The hand gesture detection simulator for stroke rehabilitation therapy generates sonification based on hand movements. It aims to assist individuals in rehabilitating hand movements through audio feedback. This user manual provides instructions on how to use the simulator and experience its various scenarios and data ranges.

First, the user puts both of their hands in front of the simulator screen and performs various hand gestures (matching to stroke rehabilitation exercises) that will be passed into a real-time AI-gesture classification system (classifying hand gesture into one of nine different gestures). The current simulator inputs a sample video (by clicking on Exercise Test 1 button on the left hand side) and generates the corresponding JSON data to pass into the parameters. The most previous motion direction (swipeLeft, swipeRight, swipeUp, and swipeDown) will change specific sine and square wave generations from the simulator which is visible with the sliders (can be changed automatically through JSON data or manually). Furthermore, clicking the Band Music button and increasing the volume will allow the user to hear the sound of a band playing to practice along with. Additionally, clicking on the Saxophone allows the user to hear a reverb filtered, looping saxophone tune to practice their exercises with. Moreover, the right hand's position is stored in an xy grid allowing the user to control the position of the hand in 2D space. The bodyposition button triggers a text-to-speech warning if your body angle is incorrect.

The sonification scheme of this project includes generating audio synthesis using various wave players (sine and square waves) created with different frequencies corresponding to the different glide functions in the four directions that the hand can move. Furthermore, the Saxophone button allows for a reverb filtered audio output to be heard by the user. The text-to-speech library also incorporates sonification of warnings against specific angles.