

Resultados:

Las detecciones se clasifican como notas semi-correctamente detectadas cuando el margen de error es muy pequeño (semicorcheas detectadas como corcheas, una posición por encima o por debajo de la nota real y detección de notas inexistentes producidas ruido).

### Prueba 1:

Nombre del archivo: astronomia.jpg



### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 80

Cantidad de alteraciones: 0

### Procesamiento

Notas correctamente detectadas: 80

Notas incorrectamente detectadas: 0

Notas semi-correctamente detectadas: 0

Cantidad de alteraciones mal detectadas: 0

Detecciones erróneas/ruido: 0

Promedio cuantas están bien: 100%

## Prueba 2:

Nombre del archivo: melodia1.jpg



### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 51

Cantidad de alteraciones: 1

### Procesamiento

Notas correctamente detectadas: 18

Notas incorrectamente detectadas: 33

Notas semi-correctamente detectadas: 33

Cantidad de alteraciones mal detectadas: 1

Detecciones erróneas/ruido: 0

Promedio cuantas están bien: 35.294%

```

[(82, 97, 19, 15), 3, 'Negra', 'A']
[(154, 83, 20, 15), 5, 'Corchea', 'C']
[(207, 67, 19, 17), 5, 'Corchea', 'E']
[(259, 60, 19, 16), 9, 'Corchea', 'F']
[(300, 68, 19, 16), 9, 'Corchea', 'E']
[(340, 76, 19, 15), 9, 'Corchea', 'D']
[(380, 83, 19, 15), 9, 'Corchea', 'C']
[(419, 90, 20, 16), 4, 'Corchea', 'B']
[(473, 96, 19, 16), 4, 'Corchea', 'A']
[(548, 105, 19, 15), 11, 'Corchea', 'G#']
[(601, 119, 20, 15), 11, 'Corchea', 'F']
[(653, 105, 19, 15), 11, 'Corchea', 'G']
[(706, 97, 19, 16), 11, 'Corchea', 'A']
[(758, 90, 20, 16), 8, 'Corchea', 'B']
[(799, 83, 19, 15), 8, 'Corchea', 'C']
[(839, 75, 19, 16), 8, 'Corchea', 'D']
[(879, 90, 20, 16), 8, 'Corchea', 'B']
[(920, 83, 19, 15), 6, 'Corchea', 'C']
[(972, 105, 18, 15), 6, 'Corchea', 'G']
[(1046, 97, 20, 15), 2, 'Negra', 'A']
[(1118, 46, 20, 16), 10, 'Corchea', 'B']
[(1162, 54, 20, 15), 10, 'Corchea', 'G#']
[(1203, 61, 18, 15), 10, 'Corchea', 'F']
[(1242, 68, 19, 16), 10, 'Corchea', 'E']
[(1282, 76, 19, 15), 7, 'Corchea', 'D']
[(1323, 68, 19, 16), 7, 'Corchea', 'E']
[(1363, 60, 19, 16), 7, 'Corchea', 'F']
[(1403, 76, 19, 15), 7, 'Corchea', 'D']
[(1443, 67, 20, 17), 1, 'Negra', 'E']

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Primer sistema

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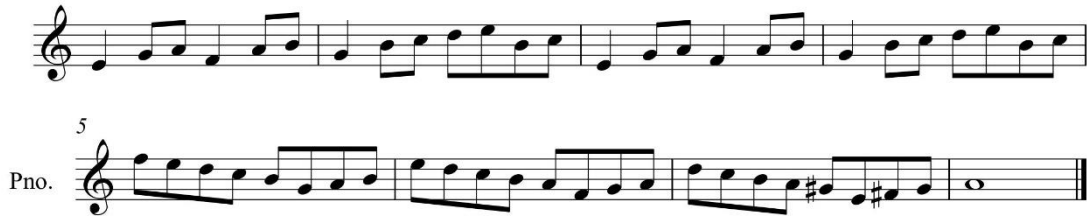
[(82, 120, 19, 15), 13, 'Negra', 'E']
[(165, 54, 19, 15), 18, 'Corchea', 'G']
[(210, 61, 19, 16), 18, 'Corchea', 'F']
[(256, 68, 19, 16), 18, 'Corchea', 'E']
[(302, 76, 19, 15), 18, 'Corchea', 'D']
[(346, 83, 20, 16), 19, 'Corchea', 'B']
[(393, 76, 19, 15), 19, 'Corchea', 'D']
[(438, 67, 20, 17), 19, 'Corchea', 'E']
[(484, 83, 19, 16), 19, 'Corchea', 'B']
[(530, 76, 19, 15), 14, 'Negra', 'D']
[(634, 111, 19, 16), 16, 'Negra', 'F']
[(716, 61, 20, 16), 20, 'Corchea', 'F']
[(761, 68, 20, 16), 20, 'Corchea', 'E']
[(807, 76, 19, 15), 20, 'Corchea', 'D']
[(853, 83, 19, 16), 20, 'Corchea', 'B']
[(897, 91, 20, 15), 17, 'Corchea', 'B']
[(944, 83, 20, 16), 17, 'Corchea', 'B']
[(989, 76, 19, 15), 17, 'Corchea', 'D']
[(1035, 91, 19, 15), 17, 'Corchea', 'B']
[(1080, 82, 20, 17), 15, 'Negra', 'C']
[(1185, 120, 19, 15), 12, 'Negra', 'E']
[(1270, 99, 19, 15), 21, 'BlancaPuntillo', 'A']

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Segundo sistema

### Prueba 3:

Nombre del archivo: melodia2.jpg



#### Configuración

Iteraciones = 4

#### Propiedades de la partitura

Cantidad de notas en la partitura: 51

Cantidad de alteraciones: 2

#### Procesamiento

Notas correctamente detectadas: 46

Notas incorrectamente detectadas: 5

Notas semi-correctamente detectadas: 5

Cantidad de alteraciones mal detectadas: 0

Detecciones erróneas/ruido: 1

Promedio cuantas están bien: 90.196%

[(82, 119, 19, 15), 3, 'Negra', 'F']  
 [(148, 105, 19, 14), 7, 'Corchea', 'G']  
 [(197, 97, 20, 16), 7, 'Corchea', 'A']  
 [(246, 112, 19, 14), 5, 'Negra', 'F']  
 [(313, 97, 19, 15), 9, 'Corchea', 'A']  
 [(360, 90, 20, 16), 9, 'Corchea', 'B']  
 [(431, 105, 19, 15), 6, 'Negra', 'G']  
 [(497, 90, 20, 16), 11, 'Corchea', 'B']  
 [(546, 82, 19, 16), 11, 'Corchea', 'C']  
 [(595, 76, 19, 15), 14, 'Corchea', 'D']  
 [(643, 67, 19, 17), 14, 'Corchea', 'E']  
 [(691, 90, 20, 16), 14, 'Corchea', 'B']  
 [(740, 83, 19, 15), 14, 'Corchea', 'C']  
 [(810, 119, 19, 15), 1, 'Negra', 'F']  
 [(876, 105, 19, 14), 8, 'Corchea', 'G']  
 [(926, 97, 19, 16), 8, 'Corchea', 'A']  
 [(973, 112, 20, 14), 4, 'Negra', 'F']  
 [(1041, 97, 19, 15), 10, 'Corchea', 'A']  
 [(1089, 90, 19, 16), 10, 'Corchea', 'B']  
 [(1159, 105, 18, 14), 2, 'Negra', 'G']  
 [(1226, 90, 19, 16), 12, 'Corchea', 'B']  
 [(1275, 82, 19, 16), 12, 'Corchea', 'C']  
 [(1322, 76, 19, 15), 13, 'Corchea', 'D']  
 [(1371, 67, 20, 17), 13, 'Corchea', 'E']  
 [(1419, 90, 20, 16), 13, 'Corchea', 'B']  
 [(1468, 83, 19, 15), 13, 'Corchea', 'C']

Primer sistema

[(0, 0, 15, 20), 21, 'Redonda', 'B']  
 [(82, 61, 20, 16), 19, 'Corchea', 'F']  
 [(130, 68, 19, 16), 19, 'Corchea', 'E']  
 [(177, 76, 19, 15), 19, 'Corchea', 'D']  
 [(224, 83, 19, 16), 19, 'Corchea', 'B']  
 [(271, 91, 19, 15), 15, 'Corchea', 'B']  
 [(319, 105, 19, 15), 15, 'Corchea', 'G']  
 [(366, 98, 19, 15), 15, 'Corchea', 'A']  
 [(413, 91, 19, 15), 15, 'Corchea', 'B']  
 [(482, 67, 19, 17), 20, 'Corchea', 'E']  
 [(529, 76, 19, 15), 20, 'Corchea', 'D']  
 [(576, 83, 19, 16), 20, 'Corchea', 'B']  
 [(624, 91, 19, 15), 20, 'Corchea', 'B']  
 [(671, 98, 20, 15), 17, 'Corchea', 'A']  
 [(718, 112, 20, 15), 17, 'Corchea', 'F']  
 [(765, 105, 19, 15), 17, 'Corchea', 'G']  
 [(812, 98, 20, 15), 17, 'Corchea', 'A']  
 [(881, 76, 19, 15), 18, 'Corchea', 'D']  
 [(929, 83, 19, 16), 18, 'Corchea', 'B']  
 [(976, 91, 19, 15), 18, 'Corchea', 'B']  
 [(1023, 98, 19, 15), 18, 'Corchea', 'A']  
 [(1071, 105, 19, 15), 16, 'Corchea', 'G#']  
 [(1117, 120, 19, 15), 16, 'Corchea', 'E']  
 [(1165, 112, 19, 16), 16, 'Corchea', 'F#']  
 [(1212, 105, 19, 15), 16, 'Corchea', 'G']  
 [(1284, 99, 25, 15), 21, 'Redonda', 'A']

Segundo sistema

#### Prueba 4:

Nombre del archivo: melodia7.jpg



#### Configuración

Iteraciones = 4

#### Propiedades de la partitura

Cantidad de notas en la partitura: 47

Cantidad de alteraciones: 5

#### Procesamiento

Notas correctamente detectadas: 44

Notas incorrectamente detectadas: 3

Notas semi-correctamente detectadas: 3

Cantidad de alteraciones mal detectadas: 2

Detecciones erróneas/ruido: 1

Promedio cuantas están bien: 97.872%

```

[(83, 149, 20, 15), 7, 'Corchea', 'A']
[(130, 97, 19, 16), 7, 'Corchea', 'A']
[(176, 141, 19, 16), 7, 'Corchea', 'B']
[(223, 97, 19, 16), 7, 'Corchea', 'A']
[(269, 134, 19, 15), 8, 'Corchea', 'C']
[(317, 97, 19, 16), 8, 'Corchea', 'A']
[(363, 68, 20, 16), 8, 'Corchea', 'E']
[(409, 97, 20, 16), 8, 'Corchea', 'A']
[(480, 83, 19, 15), 4, 'Corchea', 'C#']
[(526, 97, 20, 16), 4, 'Corchea', 'A']
[(572, 105, 19, 15), 4, 'Corchea', 'G']
[(619, 112, 20, 14), 4, 'Corchea', 'F']
[(665, 119, 20, 16), 3, 'Corchea', 'E']
[(713, 134, 20, 15), 3, 'Corchea', 'C#']
[(760, 126, 19, 16), 3, 'Corchea', 'D']
[(805, 119, 20, 16), 3, 'Corchea', 'E']
[(875, 112, 19, 15), 5, 'Corchea', 'F']
[(921, 149, 20, 15), 5, 'Corchea', 'A']
[(968, 141, 19, 16), 5, 'Corchea', 'B']
[(1019, 134, 19, 16), 5, 'Corchea', 'C#']
[(1066, 126, 20, 16), 6, 'Corchea', 'D']
[(1112, 134, 19, 16), 6, 'Corchea', 'C#']
[(1163, 149, 20, 15), 6, 'Corchea', 'A#']
[(1210, 96, 19, 17), 6, 'Corchea', 'A#']
[(1278, 75, 19, 16), 2, 'Negra', 'D']
[(1343, 105, 18, 14), 1, 'Negra', 'G']
[(1408, 91, 21, 17), 9, 'Blanca', 'B']

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Primer sistema

```

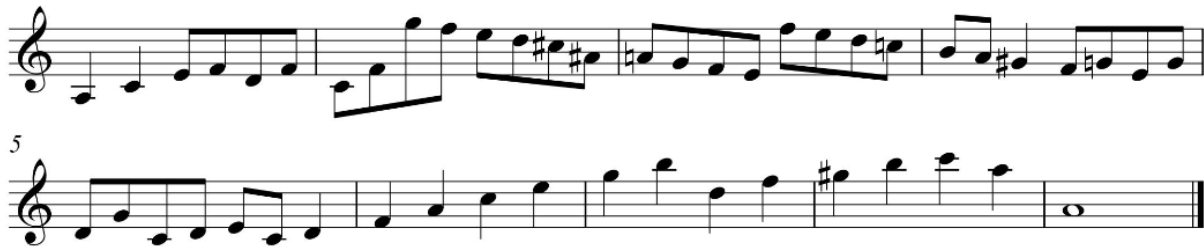
[(0, 0, 15, 19), 16, 'Redonda', 'B']
[(83, 82, 19, 17), 11, 'Negra', 'C']
[(149, 112, 19, 15), 12, 'Negra', 'F']
[(217, 99, 19, 14), 16, 'Blanca', 'A']
[(348, 67, 19, 17), 13, 'Corchea', 'E']
[(396, 76, 19, 15), 13, 'Corchea', 'D']
[(443, 67, 20, 17), 13, 'Corchea', 'E']
[(491, 83, 20, 16), 13, 'Corchea', 'B']
[(539, 67, 19, 17), 15, 'Corchea', 'E']
[(586, 91, 19, 15), 15, 'Corchea', 'B']
[(634, 67, 19, 17), 15, 'Corchea', 'E']
[(681, 98, 19, 15), 15, 'Corchea', 'A']
[(750, 61, 20, 16), 14, 'Corchea', 'F']
[(798, 76, 19, 15), 14, 'Corchea', 'D']
[(846, 68, 20, 16), 14, 'Corchea', 'E']
[(893, 61, 20, 16), 14, 'Corchea', 'F#']
[(944, 55, 19, 16), 16, 'Blanca', 'G']
[(1074, 76, 20, 15), 9, 'Negra', 'D']
[(1141, 82, 19, 17), 10, 'Negra', 'C']
[(1209, 92, 20, 17), 16, 'Blanca', 'B']
[(1345, 106, 22, 16), 16, 'Redonda', 'G']

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Segundo sistema

### Prueba 5:

Nombre del archivo: melodia8.jpg



### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 49

Cantidad de alteraciones: 5

### Procesamiento

Notas correctamente detectadas: 41

Notas incorrectamente detectadas: 8

Notas semi-correctamente detectadas: 8

Cantidad de alteraciones mal detectadas: 3

Detecciones erróneas/ruido: 1

Promedio cuantas están bien: 83.673%



```

[(82, 149, 20, 15), 3, 'Negra', 'A']
[(145, 134, 19, 15), 2, 'Negra', 'C']
[(207, 119, 20, 16), 7, 'Corchea', 'E']
[(253, 112, 19, 15), 7, 'Corchea', 'F']
[(299, 126, 19, 15), 7, 'Corchea', 'D']
[(344, 112, 19, 15), 7, 'Corchea', 'F']
[(410, 134, 20, 16), 10, 'Corchea', 'C']
[(456, 112, 19, 15), 10, 'Corchea', 'F']
[(502, 53, 19, 16), 10, 'Corchea', 'G']
[(547, 61, 19, 15), 10, 'Corchea', 'F']
[(591, 67, 20, 17), 9, 'Corchea', 'E']
[(638, 76, 18, 15), 9, 'Corchea', 'D']
[(683, 83, 19, 15), 9, 'Corchea', 'C#']
[(729, 97, 19, 16), 9, 'Corchea', 'A#']
[(796, 97, 20, 16), 6, 'Corchea', 'A#']
[(841, 105, 19, 15), 6, 'Corchea', 'G']
[(887, 112, 19, 15), 6, 'Corchea', 'F']
[(932, 119, 20, 15), 6, 'Corchea', 'F']
[(976, 60, 20, 16), 8, 'Corchea', 'F']
[(1023, 68, 19, 16), 8, 'Corchea', 'E']
[(1068, 76, 19, 15), 8, 'Corchea', 'D']
[(1114, 83, 19, 15), 8, 'Corchea', 'C#']
[(1180, 90, 20, 16), 4, 'Corchea', 'B']
[(1226, 97, 20, 15), 4, 'Corchea', 'A']
[(1272, 105, 18, 14), 1, 'Negra', 'G#']
[(1335, 112, 19, 15), 5, 'Corchea', 'F']
[(1380, 105, 18, 15), 5, 'Corchea', 'G#']
[(1425, 119, 19, 15), 5, 'Corchea', 'F']
[(1470, 105, 19, 15), 5, 'Corchea', 'G']

```

Primer sistema

```

[(0, 0, 12, 26), 26, 'Blanca', 'A']
[(82, 127, 19, 15), 25, 'Corchea', 'D']
[(130, 105, 19, 15), 25, 'Corchea', 'G']
[(179, 135, 20, 15), 25, 'Corchea', 'C']
[(228, 127, 19, 15), 25, 'Corchea', 'D']
[(277, 120, 18, 15), 24, 'Corchea', 'E']
[(324, 135, 20, 15), 24, 'Corchea', 'C']
[(373, 127, 20, 15), 17, 'Negra', 'D']
[(462, 112, 20, 15), 18, 'Negra', 'F']
[(530, 98, 19, 14), 14, 'Negra', 'A']
[(597, 82, 19, 17), 16, 'Negra', 'C']
[(663, 67, 20, 17), 13, 'Negra', 'E']
[(753, 54, 19, 15), 12, 'Negra', 'G']
[(820, 39, 20, 17), 22, 'Negra', 'C']
[(888, 76, 19, 15), 15, 'Negra', 'D']
[(955, 61, 20, 16), 19, 'Negra', 'F']
[(1045, 54, 19, 15), 11, 'Negra', 'G#']
[(1113, 39, 19, 17), 21, 'Negra', 'C']
[(1180, 32, 19, 16), 23, 'Negra', 'D']
[(1247, 47, 20, 16), 20, 'Negra', 'A']
[(1340, 99, 25, 15), 26, 'Redonda', 'A']

```

Segundo sistema

### Prueba 6:

Nombre del archivo: melodia10.jpg



### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 67

Cantidad de alteraciones: 6

### Procesamiento

Notas correctamente detectadas: 60

Notas incorrectamente detectadas: 7

Notas semi-correctamente detectadas: 7

Cantidad de alteraciones mal detectadas: 1

Detecciones erróneas/ruido: 2

Promedio cuantas están bien: 89.552%

