity, or the pitch contour of melodies.

Jam2Jam XO manipulates musical styles by employing generative algorithms. As a solo or collaborative activity, users can play in a virtual ensemble easily and without much musical knowledge or experience.

Jam2Jam XO Interface



Selecting Instruments

The lower portion of the Jam2Jam screen displays images of instruments in a black panel. Selecting one of these instruments will display its image in the control space above. Note that an instrument which has been shared, and appears red in the black panel, cannot be selected.

Parameter Control

The parameter control space is the large area below the menu bar, and above the black instrument panel. One instrument icon is always displayed in this space. Its position reflects the parameter values assigned to that instrument; parameters are assigned on the horizontal and vertical axes.

By default, the horizontal axis is assigned to display 'Density', whilst the vertical axis displays 'Pitch'. Thus the horizontal position of the instrument reflects value of the 'Density' parameter for that instrument, whilst the vertical position reflects the 'Pitch' parameter value. The type of parameter can be changed by selecting a parameter from the 'Horizontal' or 'Vertical' drop-down menus, located in the 'Transform' menu bar.

By moving the instrument in this space, using the mouse, arrow keys or display arrows, you are able to adjust two parameters at a time. The parameter changes will produce an audible difference in the music for that instrumental part.

Selecting Scenes

A 'Scene' is a musical style. By default, Jam2Jam always begins with the 'City' scene. This can be changed by selecting a style from the 'Scene' drop-down menu, located in the 'Transform' menu bar. Scene changing becomes unavailable Jam2Jam is being shared.

Camera

Clicking on the camera icon in the 'Transform' menu bar will replace the background image with a photo taken by the XO. Taking multiple photo's will set the background to cycle through images in time to the music.

Pause / Play

Clicking on the pause / play icon in the 'Transform' menu bar will toggle the playback of the music and any images.

Key Commands

Various keyboard and XO display buttons offer an alternative to using the mouse.

Arrow Keys and XO arrow buttons on the left of the display.	Provide horizontal and vertical movement to the selected instrument.
P	Select the Pitch parameter for horizontal movement.
D	Select the Density parameter for horizontal movement.
L	Select the Length parameter for horizontal movement.
T	Select the Timbre parameter for horizontal movement.
V	Select the Volume parameter for horizontal movement.
Shift + P	Select the Pitch parameter for vertical movement.
Shift + D	Select the Density parameter for vertical movement.
Shift + L	Select the Length parameter for vertical movement.
Shift + T	Select the Timbre parameter for vertical movement.
Shift + V	Select the Volume parameter for vertical movement.
1 and XO display game button <input type="checkbox"/>	Select the Bass Instrument to control.
2 and XO display game button <input checked="" type="checkbox"/>	Select the Chords Instrument to control.
3 and XO display game button <input type="radio"/>	Select the Lead Instrument to control.
4 and XO display game button <input type="checkbox"/>	Select the Drums Instrument to control.

Jamming in a group.

Jam2Jam XO can be used as a collaborative tool, allowing for multiple players in a 'Jam'.

A Jammer can 'Share' a jam by selecting the 'Neighbourhood' option from the 'Share With' button in the 'Activity' tab. When a Jammer 'shares' a jam, they become a kind of 'band leader'. Their Jam2Jam activity will continue to play all the instrumental parts, until other jammers begin to join the shared jam.

When someone joins a shared jam, they take an instrument. For the sharer of the jam this means one instrumental part will stop playing and the instrument will dim to red in the Instrument selection panel. This instrument has been relinquished by the 'band leader'. For the joiner of the jam, this instrument is selected for them to play with. Their XO will play the instrumental part of only that instrument.

Up to four jammers (one per instrument) are able to join a jam. During a jam, jammers can re-select any other available instruments. Note that someone joining a jam will only ever play one instrumental part at a time. The 'band leader' on the other hand, will play all the remaining instrumental parts which aren't being shared.

Notes on networking:

Timing information is communicated between XO's to ensure the jammers stay 'in time' with each other.

Parameter data is also communicated when instruments are shared and relinquished, so as to allow jammers to 'pick up' where the part was last left. The success of this – especially the ability to synchronise in time – will depend on the reliability of the network connection.

Known Issues:

It is recommended to turn the 'Automatic power management' feature in the control panel off. It's activation stops Csound running, which Jam2Jam XO relies on for timing information. The control panel can be accessed by hovering the mouse over the XO icon in the middle of the circle of activities in the 'favourites' view.

Jam2Jam XO has been developed and tested on the XO version 1.0, running Sugar 0.82.1, build 767. Feedback on the performance of Jam2Jam on other XO's, or Sugar environments is welcome.

Acknowledgements

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Appendix I

Adding your own music to Jam2Jam XO

If you are comfortable with producing MIDI files and Audio samples, and you don't mind poking around inside the activity bundle, then adding your own musical style to Jam2Jam XO is relatively straightforward.

MIDI Files

You need to produce four single-track MIDI files. Each track should be given the name of an instrument followed by the '.mid' suffix. i.e. Bass.mid, Chords.mid, Lead.mid and Drums.mid.

Jam2Jam will only pay attention to Note-on/Note-off messages. All other messages such as program changes, pitch bends or continuous controller messages are ignored.

Audio Files

You can provide audio samples for Jam2Jam to play for each instrument. Multiple samples may be provided so a different pitch on an instrument will play a different sample. Each audio file should be in this format:

Channels: Mono
Sample Rate: 22050
Format: AIFF
Loop Points: Optional
MIDI Base Pitch: Required
Filename: Only the '.aif' suffix is required. The rest of the filename is not important, as long as it is unique in relation to the other audio files.

Note that a MIDI Base Pitch is required to be present in the audio file. Jam2Jam uses this pitch to decide which sample to play at which pitch.

Scene Data File

Jam2Jam looks in a text file to gain some extra information about the music. The text file needs to specify the Tempo of the track in beats per minute, the base Key the music is in and the mode (major or minor). The following format should be used:

Tempo = 120

Key = A

Mode = minor

Specifying a 'sharp' key is possible, for example A#. However, 'flat' keys are not, Use the sharp equivalent instead.

The text file should be given the name of your scene, with the '.txt' suffix.

Adding the Music to Jam2Jam XO

Upon launch, Jam2Jam looks in the 'Scenes' directory, within /City inside the activity bundle. i.e. jam2jam.activity/City/Scenes/

At this point, the easiest way to proceed is to examine the directory structure of some of the existing scenes. You should begin by creating another directory in the Scenes folder with the name of your Scene. For example, if you have created a HipHop scene, you should create a directory called 'HipHop' here: jam2jam.activity/City/Scenes/HipHop/ Following this, create the following directory structure within 'HipHop'. The entire directory layout should look something like this:

