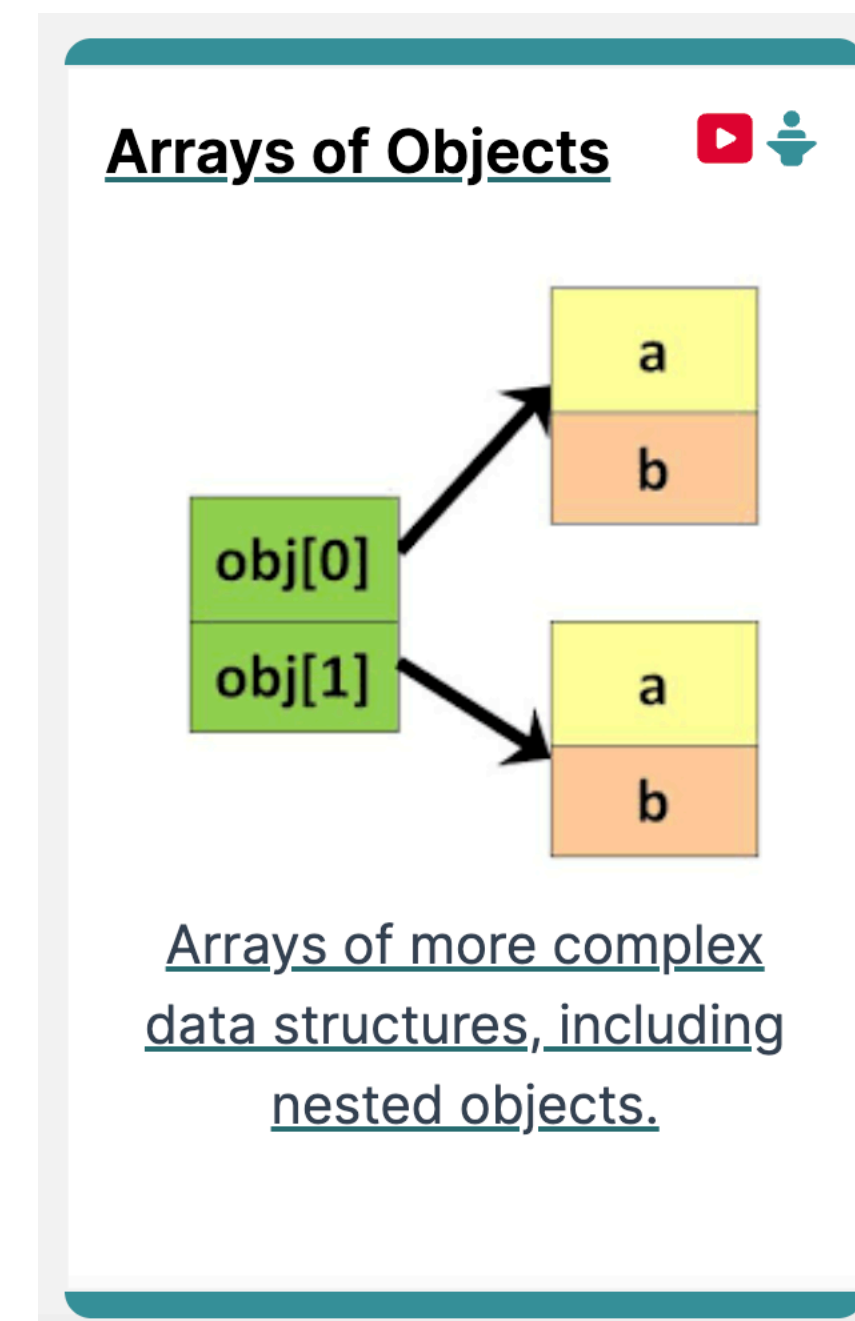# Arrays of Objects
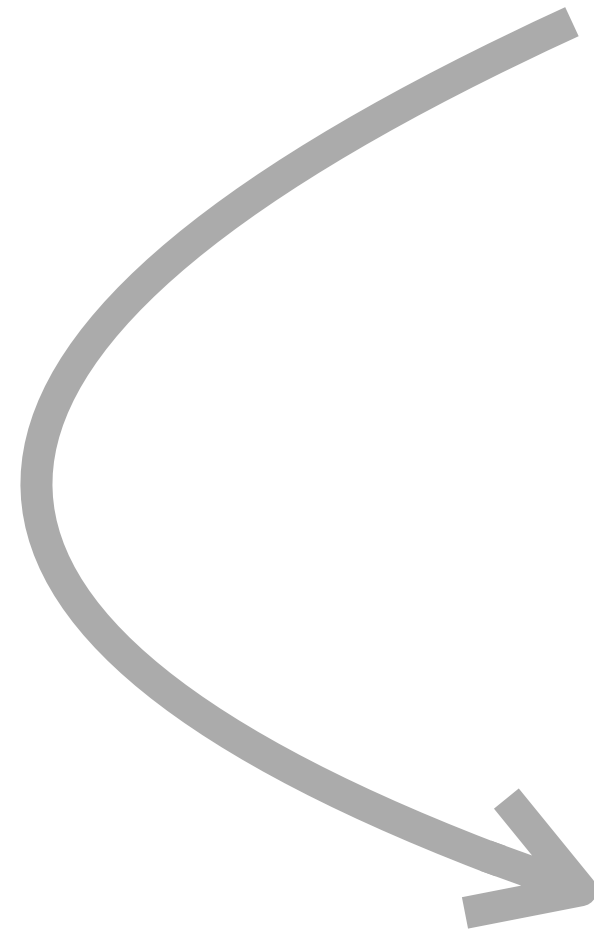
Arrays of Strings

array of strings

```
const songList = [
  'Piano Sonata No. 3',
  'Piano Sonata No. 7',
  'Piano Sonata No. 10',
];

console.log(songList);
```
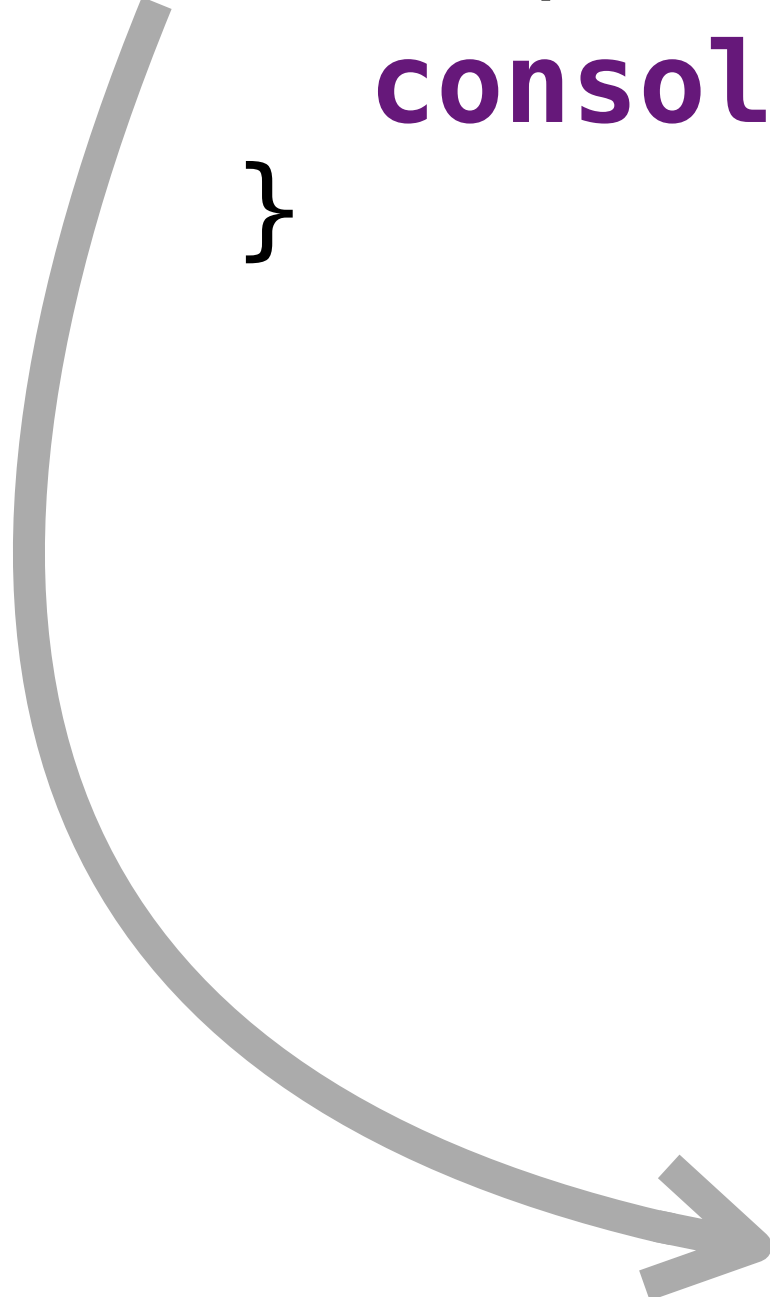
```
[ 'Piano Sonata No. 3',
  'Piano Sonata No. 7',
  'Piano Sonata No. 10' ]
```
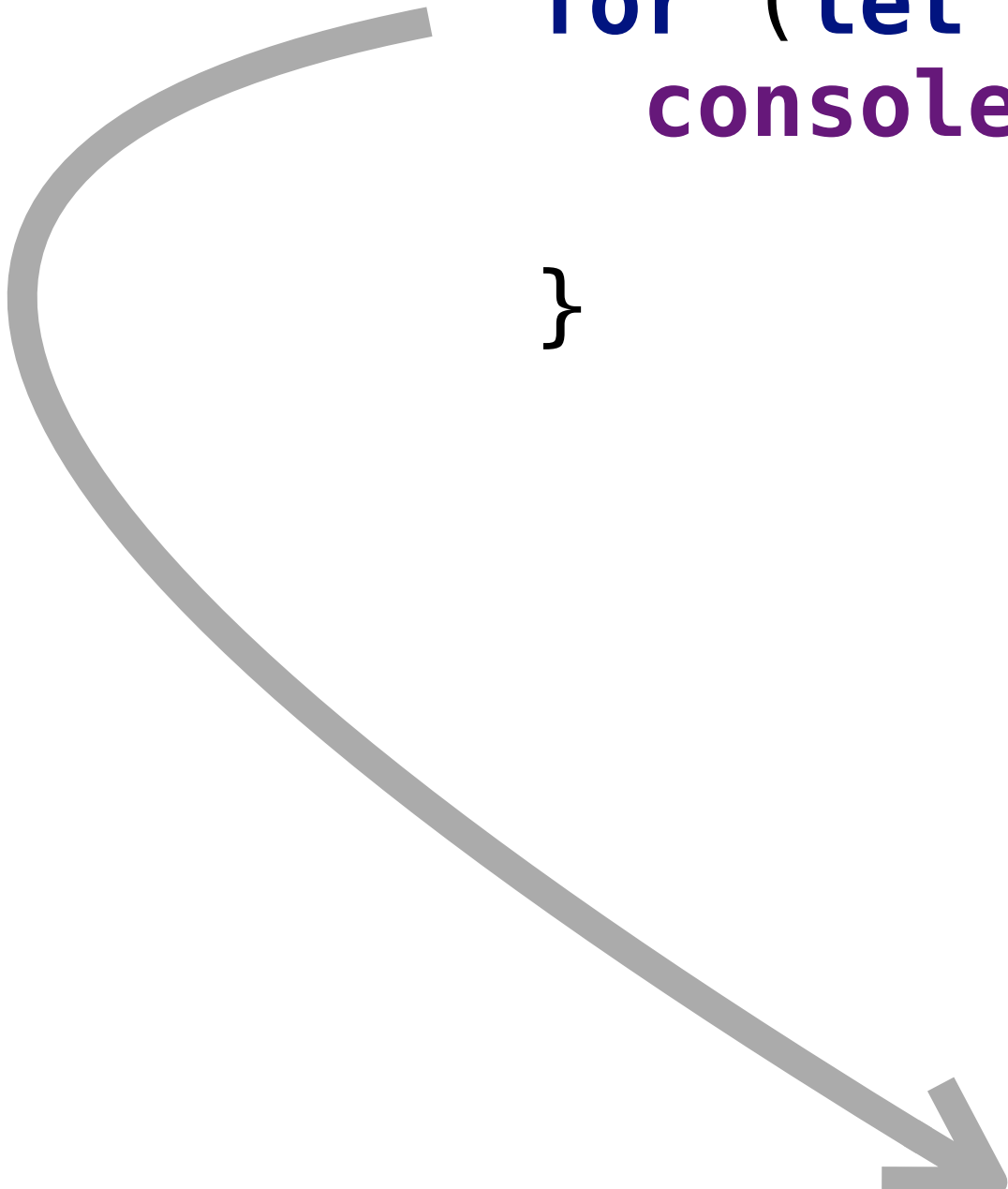
array of strings

```javascript
const songList = [
  'Piano Sonata No. 3',
  'Piano Sonata No. 7',
  'Piano Sonata No. 10',
];

for (let i = 0; i < songList.length; i++) {
  console.log('Song ' + i + ':' + songList[i]);
}
```

Song 0:Piano Sonata No. 3
Song 1:Piano Sonata No. 7
Song 2:Piano Sonata No. 10

```javascript
const songList2 = [
  'Piano Sonata No. 3',
  'Beethoven',
  'Piano Sonata No. 7',
  'Beethoven',
  'Piano Sonata No. 10',
  'Beethoven',
];

for (let k = 0; k < songList2.length; k=k+2) {
  console.log('Song ' + k + ': Title: '  + songList2[k] +
                          ': Artist: ' + songList2[k + 1]);
}
```

Song 0: Title: Piano Sonata No. 3: Artist: Beethoven
Song 2: Title: Piano Sonata No. 7: Artist: Beethoven
Song 4: Title: Piano Sonata No. 10: Artist: Beethoven

Arrays of Objects

```
const songList3 = [
  {
    title: 'Piano Sonata No. 3',
    artist: 'Beethoven',
  },
  {
    title: 'Piano Sonata No. 7',
    artist: 'Beethoven',
  },
  {
    title: 'Piano Sonata No. 10',
    artist: 'Beethoven',
  },
];
```

Array of 3 objects

```
const songList3 = [
  {
    title: 'Piano Sonata No. 3',
    artist: 'Beethoven',
  },
  {
    title: 'Piano Sonata No. 7',
    artist: 'Beethoven',
  },
  {
    title: 'Piano Sonata No. 10',
    artist: 'Beethoven',
  },
];
```

single object

```
{
  title: 'Piano Sonata No. 3',
  artist: 'Beethoven',
},
```

Song object:
- title
- artist

```javascript
const songList3 = [
  {
    title: 'Piano Sonata No. 3',
    artist: 'Beethoven',
  },
  {
    title: 'Piano Sonata No. 7',
    artist: 'Beethoven',
  },
  {
    title: 'Piano Sonata No. 10',
    artist: 'Beethoven',
  },
];

for (let j = 0; j < songList3.length; j++) {
  console.log('Song ' + j + ': Title: ' + songList3[j].title +
                          ': Artist: ' + songList3[j].artist);
}
```

```
Song 0: Title: Piano Sonata No. 3: Artist: Beethoven
Song 1: Title: Piano Sonata No. 7: Artist: Beethoven
Song 2: Title: Piano Sonata No. 10: Artist: Beethoven
```

```javascript
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "02",
    title: "Beethoven Concertos",
    songs: [
      {
        id: "07",
        title: "Piano Concerto No. 0",
        artist: "Beethoven",
      },
      {
        id: "08",
        title: "Piano Concerto No. 4",
        artist: "Beethoven",
      },
      {
        id: "09",
        title: "Piano Concerto No. 6",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "03",
    title: "Beethoven Variations",
    songs: [
      {
        id: "10",
        title: "Opus 34: Six variations on a theme in F major",
        artist: "Beethoven",
      },
      {
        id: "11",
        title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
        artist: "Beethoven",
      }
    ]
  }
];
```

array of objects

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```javascript
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "02",
    title: "Beethoven Concertos",
    songs: [
      {
        id: "07",
        title: "Piano Concerto No. 0",
        artist: "Beethoven",
      },
      {
        id: "08",
        title: "Piano Concerto No. 4",
        artist: "Beethoven",
      },
      {
        id: "09",
        title: "Piano Concerto No. 6",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "03",
    title: "Beethoven Variations",
    songs: [
      {
        id: "10",
        title: "Opus 34: Six variations on a theme in F major",
        artist: "Beethoven",
      },
      {
        id: "11",
        title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
        artist: "Beethoven",
      }
    ]
  }
];
```

array of objects

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```
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "02",
    title: "Beethoven Concertos",
    songs: [
      {
        id: "07",
        title: "Piano Concerto No. 0",
        artist: "Beethoven",
      },
      {
        id: "08",
        title: "Piano Concerto No. 4",
        artist: "Beethoven",
      },
      {
        id: "09",
        title: "Piano Concerto No. 6",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "03",
    title: "Beethoven Variations",
    songs: [
      {
        id: "10",
        title: "Opus 34: Six variations on a theme in F major",
        artist: "Beethoven",
      },
      {
        id: "11",
        title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
        artist: "Beethoven",
      }
    ]
  }
];
```

array of objects

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```
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "02",
    title: "Beethoven Concertos",
    songs: [
      {
        id: "07",
        title: "Piano Concerto No. 0",
        artist: "Beethoven",
      },
      {
        id: "08",
        title: "Piano Concerto No. 4",
        artist: "Beethoven",
      },
      {
        id: "09",
        title: "Piano Concerto No. 6",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "03",
    title: "Beethoven Variations",
    songs: [
      {
        id: "10",
        title: "Opus 34: Six variations on a theme in F major",
        artist: "Beethoven",
      },
      {
        id: "11",
        title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
        artist: "Beethoven",
      }
    ]
  }
];
```

array of objects

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```
{
  id: "01",
  title: "Beethoven Sonatas",
  songs: [
    {
      id: "04",
      title: "Piano Sonata No. 3",
      artist: "Beethoven",
    },
    {
      id: "05",
      title: "Piano Sonata No. 7",
      artist: "Beethoven",
    },
    {
      id: "06",
      title: "Piano Sonata No. 10",
      artist: "Beethoven",
    }
  ]
}
```

Each object consists of
- id
- title
- songs

```
{
  id: "01",
  title: "Beethoven Sonatas",
  songs: [
    {
      id: "04",
      title: "Piano Sonata No. 3",
      artist: "Beethoven",
    },
    {
      id: "05",
      title: "Piano Sonata No. 7",
      artist: "Beethoven",
    },
    {
      id: "06",
      title: "Piano Sonata No. 10",
      artist: "Beethoven",
    }
  ]
}
```

Each object consists of
- id
- title
- songs - array of objects

```
{
    id: "04",
    title: "Piano Sonata No. 3",
    artist: "Beethoven",
},
```

Song
- id
- title
- artist

```javascript
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "02",
    title: "Beethoven Concertos",
    songs: [
      {
        id: "07",
        title: "Piano Concerto No. 0",
        artist: "Beethoven",
      },
      {
        id: "08",
        title: "Piano Concerto No. 4",
        artist: "Beethoven",
      },
      {
        id: "09",
        title: "Piano Concerto No. 6",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "03",
    title: "Beethoven Variations",
    songs: [
      {
        id: "10",
        title: "Opus 34: Six variations on a theme in F major",
        artist: "Beethoven",
      },
      {
        id: "11",
        title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
        artist: "Beethoven",
      }
    ]
  }
];
```

```javascript
const playlistCollection = [
...
];

console.log (playlistCollection);
```

▶ [Object, Object, Object]

