

JSON

JSON Playlist Collection

- **JavaScript Object Notation (JSON).**
- This is a data file in JSON format.
- It is a subset of JavaScript notation describing a data structure.

```
{
  "playlistCollection": [
    {
      "title": "Beethoven Sonatas",
      "songs": [
        {
          "title": "Piano Sonata No. 3",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Sonata No. 7",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Sonata No. 10",
          "artist": "Beethoven"
        }
      ]
    },
    {
      "title": "Beethoven Concertos",
      "songs": [
        {
          "title": "Piano Concerto No. 0",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Concerto No. 4",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Concerto No. 6",
          "artist": "Beethoven"
        }
      ]
    }
  ]
}
```

playlist-store.json

- A song object, containing:
 - **title** - a string
 - **artist** - a string

```
{  
  "title": "Piano Concerto No. 6",  
  "artist": "Beethoven"  
}
```

playlist-store.json

- Three song objects, each containing:
 - **title** - a string
 - **artist** - a string

```
{  
  "title": "Piano Concerto No. 0",  
  "artist": "Beethoven"  
},  
{  
  "title": "Piano Concerto No. 4",  
  "artist": "Beethoven"  
},  
{  
  "title": "Piano Concerto No. 6",  
  "artist": "Beethoven"  
}
```

playlist-store.json

- **songs** - an array of three song objects, each containing:
 - **title** - a string
 - **artist** - a string

```
"songs": [  
  {  
    "title": "Piano Concerto No. 0",  
    "artist": "Beethoven"  
  },  
  {  
    "title": "Piano Concerto No. 4",  
    "artist": "Beethoven"  
  },  
  {  
    "title": "Piano Concerto No. 6",  
    "artist": "Beethoven"  
  }  
]
```

playlist-store.json

- A **playlist** object, containing:
 - **title** - a string
 - **songs** - an array of objects, each containing:
 - **title** - a string
 - **artist** - a string

```
{  
  "title": "Beethoven Concertos",  
  "songs": [  
    {  
      "title": "Piano Concerto No. 0",  
      "artist": "Beethoven"  
    },  
    {  
      "title": "Piano Concerto No. 4",  
      "artist": "Beethoven"  
    },  
    {  
      "title": "Piano Concerto No. 6",  
      "artist": "Beethoven"  
    }  
  ]  
}
```

playlist-store.json

- 2 **playlist** objects, each containing:
 - **title** - a string
 - **songs** - an array of objects, each containing:
 - **title** - a string
 - **artist** - a string

```
{
  "title": "Beethoven Sonatas",
  "songs": [
    {
      "title": "Piano Sonata No. 3",
      "artist": "Beethoven"
    },
    {
      "title": "Piano Sonata No. 7",
      "artist": "Beethoven"
    },
    {
      "title": "Piano Sonata No. 10",
      "artist": "Beethoven"
    }
  ]
},
{
  "title": "Beethoven Concertos",
  "songs": [
    {
      "title": "Piano Concerto No. 0",
      "artist": "Beethoven"
    },
    {
      "title": "Piano Concerto No. 4",
      "artist": "Beethoven"
    },
    {
      "title": "Piano Concerto No. 6",
      "artist": "Beethoven"
    }
  ]
}
```

playlist-store.json

- A **playlistCollection** object, containing:
 - an array of 2 **playlist** objects, each containing:
 - **title** - a string
 - **songs** - an array of objects, each containing:
 - **title** - a string
 - **artist** - a string

```
{
  "playlistCollection": [
    {
      "title": "Beethoven Sonatas",
      "songs": [
        {
          "title": "Piano Sonata No. 3",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Sonata No. 7",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Sonata No. 10",
          "artist": "Beethoven"
        }
      ]
    },
    {
      "title": "Beethoven Concertos",
      "songs": [
        {
          "title": "Piano Concerto No. 0",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Concerto No. 4",
          "artist": "Beethoven"
        },
        {
          "title": "Piano Concerto No. 6",
          "artist": "Beethoven"
        }
      ]
    }
  ]
}
```


Beethoven Sonatas

Song	Artist
Piano Sonata No. 3	Beethoven
Piano Sonata No. 7	Beethoven
Piano Sonata No. 10	Beethoven