```

[(83, 67, 19, 17), 1, 'Corchea', 'E']
[(126, 76, 18, 15), 1, 'Corchea', 'D']
[(168, 67, 19, 17), 1, 'Corchea', 'E']
[(211, 83, 19, 15), 1, 'Corchea', 'C']
[(253, 67, 20, 17), 4, 'Corchea', 'E']
[(296, 90, 20, 16), 4, 'Corchea', 'B']
[(340, 67, 19, 17), 4, 'Corchea', 'E']
[(382, 97, 19, 16), 4, 'Corchea', 'A']
[(446, 67, 20, 17), 6, 'Corchea', 'E']
[(489, 105, 19, 15), 6, 'Corchea', 'G']
[(532, 67, 20, 17), 6, 'Corchea', 'E']
[(575, 97, 20, 16), 6, 'Corchea', 'A']
[(618, 67, 19, 17), 3, 'Corchea', 'E']
[(661, 90, 19, 16), 3, 'Corchea', 'B']
[(703, 67, 20, 17), 3, 'Corchea', 'E']
[(746, 83, 19, 15), 3, 'Corchea', 'C']
[(811, 68, 20, 16), 8, 'Corchea', 'E']
[(853, 119, 20, 15), 8, 'Corchea', 'F']
[(897, 68, 19, 16), 8, 'Corchea', 'E']
[(939, 112, 20, 15), 8, 'Corchea', 'F#']
[(982, 67, 19, 17), 7, 'Corchea', 'E']
[(1024, 105, 19, 15), 7, 'Corchea', 'G#']
[(1067, 67, 20, 17), 7, 'Corchea', 'E']
[(1110, 97, 20, 16), 7, 'Corchea', 'A']
[(1174, 60, 20, 16), 2, 'Corchea', 'F#']
[(1218, 68, 19, 16), 2, 'Corchea', 'E']
[(1260, 60, 19, 16), 2, 'Corchea', 'F']
[(1303, 76, 19, 15), 2, 'Corchea', 'D']
[(1346, 60, 19, 16), 5, 'Corchea', 'F']
[(1389, 83, 20, 15), 5, 'Corchea', 'C']
[(1431, 60, 19, 16), 5, 'Corchea', 'F']
[(1474, 90, 19, 16), 5, 'Corchea', 'B']

```

#### Primer sistema

```

[(0, 0, 15, 19), 13, 'Redonda', 'B']
[(82, 61, 20, 16), 10, 'Corchea', 'F']
[(171, 98, 19, 15), 10, 'Corchea', 'A']
[(259, 61, 19, 16), 10, 'Corchea', 'F']
[(347, 105, 19, 15), 10, 'Corchea', 'G#']
[(436, 61, 20, 16), 12, 'Corchea', 'F']
[(524, 112, 19, 16), 12, 'Corchea', 'F']
[(612, 61, 20, 16), 12, 'Corchea', 'F']
[(700, 120, 19, 15), 12, 'Corchea', 'E']
[(811, 61, 19, 16), 11, 'Corchea', 'F']
[(899, 112, 20, 16), 11, 'Corchea', 'F']
[(987, 61, 19, 16), 11, 'Corchea', 'F']
[(1076, 105, 19, 15), 11, 'Corchea', 'G#']
[(1163, 61, 20, 16), 9, 'Corchea', 'F']
[(1252, 98, 20, 15), 9, 'Corchea', 'A']
[(1340, 61, 20, 16), 9, 'Corchea', 'F']
[(1429, 91, 19, 15), 9, 'Corchea', 'B']

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#### Segundo sistema

```

[(0, 0, 17, 19), 18, 'Redonda', 'B']
[(83, 82, 19, 16), 16, 'Corchea', 'B']
[(148, 75, 20, 16), 16, 'Corchea', 'D']
[(215, 82, 19, 16), 16, 'Corchea', 'B']
[(280, 90, 19, 16), 16, 'Corchea', 'B']
[(346, 97, 20, 15), 15, 'Corchea', 'A']
[(412, 104, 19, 15), 15, 'Corchea', 'G#']
[(478, 97, 19, 15), 15, 'Corchea', 'A']
[(543, 90, 19, 16), 15, 'Corchea', 'B']
[(630, 82, 20, 16), 14, 'Corchea', 'B']
[(697, 75, 19, 16), 14, 'Corchea', 'D']
[(763, 67, 19, 16), 14, 'Corchea', 'E']
[(829, 75, 19, 16), 14, 'Corchea', 'D']
[(895, 67, 19, 16), 17, 'Corchea', 'E']
[(960, 82, 19, 16), 17, 'Corchea', 'B']
[(1026, 67, 19, 16), 17, 'Corchea', 'E']
[(1091, 90, 19, 16), 17, 'Corchea', 'B']
[(1180, 67, 19, 16), 13, 'Corchea', 'E']
[(1246, 97, 18, 15), 13, 'Corchea', 'A']
[(1312, 99, 21, 14), 18, 'BlancaPuntillo', 'A']

```

#### Tercer sistema

## Prueba 7:

Nombre del archivo: takefive.jpg

Keyboard  Musical notation for the Keyboard part, measures 1-4. The key signature has one sharp (F#) and the time signature is 5/4. The melody starts with a whole rest, followed by a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5. A repeat sign follows, then a quarter note D5, a quarter note E5, a quarter note F#5, and a quarter note G5. The melody continues with a quarter note F#5, a quarter note E5, a quarter note D5, and a quarter note C5. The part ends with a quarter note B4, a quarter note A4, and a quarter note G4.