chrome console

```js
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
```

```js
const playlistCollection = [

...
];


for (let i = 0; i < playlistCollection.length; i++) {
  console.log(playlistCollection[i]);
}
```

```
                                    s",

                                    No. 0",

                                    No. 4",

                                    No. 6",
      ]
    },
    {
      id: "03",
      title: "Beethoven Variations",
      songs: [
        {
          id: "10",
          title: "Opus 34: Six variations on a theme in F major",
          artist: "Beethoven",
        },
        {
          id: "11",
          title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
          artist: "Beethoven",
        }
      ]
    }
];
```
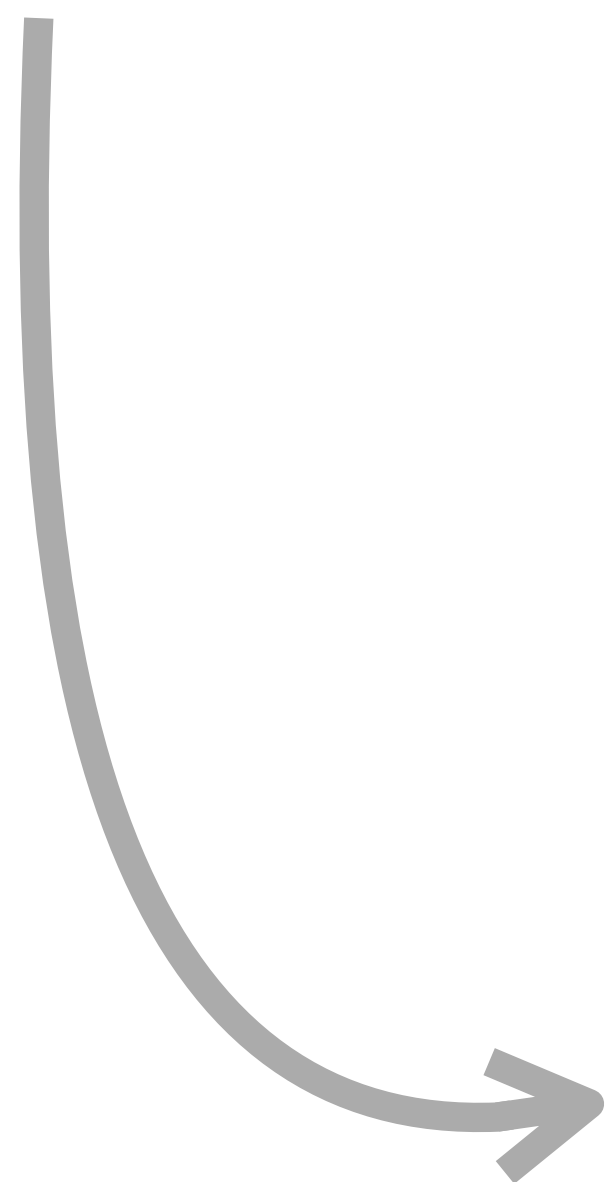
```
▶ Object {id: "01", title: "Beethoven Sonatas", songs: Array[3]}
▶ Object {id: "02", title: "Beethoven Concertos", songs: Array[3]}
▶ Object {id: "03", title: "Beethoven Variations", songs: Array[2]}
```

chrome console

```
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
        artist: "Beethoven",
```

```
        s",

        No. 0",

        No. 4",

        No. 6",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "03",
    title: "Beethoven Variations",
    songs: [
      {
        id: "10",
        title: "Opus 34: Six variations on a theme in F major",
        artist: "Beethoven",
      },
      {
        id: "11",
        title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
        artist: "Beethoven",
      }
    ]
  }
];
```

```
const playlistCollection = [
...
];

for (let i = 0; i < playlistCollection.length; i++) {
  console.log(playlistCollection[i].title)
}
```

```
Beethoven Sonatas

Beethoven Concertos

Beethoven Variations
```

chrome console

```javascript
const playlistCollection = [
    {
        id: "01",
        title: "Beethoven Sonatas",
        songs: [
            {
                id: "04",
                title: "Piano Sonata No. 3",
                artist: "Beethoven",
            },
            {
                id: "05",
                title: "Piano Sonata No. 7",
                artist: "Beethoven",
            },
```

```javascript
const playlistCollection = [
...
];

for (let i = 0; i < playlistCollection.length; i++) {
  console.log(playlistCollection[i].title)
  for (let j=0; j < playlistCollection[i].songs.length; j++) {
    console.log(playlistCollection[i].songs[j]);
  }
}
```

```javascript
            id: "03",
            title: "Beethoven Variations",
            songs: [
                {
                    id: "10",
                    title: "Opus 34: Six variations on a theme in F major",
```

```
Beethoven Sonatas
▶ Object {id: "04", title: "Piano Sonata No. 3", artist: "Beethoven"}
▶ Object {id: "05", title: "Piano Sonata No. 7", artist: "Beethoven"}
▶ Object {id: "06", title: "Piano Sonata No. 10", artist: "Beethoven"}
Beethoven Concertos
▶ Object {id: "07", title: "Piano Concerto No. 0", artist: "Beethoven"}
▶ Object {id: "08", title: "Piano Concerto No. 4", artist: "Beethoven"}
▶ Object {id: "09", title: "Piano Concerto No. 6", artist: "Beethoven"}
Beethoven Variations
▶ Object {id: "10", title: "Opus 34: Six variations on a theme in F major", artist: "Beethoven"}
▶ Object {id: "11", title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo", artist: "Beethoven"}
```