Beethoven Concertos

Song	Artist
Piano Concerto No. 0	Beethoven
Piano Concerto No. 4	Beethoven
Piano Concerto No. 6	Beethoven

playlist-1

- Model-View-Controller Pattern:
- Controllers
- Model Playlists stored in JSON
- Views

back-end +

`.env`

`.gitignore`

`.jscsrc`

`controllers/about.js`

`controllers/dashboard.js`

`controllers/start.js`

`models/playlist-store.js`

`models/playlist-store.json`

`package.json`

`README.md`

`routes.js`

`server.js`

`utils/logger.js`

front-end +

`assets`

`views/about.hbs`

`views/dashboard.hbs`

`views/layouts/main.hbs`

`views/partials/listsongs.hbs`

`views/partials/menu.hbs`

`views/start.hbs`

Controller / Model

Dashboard Controller

Load the model
(the playlists) ➡

Place model in
viewData object ➡

Send viewData to view ➡

```
'use strict';

const logger = require('../utils/logger');
const playlistCollection = require('../models/playlist-store.js');

const dashboard = {
  index(request, response) {
    logger.info('dashboard rendering');
    const viewData = {
      title: 'Playlist Dashboard',
      playlists: playlistCollection,
    };
    logger.info('about to render', playlistCollection);
    response.render('dashboard', viewData);
  },
};

module.exports = dashboard;
```

Controller/View

dashboard.js

```
index(request, response) {  
  logger.info('dashboard rendering');  
  const viewData = {  
    title: 'Playlist Dashboard',  
    playlists: playlistCollection,  
  };  
  logger.info('about to render', playlistCollection);  
  response.render('dashboard', viewData);  
},
```

- viewData sent to the dashboard view.

dashboard.hbs

```
{{> menu id="dashboard"}}  
  
{{#each playlists}}  
  <section class="ui segment">  
    <h2 class="ui header">  
      {{title}}  
    </h2>  
    <table class="ui table">  
      <thead>  
        <tr>  
          <th>Song</th>  
          <th>Artist</th>  
        </tr>  
      </thead>  
      <tbody>  
        {{#each songs}}  
          <tr>  
            <td>  
              {{title}}  
            </td>  
            <td>  
              {{artist}}  
            </td>  
          </tr>  
        {{/each}}  
      </tbody>  
    </table>  
  </section>  
{{/each}}
```

Model/View

```
[
  {
    "title": "Beethoven Sonatas",
    "songs": [
      {
        "title": "Piano Sonata No. 3",
        "artist": "Beethoven"
      },
      {
        "title": "Piano Sonata No. 7",
        "artist": "Beethoven"
      },
      {
        "title": "Piano Sonata No. 10",
        "artist": "Beethoven"
      }
    ]
  },
  {
    "title": "Beethoven Concertos",
    "songs": [
      {
        "title": "Piano Concerto No. 0",
        "artist": "Beethoven"
      },
      {
        "title": "Piano Concerto No. 4",
        "artist": "Beethoven"
      },
      {
        "title": "Piano Concerto No. 6",
        "artist": "Beethoven"
      }
    ]
  }
]
```



```
index(request, response) {

  const viewData = {
    title: 'Playlist Dashboard',
    playlists: playlistCollection,
  };

  response.render('dashboard', viewData);
}
```

```
{{> menu id='dashboard'}}
{{#each playlists}}
  <section class="ui segment">
    <h2 class="ui header">
      {{title}}
    </h2>
    <table class="ui table">
      <thead>
        <tr>
          <th>Song</th>
          <th>Artist</th>
        </tr>
      </thead>
      <tbody>
        {{#each songs}}
          <tr>
            <td>
              {{title}}
            </td>
            <td>
              {{artist}}
            </td>
          </tr>
        {{/each}}
      </tbody>
    </table>
  </section>
{{/each}}
```

Loop through
each playlist
object

Output the title

Loop through each
song in each
playlist

Output title + artist

Beethoven Sonatas

Song	Artist
Piano Sonata No. 3	Beethoven
Piano Sonata No. 7	Beethoven
Piano Sonata No. 10	Beethoven

Beethoven Concertos

Song	Artist
Piano Concerto No. 0	Beethoven
Piano Concerto No. 4	Beethoven
Piano Concerto No. 6	Beethoven

Class Exercise

- Write the code for a JSON object that contains the following information:
 - Array of tennis matches
 - Each match has a title/name and location
 - Each match has an array containing two players
 - For each player, store their name and current ranking

Match	Location	Player name	Current ranking
Match 1	Wimbledon	Rafael Nadal	2
		Roger Federer	6
Match 2	U.S. Open	Naomi Osaka	1
		Sloane Stephens	4