5 Kbd.  Musical notation for the Kbd. part, measures 5-8. The melody starts with a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5. A repeat sign follows, then a quarter note D5, a quarter note E5, a quarter note F#5, and a quarter note G5. The melody continues with a quarter note F#5, a quarter note E5, a quarter note D5, and a quarter note C5. The part ends with a quarter note B4, a quarter note A4, and a quarter note G4.

10 Kbd.  Musical notation for the Kbd. part, measures 10-13. The melody starts with a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5. A repeat sign follows, then a quarter note D5, a quarter note E5, a quarter note F#5, and a quarter note G5. The melody continues with a quarter note F#5, a quarter note E5, a quarter note D5, and a quarter note C5. The part ends with a quarter note B4, a quarter note A4, and a quarter note G4.

14 Kbd.  Musical notation for the Kbd. part, measures 14-17. The melody starts with a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5. A repeat sign follows, then a quarter note D5, a quarter note E5, a quarter note F#5, and a quarter note G5. The melody continues with a quarter note F#5, a quarter note E5, a quarter note D5, and a quarter note C5. The part ends with a quarter note B4, a quarter note A4, and a quarter note G4.

### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 90

Cantidad de alteraciones: 12

### Procesamiento

Notas correctamente detectadas: 81

Notas incorrectamente detectadas: 9

Notas semi-correctamente detectadas: 9

Cantidad de alteraciones mal detectadas: 6

Detecciones erróneas/ruido: 1

Promedio cuantas están bien: 90,0 %

```

[(272, 141, 20, 15), 9, 'Corchea', 'B']
[(316, 126, 20, 16), 9, 'Corchea', 'D']
[(360, 119, 19, 16), 9, 'Corchea', 'E']
[(403, 105, 18, 15), 9, 'Corchea', 'G']
[(497, 97, 19, 16), 8, 'Corchea', 'A']
[(541, 97, 19, 16), 8, 'Corchea', 'A#']
[(585, 97, 19, 16), 8, 'Corchea', 'A#']
[(627, 105, 19, 15), 8, 'Corchea', 'G']
[(670, 119, 21, 15), 5, 'Negra', 'F']
[(731, 141, 20, 15), 6, 'Negra', 'B']
[(791, 126, 20, 15), 4, 'Negra', 'D']
[(876, 120, 19, 16), 10, 'BlancaPuntillo', 'E']
[(995, 105, 19, 14), 1, 'Negra', 'G']
[(1055, 126, 20, 15), 3, 'Negra', 'D']
[(1140, 120, 19, 16), 10, 'BlancaPuntillo', 'E']
[(1259, 125, 19, 16), 2, 'Negra', 'D']
[(1319, 149, 20, 15), 7, 'Negra', 'A']
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#### Primer sistema

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[(83, 67, 19, 17), 43, 'Corchea', 'E']
[(120, 53, 20, 16), 45, 'Negra', 'G']
[(172, 67, 21, 17), 42, 'Corchea', 'E']
[(211, 82, 20, 16), 38, 'Negra', 'C']
[(264, 97, 20, 16), 47, 'Corchea', 'A']
[(302, 90, 19, 15), 47, 'Corchea', 'B']
[(341, 83, 19, 15), 47, 'Corchea', 'C']
[(381, 75, 19, 16), 47, 'Corchea', 'Db']
[(441, 75, 19, 16), 40, 'Corchea', 'D#']
[(482, 61, 19, 15), 44, 'Negra', 'F#']
[(534, 75, 20, 16), 39, 'Corchea', 'D']
[(573, 89, 20, 16), 36, 'Negra', 'B']
[(626, 105, 19, 15), 46, 'Corchea', 'G']
[(664, 97, 20, 16), 46, 'Corchea', 'A']
[(707, 97, 19, 16), 46, 'Corchea', 'A#']
[(744, 90, 19, 15), 46, 'Corchea', 'B']
[(803, 82, 20, 16), 34, 'Corchea', 'C']
[(842, 67, 19, 17), 41, 'Negra', 'E']
[(895, 82, 19, 16), 37, 'Corchea', 'C']
[(933, 96, 19, 16), 35, 'Negra', 'A#']
[(985, 112, 20, 14), 48, 'Corchea', 'F#']
[(1024, 97, 19, 16), 48, 'Corchea', 'A']
[(1061, 76, 19, 15), 48, 'Corchea', 'D']
[(1100, 83, 19, 15), 48, 'Corchea', 'C']
[(1160, 91, 21, 17), 50, 'BlancaPuntillo', 'B']
[(1266, 141, 19, 15), 49, 'Corchea', 'B']
[(1304, 126, 19, 16), 49, 'Corchea', 'D']
[(1342, 120, 19, 15), 49, 'Corchea', 'E']
[(1380, 105, 18, 15), 49, 'Corchea', 'G']

```

#### Tercer sistema

```

[(0, 0, 15, 20), 19, 'Redonda', 'B']
[(85, 143, 21, 16), 19, 'BlancaPuntillo', 'A']
[(198, 141, 19, 16), 18, 'Corchea', 'B']
[(239, 127, 19, 15), 18, 'Corchea', 'D']
[(279, 120, 19, 15), 18, 'Corchea', 'E']
[(320, 105, 19, 15), 18, 'Corchea', 'G']
[(383, 98, 19, 15), 17, 'Corchea', 'A']
[(426, 98, 19, 15), 17, 'Corchea', 'A#']
[(467, 98, 19, 15), 17, 'Corchea', 'A#']
[(507, 105, 19, 15), 17, 'Corchea', 'G']
[(548, 120, 19, 15), 11, 'Negra', 'E']
[(606, 141, 19, 16), 16, 'Negra', 'B']
[(662, 127, 19, 15), 14, 'Negra', 'D']
[(743, 120, 20, 17), 19, 'BlancaPuntillo', 'E']
[(855, 105, 19, 15), 12, 'Negra', 'G']
[(912, 127, 19, 15), 10, 'Negra', 'D']
[(993, 120, 20, 17), 19, 'BlancaPuntillo', 'E']
[(1105, 112, 20, 15), 15, 'Negra', 'F#']
[(1162, 127, 19, 15), 13, 'Negra', 'D']
[(1243, 120, 19, 17), 19, 'BlancaPuntillo', 'E']