chrome console

```javascript
const playlistCollection = [
    {
        id: "01",
        title: "Beethoven Sonatas",
        songs: [
            {
                id: "04",
                title: "Piano Sonata No. 3",
                artist: "Beethoven",
            },
            {
                id: "05",
                title: "Piano Sonata No. 7",
                artist: "Beethoven",
```

```javascript
const playlistCollection = [
...
];

for (let i = 0; i < playlistCollection.length; i++) {
  console.log(playlistCollection[i].title)
  for (let j=0; j < playlistCollection[i].songs.length; j++) {
    console.log(playlistCollection[i].songs[j].title);
    console.log(playlistCollection[i].songs[j].artist);
  }
}
```

```
Beethoven Sonatas
Piano Sonata No. 3
Beethoven
Piano Sonata No. 7
Beethoven
Piano Sonata No. 10
Beethoven
Beethoven Concertos
Piano Concerto No. 0
Beethoven
Piano Concerto No. 4
Beethoven
Piano Concerto No. 6
Beethoven
Beethoven Variations
Opus 34: Six variations on a theme in F major
Beethoven
Opus 120: Thirty-three variations on a waltz by Diabelli in C majo
Beethoven
```

```
:ions",

 variations on a theme in F major",

irty-three variations on a waltz by Diabelli in C majo",
```

```javascript
const playlistCollection = [
  {
    id: "01",
    title: "Beethoven Sonatas",
    songs: [
      {
        id: "04",
        title: "Piano Sonata No. 3",
        artist: "Beethoven",
      },
      {
        id: "05",
        title: "Piano Sonata No. 7",
        artist: "Beethoven",
      },
      {
        id: "06",
        title: "Piano Sonata No. 10",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "02",
    title: "Beethoven Concertos",
    songs: [
      {
        id: "07",
        title: "Piano Concerto No. 0",
        artist: "Beethoven",
      },
      {
        id: "08",
        title: "Piano Concerto No. 4",
        artist: "Beethoven",
      },
      {
        id: "09",
        title: "Piano Concerto No. 6",
        artist: "Beethoven",
      }
    ]
  },
  {
    id: "03",
    title: "Beethoven Variations",
    songs: [
      {
        id: "10",
        title: "Opus 34: Six variations on a theme in F major",
        artist: "Beethoven",
      },
      {
        id: "11",
        title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo",
        artist: "Beethoven",
      }
    ]
  }
];
```

```
▼Array[3] 🛈
  ▼0: Object
      id: "01"
    ▼songs: Array[3]
      ▼0: Object
          artist: "Beethoven"
          id: "04"
          title: "Piano Sonata No. 3"
        ▶__proto__: Object
      ▼1: Object
          artist: "Beethoven"
          id: "05"
          title: "Piano Sonata No. 7"
        ▶__proto__: Object
      ▼2: Object
          artist: "Beethoven"
          id: "06"
          title: "Piano Sonata No. 10"
        ▶__proto__: Object
        length: 3
      ▶__proto__: Array[0]
      title: "Beethoven Sonatas"
    ▶__proto__: Object
  ▼1: Object
      id: "02"
    ▼songs: Array[3]
      ▼0: Object
          artist: "Beethoven"
          id: "07"
          title: "Piano Concerto No. 0"
        ▶__proto__: Object
      ▼1: Object
          artist: "Beethoven"
          id: "08"
          title: "Piano Concerto No. 4"
        ▶__proto__: Object
      ▼2: Object
          artist: "Beethoven"
          id: "09"
          title: "Piano Concerto No. 6"
        ▶__proto__: Object
        length: 3
      ▶__proto__: Array[0]
      title: "Beethoven Concertos"
    ▶__proto__: Object
  ▼2: Object
      id: "03"
    ▼songs: Array[2]
      ▼0: Object
          artist: "Beethoven"
          id: "10"
          title: "Opus 34: Six variations on a theme in F major"
        ▶__proto__: Object
      ▼1: Object
          artist: "Beethoven"
          id: "11"
          title: "Opus 120: Thirty-three variations on a waltz by Diabelli in C majo"
        ▶__proto__: Object
        length: 2
      ▶__proto__: Array[0]
      title: "Beethoven Variations"
    ▶__proto__: Object
    length: 3
  ▶__proto__: Array[0]
```

Arrays of Objects

Arrays of Objects

obj[0] → a / b

obj[1] → a / b

Arrays of more complex data structures, including nested objects.