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// IMA NYU Shanghai
// Interaction Lab
```

```
/**
```

```
    This example is to send multiple values from Processing to Arduino.
    You can find the Processing example file in the same folder which works with
    this Arduino file.
```

```
    Please note that the echo case (when char c is 'e' in the getSerialData
    function below)
```

```
    checks if Arduino is receiving the correct bytes from the Processing sketch
    by sending the values array back to the Processing sketch.
```

```
*/
```

```
#define NUM_OF_VALUES 3    /** YOU MUST CHANGE THIS ACCORDING TO YOUR PROJECT
**/
```

```
/** DO NOT REMOVE THESE **/
```

```
int tempValue = 0;
int valueIndex = 0;
```

```
/* This is the array of values storing the data from Processing. */
int values[NUM_OF_VALUES];
```

```
void setup() {
    Serial.begin(9600);
}
```

```
void loop() {
    getSerialData();

    if (values[0] == 1) {
        tone(7, sqrt(pow(values[1], 2) + pow(values[2], 2)));
    } else {
        noTone(7);
    }
}
```

```
    // add your code here
    // use elements in the values array
    // values[0]
    // values[1]
}
```

```
//recieve serial data from Processing
void getSerialData() {
```

```

if (Serial.available()) {
  char c = Serial.read();
  //switch - case checks the value of the variable in the switch function
  //in this case, the char c, then runs one of the cases that fit the value
of the variable
  //for more information, visit the reference page: https://www.arduino.cc/en/Reference/SwitchCase
  switch (c) {
    //if the char c from Processing is a number between 0 and 9
    case '0'...'9':
      //save the value of char c to tempValue
      //but simultaneously rearrange the existing values saved in tempValue
      //for the digits received through char c to remain coherent
      //if this does not make sense and would like to know more, send an
email to me!
      tempValue = tempValue * 10 + c - '0';
      break;
    //if the char c from Processing is a comma
    //indicating that the following values of char c is for the next element
in the values array
    case ',':
      values[valueIndex] = tempValue;
      //reset tempValue value
      tempValue = 0;
      //increment valueIndex by 1
      valueIndex++;
      break;
    //if the char c from Processing is character 'n'
    //which signals that it is the end of data
    case 'n':
      //save the tempValue
      //this will be the last element in the values array
      values[valueIndex] = tempValue;
      //reset tempValue and valueIndex values
      //to clear out the values array for the next round of readings from
Processing
      tempValue = 0;
      valueIndex = 0;
      break;
    //if the char c from Processing is character 'e'
    //it is signalling for the Arduino to send Processing the elements saved
in the values array
    //this case is triggered and processed by the echoSerialData function in
the Processing sketch
    case 'e': // to echo
      for (int i = 0; i < NUM_OF_VALUES; i++) {
        Serial.print(values[i]);
        if (i < NUM_OF_VALUES - 1) {

```

```
        Serial.print(',');
    }
    else {
        Serial.println();
    }
}
break;
}
}
}
```