

7MU007 - Musical Human-Computer Interaction

The Build

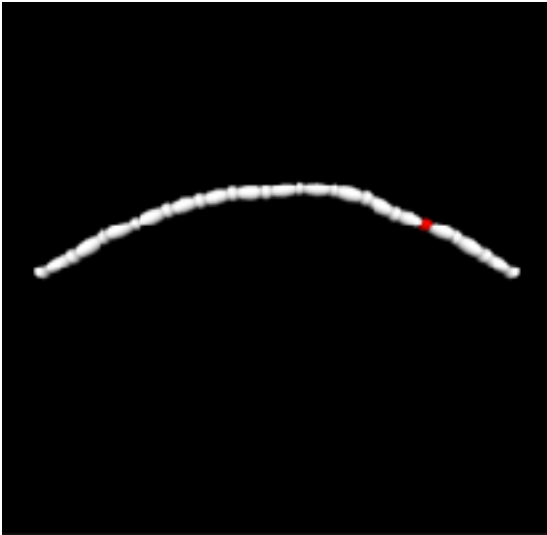
The instrument itself was created from a piece of wood that was cut to a desired length and two guitar strings (D and A string) were attached to the piece of wood by screws. The screws were attached to the piece of wood at different positions to allow usability not to be affected. The strings were wrapped around the screws either side of the wood and tightened to allow a degree of pull and, when plucked, the vibrations could be picked up by the contact microphone that would be attached. Both strings would be attached to the screws at an incline, whereby one side of the string would be slightly up and the other side of the same string slightly down to allow variations in tonality.



A contact microphone was attached on to the piece of wood using double sided tape, close enough to the strings to allow vibrations to be picked up.

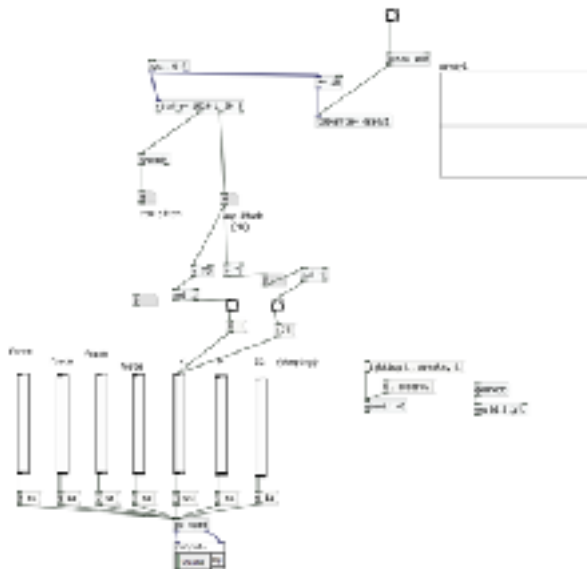
The contact microphone was attached to a 1/4 inch socket, one end of a 1/4 inch guitar lead was used to insert in to the socket and the other end in to a audio interface to complete installation of the instrument. This would then need to be mapped in to pure data to allow the physical modelling to take place.





The design can be played by either plucking the guitar strings, both at once or individually. When the strings are plucked, the vibrations picked up are affected and this can be seen visually being affected on pure data from the graphical representation.

Puredata



Pure data was the desired software used to complete the installation of the project. Pure data allowed physical modelling objects to be created to modulate the vibrations picked up by the contact microphone. The input in the audio settings section of pure data was changed to 'Saffire' to read the input from the audio interface and connected to a 'adc~' object. The pitch and amplitude of the vibration coming through would be detected and sent to parameters to allow modulation of the sound. The modulation can be affected by interacting with the slider objects at the bottom of the patch. The graphical representation can see 2d balls all connected to allow simulation of the plucked string. The 2d balls were created by mass objects and linked together by link objects.