

This simulator has two different methods of use:

The right handside buttons allow you to simulate examples of good hand placement, good squat, and bad squat from a preloaded JSON file.

The left sliders allow you to input your own values and press start to start the simulation.

The sonification aspect for hand position on the barbell is simply changing the frequency from high (very wide) to no sound (normal position) this changes based on the xposition of the hands on the barbell.

The sonification aspect for knee contraction is a clicking sound that increases in BPM when contraction is at its peak, and reduces in BPM when contraction is at its lowest point (rest).

The sonification aspect for back contraction is purely a warning sound that triggers when the contraction is higher than 80 indicating risk of injury.

The sonification aspect for range of motion is another frequency change from a different range since hand position is supposed to be separte from the action it self, low frequency is indicative of low range of movement and high frequency corresponds to the peak of range.

Notes:

There are a few bugs with the sliders, if they do not work properly after using the button examples reset the program and try it again.