```

#### Segundo sistema

```

[(83, 67, 19, 16), 25, 'Corchea', 'E']
[(123, 53, 20, 16), 19, 'Negra', 'G']
[(181, 67, 19, 16), 20, 'Corchea', 'E']
[(223, 81, 19, 17), 28, 'Negra', 'C']
[(280, 97, 19, 15), 33, 'Corchea', 'A']
[(321, 90, 19, 16), 33, 'Corchea', 'B']
[(362, 82, 20, 16), 33, 'Corchea', 'B']
[(404, 75, 19, 16), 33, 'Corchea', 'Db']
[(468, 75, 19, 16), 30, 'Corchea', 'D#']
[(509, 60, 19, 16), 26, 'Negra', 'F#']
[(566, 75, 20, 16), 29, 'Negra', 'D']
[(608, 90, 19, 16), 23, 'Negra', 'B']
[(665, 104, 20, 15), 32, 'Corchea', 'G']
[(707, 97, 19, 15), 32, 'Corchea', 'A']
[(749, 97, 19, 15), 32, 'Corchea', 'A#']
[(790, 90, 19, 16), 32, 'Corchea', 'B']
[(852, 81, 20, 17), 21, 'Corchea', 'C']
[(895, 67, 19, 16), 24, 'Negra', 'E']
[(952, 81, 19, 17), 27, 'Corchea', 'C']
[(994, 97, 19, 14), 22, 'Negra', 'A#']
[(1050, 111, 20, 15), 31, 'Corchea', 'F#']
[(1092, 104, 19, 16), 31, 'Corchea', 'G']
[(1133, 104, 20, 16), 31, 'Corchea', 'G#']
[(1175, 97, 20, 15), 31, 'Corchea', 'A']
[(1239, 91, 21, 17), 34, 'BlancaPuntillo', 'B']

```

#### Cuarto sistema

### Prueba 8:

Nombre del archivo: sariassong.jpg



### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 56

Cantidad de alteraciones: 0

### Procesamiento

Notas correctamente detectadas: 38

Notas incorrectamente detectadas: 18

Notas semi-correctamente detectadas: 17

Cantidad de alteraciones mal detectadas: 0

Detecciones erróneas/ruido: 0

Promedio cuantas están bien: 67.857%

```

[(130, 127, 24, 20), 3, 'NegraPuntillo', 'E']
[(274, 107, 26, 21), 6, 'Negra', 'G']
[(354, 107, 26, 23), 9, 'Blanca', 'G']
[(570, 127, 24, 20), 2, 'NegraPuntillo', 'E']
[(715, 135, 25, 21), 5, 'Negra', 'D']
[(795, 147, 26, 21), 9, 'Blanca', 'C']
[(1010, 135, 24, 21), 1, 'NegraPuntillo', 'D']
[(1154, 127, 25, 20), 8, 'Negra', 'E']
[(1233, 105, 25, 23), 4, 'NegraPuntillo', 'G']
[(1377, 127, 25, 20), 7, 'Negra', 'E']
[(1487, 136, 27, 22), 9, 'Redonda', 'D']

```

#### Primer sistema

```

[(83, 97, 24, 21), 21, 'NegraPuntillo', 'A']
[(231, 78, 24, 21), 22, 'Corchea', 'C']
[(312, 79, 26, 22), 25, 'Blanca', 'B']
[(531, 88, 26, 23), 18, 'Negra', 'B']
[(646, 105, 25, 23), 24, 'Negra', 'G']
[(761, 98, 24, 22), 25, 'Blanca', 'A']
[(980, 97, 24, 21), 20, 'Negra', 'A']
[(1092, 78, 25, 21), 19, 'Negra', 'C']
[(1206, 88, 24, 22), 17, 'Negra', 'B']
[(1319, 108, 24, 20), 23, 'Negra', 'G']
[(1461, 103, 29, 17), 25, 'Redonda', 'A']

```

#### Tercer sistema

```

[(84, 127, 22, 19), 38, 'NegraPuntillo', 'F']
[(224, 107, 24, 20), 41, 'Negra', 'G']
[(303, 106, 25, 23), 42, 'Blanca', 'G']
[(512, 78, 25, 20), 34, 'Negra', 'C']
[(620, 68, 24, 21), 37, 'Negra', 'D']
[(729, 60, 25, 22), 42, 'Blanca', 'E']
[(939, 68, 25, 21), 36, 'NegraPuntillo', 'D']
[(1081, 78, 25, 20), 40, 'Corchea', 'C']
[(1157, 68, 25, 21), 35, 'Negra', 'D']
[(1266, 97, 25, 20), 39, 'Negra', 'A']
[(1401, 79, 26, 21), 42, 'BlancaPuntillo', 'B']
[(1732, 58, 12, 80), 33, 'Negra', 'B']

```

#### Quinto sistema

```

[(83, 127, 24, 20), 12, 'NegraPuntillo', 'E']
[(232, 107, 25, 21), 15, 'Negra', 'G']
[(314, 106, 26, 24), 17, 'Blanca', 'G']
[(535, 127, 25, 20), 11, 'NegraPuntillo', 'E']
[(684, 135, 25, 22), 13, 'Negra', 'D']
[(767, 147, 26, 21), 17, 'Blanca', 'C']
[(988, 135, 24, 21), 10, 'NegraPuntillo', 'D']
[(1136, 127, 25, 20), 14, 'Negra', 'E']
[(1218, 135, 25, 22), 9, 'NegraPuntillo', 'D']
[(1366, 145, 27, 21), 16, 'Negra', 'C']
[(1477, 147, 30, 20), 17, 'Redonda', 'C']

