Source Code

const int trigger1 = 2; //Trigger pin of 1st Sesnor  
const int echo1 = 3; //Echo pin of 1st Sesnor  
const int trigger2 = 4; //Trigger pin of 2nd Sesnor  
const int echo2 = 5;//Echo pin of 2nd Sesnor

long time\_taken;  
int dist,distL,distR;

void setup() {  
Serial.begin(9600);   
    
pinMode(trigger1, OUTPUT);   
pinMode(echo1, INPUT);   
pinMode(trigger2, OUTPUT);   
pinMode(echo2, INPUT);   
}

void calculate\_distance(int trigger, int echo)  
{  
digitalWrite(trigger, LOW);  
delayMicroseconds(2);  
digitalWrite(trigger, HIGH);  
delayMicroseconds(10);  
digitalWrite(trigger, LOW);

time\_taken = pulseIn(echo, HIGH);  
dist= time\_taken\*0.034/2;  
if (dist>50)  
dist = 50;  
}

void loop() { //infinite loopy  
calculate\_distance(trigger1,echo1);  
distL =dist; //get distance of left sensor

calculate\_distance(trigger2,echo2);  
distR =dist; //get distance of right sensor

//Uncomment for debudding  
/\*Serial.print("L=");  
Serial.println(distL);  
Serial.print("R=");  
Serial.println(distR);  
\*/

//Pause Modes -Hold  
if ((distL >40 && distR>40) && (distL <50 && distR<50)) //Detect both hands  
{Serial.println("Play/Pause"); delay (500);}

calculate\_distance(trigger1,echo1);  
distL =dist;

calculate\_distance(trigger2,echo2);  
distR =dist;

//Control Modes  
//Lock Left - Control Mode  
if (distL>=13 && distL<=17)  
{  
  delay(100); //Hand Hold Time  
  calculate\_distance(trigger1,echo1);  
  distL =dist;  
  if (distL>=13 && distL<=17)  
  {  
    Serial.println("Left Locked");  
    while(distL<=40)  
    {  
      calculate\_distance(trigger1,echo1);  
      distL =dist;  
      if (distL<10) //Hand pushed in   
      {Serial.println ("Vup"); delay (300);}  
      if (distL>20) //Hand pulled out  
      {Serial.println ("Vdown"); delay (300);}  
    }  
  }  
}

//Lock Right - Control Mode  
if (distR>=13 && distR<=17)  
{  
  delay(100); //Hand Hold Time  
  calculate\_distance(trigger2,echo2);  
  distR =dist;  
  if (distR>=13 && distR<=17)  
  {  
    Serial.println("Right Locked");  
    while(distR<=40)  
    {  
      calculate\_distance(trigger2,echo2);  
      distR =dist;  
      if (distR<10) //Right hand pushed in  
      {Serial.println ("Rewind"); delay (300);}  
      if (distR>20) //Right hand pulled out  
      {Serial.println ("Forward"); delay (300);}  
  }  
}  
}

delay(200);  
}

**Python Code:**

import serial #Serial imported for Serial communication  
import time #Required to use delay functions  
import pyautogui

ArduinoSerial = serial.Serial('com18',9600) #Create Serial port object called arduinoSerialData  
time.sleep(2) #wait for 2 seconds for the communication to get established

while 1:  
    incoming = str (ArduinoSerial.readline()) #read the serial data and print it as line  
    print incoming  
      
    if 'Play/Pause' in incoming:  
        pyautogui.typewrite(['space'], 0.2)

    if 'Rewind' in incoming:  
        pyautogui.hotkey('ctrl', 'left')

    if 'Forward' in incoming:  
        pyautogui.hotkey('ctrl', 'right')

    if 'Vup' in incoming:  
        pyautogui.hotkey('ctrl', 'down')

    if 'Vdown' in incoming:  
        pyautogui.hotkey('ctrl', 'up')

    incoming = "";