Code explenation

sensors   There are two sensor one that detect the presence of someone on the chair (flex sensor) and one that sense the seating's rotation (potentiometer).
The flex sensor bending and the potentiometer rotation change the resistence value that they send to the wiring board that then gives the value to the Pc to be elaborated.
In our case flex sensor values are less than 70 if the sensor is not bended (no one on the chair) and more than 70 if the sensor is bend (someone is sitting on the chair).
Instead potentiometer angle is from 0 to 204 (the potentiometer has an end so it cannot make a complete 360° turn).

wiring   Data are sent to the computer inside wiring environment that takes the data and put them in a variable. If flex sensor's value is more than 70 , person is sitting wiring gives to processing a numeber (250) is value are less than 70, someone is not sitting, it gives another (251). This is because the both value, of the rotation and the pressure are putted together on the same variable and the value of the flex sensor must be different to the ones of the chair's rotation.

processing   Processing program reads data and if it receive a number equal to 250 it starts playing the audio. The first audio is the name of the square and than according to position values there are the others. The system checks in witch position the person is and than plays the corresponding sound.
When the person stand up, the flex sensor number turns into a 251 and the audio stop playing.

Wiring

```
int sitFlag;
int val;
byte num;
void setup()
{
  sitFlag=0;
  Serial.begin(9600);         // sets the serial port to 9600
}

void loop()
{
  val = analogRead(0);        // chair read analog input pin 0
  num = val/5;                // make it a byte
 if (num >204){
   num = 204;
   }
if (sitFlag == 1){
 Serial.print(num);       // prints the value read
}
  val = analogRead(2);        // pressure read pressure input pin 2
  num = val/5;                //make it a small number


  if (num > 70){             //  you are sitting
    if (sitFlag == 0){        //it thinks you are standing
    sitFlag = 1;            // so set flag to sitting
    Serial.print((byte)250);      // tell processing you are sitting
  }
  }


   if (num < 70){            //  you are standing
    if (sitFlag == 1){        //it thinks you are sitting
    sitFlag = 0;            // so set flag to sitting
    Serial.print((byte)251);      // tell processing you are standing
  }
  }

  //delay(10);               // wait 100ms for next reading

}
```

Processing

```
import pitaru.sonia_v2_9.*;
import processing.serial.*;
Sample x,y;
int value;
int fortime = 0;

Serial port;

//variabili del click
int sflag=0;

//variabili del click
//suoni
Sample campo,chiesa, tommaseo, conservatorio, accademia, rialto, smarco,liston ;
boolean seduto = false;
boolean playIntro = false;

void setup()
{

  size(256, 150);
  println(Serial.list());
  println("a");

  port = new Serial(this, Serial.list()[1], 9600);

  //caricamento suoni
  Sonia.start(this);
  chiesa= new Sample ("chiesa.aif");
  tommaseo= new Sample ("tommaseo.aif");
  conservatorio= new Sample ("conservatorio.aif");
  accademia= new Sample ("accademia.aif");
  rialto= new Sample ("rialto.aif");
  smarco= new Sample ("marco.aif");
  liston=new Sample ("liston.aif");

  campo= new Sample ("stefano1.aif");
}

void draw()
{
  background(255);

  while (port.available() > 0) {//look for sitting

    value = port.read();
 if (value==250){
     seduto=true;
     playIntro = true;
   }
 }
```

```
 if (seduto==false){//if not sitting getout
    return;
  }
println(value);

line(value,0,value,300);

line(204,0,204,300);

  if (playIntro ==true){// start playing intro
    playIntro = false;
    suoni(campo);
    setTimeInSeconds(1); //  set time to wiat in seconds
    return;
  }

  if (checkTime() == 0){// keep playing? and do not check for chair direction sounds
    return;
  }

  println(value);


  if ((value>0) && (value<26)){
    suoni(rialto);
    return;
  }

  if ((value>32) && (value<58)){
    suoni(chiesa);
    return;
  }
  if ((value>72) && (value<95)){
    suoni(smarco);
    return;
  }
  if ((value>95) && (value<116)){
    suoni(tommaseo);
    return;
  }
  if ((value>120) && (value<144)){
    suoni(conservatorio);
    return;
  }

  if ((value>150) && (value<158)){
    suoni(accademia);
    return;
  }
```

```
sflag=0;
  liston.stop();
  rialto.stop();
  chiesa.stop();
  smarco.stop();
  tommaseo.stop();
  conservatorio.stop();
  accademia.stop();
}

//----------------------------
void setTimeInSeconds(int aTime){
  fortime = millis() + (aTime * 1000);
}


int checkTime(){

  if ( millis()< fortime ){
    return 0;
  }
  else {
    return 1;
  }
}


void suoni(Sample x){


  if (sflag==0){
    sflag=1;
    x.setVolume(4.0);
    x.play();


  }
}

public void stop() {
  Sonia.stop();
  super.stop();
}
```