```

#### Segundo sistema

```

[(83, 128, 23, 19), 26, 'NegraPuntillo', 'F']
[(232, 108, 24, 20), 32, 'Negra', 'G']
[(314, 107, 26, 23), 33, 'Blanca', 'G']
[(535, 128, 24, 19), 25, 'NegraPuntillo', 'F']
[(685, 136, 24, 21), 29, 'Negra', 'D']
[(767, 148, 26, 20), 33, 'Blanca', 'C']
[(988, 136, 24, 20), 27, 'NegraPuntillo', 'D']
[(1137, 128, 24, 19), 31, 'Negra', 'F']
[(1218, 108, 24, 20), 28, 'NegraPuntillo', 'G']
[(1367, 128, 24, 19), 30, 'Negra', 'F']
[(1479, 137, 27, 21), 33, 'Redonda', 'D']

```

#### Cuarto sistema

### Prueba 9:

Nombre del archivo: swallowTailJigViolin.jpg



### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 87

Cantidad de alteraciones: 7

### Procesamiento

Notas correctamente detectadas: 67

Notas incorrectamente detectadas: 20

Notas semi-correctamente detectadas: 19

Cantidad de alteraciones mal detectadas: 3

Detecciones erróneas/ruido: 4

Promedio cuantas están bien: 77.011%



```

[(6, 145, 6, 11), 1, 'Corchea', 'A']
[(11, 175, 12, 13), 1, 'Corchea', 'D']
[(39, 151, 5, 11), 1, 'Corchea', 'G']
[(78, 124, 22, 48), 9, 'Blanca', 'A']
[(123, 163, 20, 16), 2, 'Corchea', 'E']
[(178, 155, 20, 16), 2, 'Corchea', 'F']
[(253, 148, 19, 16), 7, 'Corchea', 'G']
[(345, 163, 20, 16), 7, 'Corchea', 'E']
[(438, 163, 19, 16), 7, 'Corchea', 'E']
[(531, 133, 20, 17), 8, 'Corchea', 'B']
[(624, 163, 19, 16), 8, 'Corchea', 'E']
[(716, 162, 19, 17), 8, 'Corchea', 'E']
[(829, 148, 20, 16), 6, 'Corchea', 'G']
[(906, 162, 21, 17), 6, 'Corchea', 'E']
[(982, 162, 20, 17), 6, 'Corchea', 'E']
[(1059, 133, 20, 17), 5, 'Corchea', 'B']
[(1137, 140, 19, 16), 5, 'Corchea', 'A']
[(1213, 148, 20, 16), 5, 'Corchea', 'G']
[(1309, 155, 21, 16), 3, 'Corchea', 'F']
[(1364, 169, 19, 17), 3, 'Corchea', 'D']
[(1417, 169, 19, 17), 3, 'Corchea', 'D']
[(1469, 141, 20, 15), 4, 'Corchea', 'A']
[(1524, 169, 19, 17), 4, 'Corchea', 'D']
[(1576, 169, 20, 17), 4, 'Corchea', 'D']

```

### Primer sistema

```

[(95, 147, 21, 17), 27, 'Corchea', 'G#']
[(133, 162, 19, 17), 27, 'Corchea', 'E']
[(172, 162, 19, 17), 27, 'Corchea', 'E']
[(210, 161, 20, 18), 24, 'Negra', 'E']
[(272, 133, 19, 16), 23, 'Corchea', 'B']
[(329, 133, 21, 18), 28, 'Corchea', 'B']
[(382, 125, 20, 17), 28, 'Corchea', 'B#']
[(433, 118, 20, 17), 28, 'Corchea', 'D']
[(485, 110, 20, 17), 22, 'Negra', 'E']
[(568, 103, 19, 17), 26, 'Negra', 'F']
[(638, 110, 21, 18), 21, 'Negra', 'E']
[(723, 103, 20, 18), 20, 'Corchea', 'F']
[(777, 110, 20, 18), 30, 'Corchea', 'E']
[(830, 118, 20, 17), 30, 'Corchea', 'D']
[(883, 133, 19, 17), 30, 'Corchea', 'B']
[(955, 133, 21, 18), 29, 'Corchea', 'B']
[(1014, 125, 20, 17), 29, 'Corchea', 'B#']
[(1070, 117, 19, 18), 29, 'Corchea', 'D']
[(1126, 110, 20, 19), 19, 'Negra', 'E']
[(1219, 103, 18, 17), 25, 'Negra', 'F']
[(1294, 110, 21, 18), 31, 'Corchea', 'E']
[(1363, 118, 20, 17), 31, 'Corchea', 'D']
[(1431, 133, 19, 17), 31, 'Corchea', 'B']
[(1497, 117, 20, 19), 18, 'NegraPuntillo', 'D']

```

### Tercer sistema

```

[(93, 117, 21, 19), 15, 'Corchea', 'D#']
[(166, 125, 20, 16), 15, 'Corchea', 'B#']
[(238, 117, 19, 18), 15, 'Corchea', 'D']
[(310, 140, 19, 15), 17, 'Corchea', 'A']
[(381, 147, 20, 17), 17, 'Corchea', 'G']
[(452, 154, 20, 16), 17, 'Corchea', 'F']
[(543, 147, 21, 18), 13, 'Corchea', 'G']
[(603, 161, 19, 17), 13, 'Corchea', 'E']
[(662, 160, 20, 18), 13, 'Corchea', 'E']
[(721, 132, 19, 17), 16, 'Corchea', 'B']
[(780, 161, 20, 17), 16, 'Corchea', 'E']
[(839, 160, 19, 18), 16, 'Corchea', 'E']
[(918, 147, 21, 18), 12, 'Corchea', 'G']
[(977, 161, 20, 17), 12, 'Corchea', 'E']
[(1036, 159, 19, 19), 12, 'Corchea', 'F']
[(1092, 132, 21, 18), 9, 'Negra', 'B']
[(1188, 124, 18, 17), 10, 'Corchea', 'C#']
[(1265, 117, 21, 19), 11, 'Corchea', 'D']
[(1327, 125, 20, 16), 11, 'Corchea', 'B#']
[(1388, 117, 19, 18), 11, 'Corchea', 'D']
[(1449, 140, 19, 15), 14, 'Corchea', 'A']
[(1509, 147, 20, 18), 14, 'Corchea', 'G']
[(1570, 153, 19, 17), 14, 'Corchea', 'F']

```

### Segundo sistema

```

[(93, 133, 21, 17), 38, 'Corchea', 'B#']
[(160, 125, 20, 17), 38, 'Corchea', 'C#']
[(225, 119, 19, 17), 38, 'Corchea', 'D']
[(289, 110, 20, 18), 32, 'Negra', 'E']
[(395, 103, 19, 17), 36, 'Negra', 'G']
[(479, 110, 20, 18), 33, 'Negra', 'E']
[(579, 103, 21, 18), 34, 'Corchea', 'F']
[(645, 110, 20, 18), 41, 'Corchea', 'E']
[(708, 119, 18, 17), 41, 'Corchea', 'D']
[(771, 133, 18, 17), 41, 'Corchea', 'B']
[(854, 119, 19, 17), 37, 'Corchea', 'D']
[(920, 125, 20, 17), 37, 'Corchea', 'C#']
[(987, 119, 19, 17), 37, 'Corchea', 'D']
[(1054, 140, 20, 17), 40, 'Corchea', 'A']
[(1121, 147, 20, 18), 40, 'Corchea', 'G']
[(1187, 156, 20, 14), 40, 'Corchea', 'F']
[(1274, 148, 20, 17), 39, 'Corchea', 'G']
[(1343, 163, 20, 16), 39, 'Corchea', 'F']
[(1413, 163, 19, 16), 39, 'Corchea', 'F']
[(1481, 163, 20, 16), 35, 'NegraPuntillo', 'F']

```

### Cuarto sistema

### Prueba 10:

Nombre del archivo: campanitas\_del\_lugar.jpg



### Configuración

Iteraciones = 4

### Propiedades de la partitura

Cantidad de notas en la partitura: 55

Cantidad de alteraciones: 0

### Procesamiento

Notas correctamente detectadas: 41

Notas incorrectamente detectadas: 14

Notas semi-correctamente detectadas: 14

Cantidad de alteraciones mal detectadas: 0

Detecciones erróneas/ruido: 3

Promedio cuantas están bien: 74.545%

```

[(133, 162, 26, 19), 17, 'Negra', 'C']
[(199, 162, 25, 19), 15, 'Negra', 'C']
[(264, 126, 25, 19), 9, 'Negra', 'G']
[(329, 127, 25, 18), 14, 'Negra', 'G']
[(420, 117, 26, 19), 12, 'Negra', 'A']
[(485, 117, 27, 19), 11, 'Negra', 'A']
[(553, 126, 26, 21), 19, 'Blanca', 'G']
[(689, 134, 25, 19), 13, 'Negra', 'F']
[(754, 132, 25, 21), 1, 'Negra', 'F']
[(820, 144, 23, 19), 7, 'Negra', 'F']
[(885, 144, 25, 19), 2, 'Negra', 'F']
[(977, 153, 25, 19), 6, 'Negra', 'D']
[(1043, 153, 24, 19), 5, 'Negra', 'D']
[(1110, 164, 27, 19), 19, 'Blanca', 'C']
[(1244, 162, 27, 19), 18, 'Negra', 'C']
[(1310, 162, 27, 19), 16, 'Negra', 'C']
[(1375, 126, 25, 19), 8, 'Negra', 'G']
[(1441, 125, 25, 20), 3, 'Negra', 'G']
[(1532, 115, 26, 21), 4, 'Negra', 'A']
[(1597, 117, 25, 19), 10, 'Negra', 'A']
[(1665, 126, 27, 21), 19, 'Blanca', 'G']

```

#### Primer sistema

```

[(0, 0, 34, 19), 35, 'Redonda', 'A']
[(102, 135, 24, 18), 28, 'Negra', 'F']
[(181, 135, 26, 18), 27, 'Negra', 'F']
[(262, 144, 26, 19), 24, 'Negra', 'F']
[(343, 144, 25, 19), 23, 'Negra', 'F']
[(451, 152, 25, 19), 22, 'Negra', 'E']
[(532, 152, 25, 19), 32, 'Negra', 'E']
[(615, 164, 26, 18), 35, 'Blanca', 'C']
[(776, 126, 24, 19), 31, 'Negra', 'G']
[(857, 126, 25, 19), 30, 'Negra', 'G']
[(937, 135, 26, 18), 20, 'Negra', 'F']
[(1019, 135, 23, 18), 26, 'Negra', 'F']
[(1125, 144, 25, 19), 34, 'Negra', 'F']
[(1206, 144, 24, 19), 33, 'Negra', 'F']
[(1290, 154, 25, 19), 35, 'Blanca', 'D']
[(1450, 126, 25, 19), 29, 'Negra', 'G']
[(1532, 126, 25, 19), 21, 'Negra', 'G']
[(1612, 135, 25, 18), 25, 'Negra', 'F']
[(1693, 135, 25, 18), 19, 'Negra', 'F']

```

#### Segundo sistema

```

[(30, 0, 18, 21), 48, 'Redonda', 'A']
[(101, 144, 25, 19), 40, 'Negra', 'F']
[(183, 144, 25, 19), 44, 'Negra', 'F']
[(267, 154, 26, 19), 48, 'Blanca', 'D']
[(431, 161, 25, 19), 46, 'Negra', 'D']
[(512, 161, 26, 19), 47, 'Negra', 'D']
[(595, 125, 24, 20), 36, 'Negra', 'G']
[(676, 126, 26, 19), 45, 'Negra', 'G']
[(785, 117, 25, 19), 42, 'Negra', 'A']
[(867, 117, 25, 19), 41, 'Negra', 'A']
[(951, 128, 26, 19), 48, 'Blanca', 'G']
[(1114, 135, 25, 19), 38, 'Negra', 'F']
[(1198, 135, 23, 19), 37, 'Negra', 'F']
[(1278, 144, 26, 19), 39, 'Negra', 'F']
[(1360, 144, 25, 19), 43, 'Negra', 'F']
[(1471, 154, 26, 19), 48, 'Blanca', 'D']
[(1603, 163, 39, 28), 48, 'Blanca', 'C']
[(1764, 81, 10, 73), 35, 'Negra', 'B']

```

#### Tercer sistema