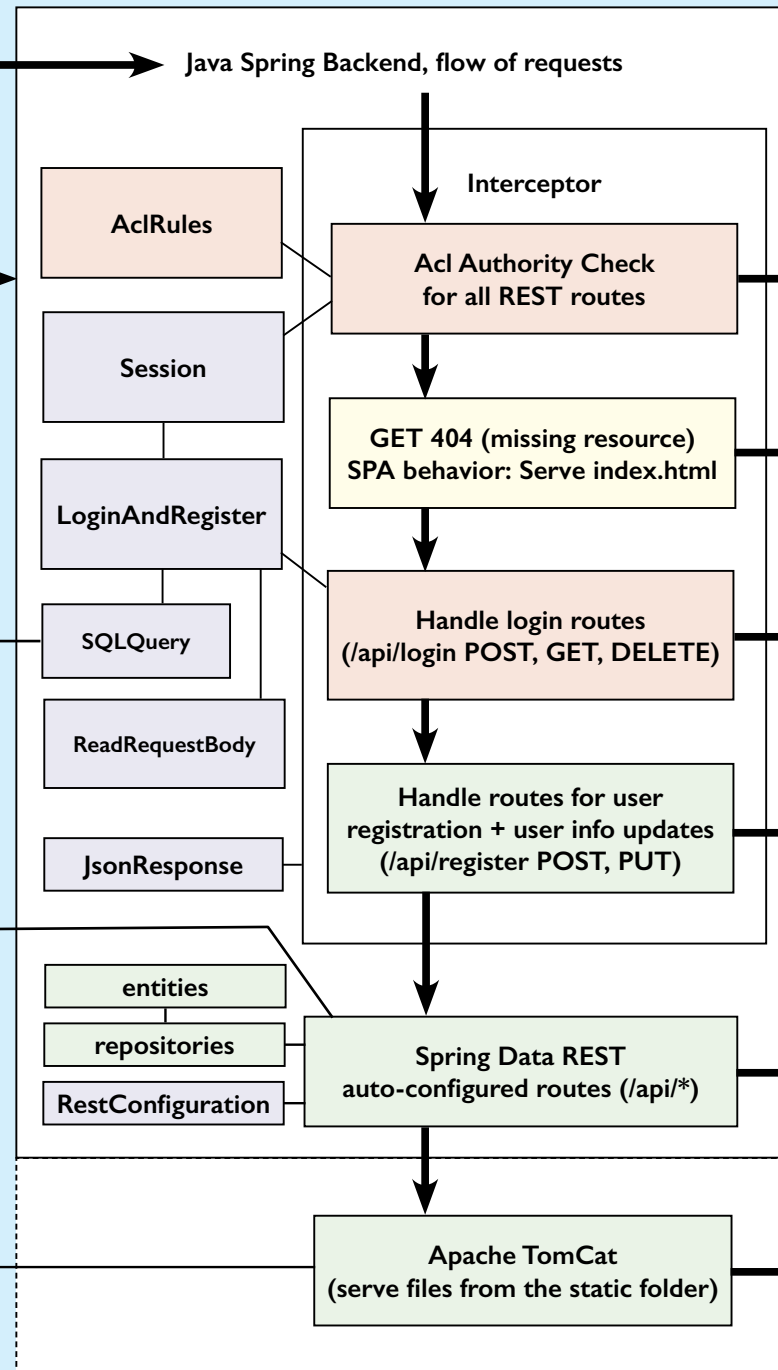
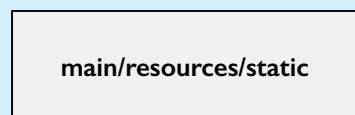
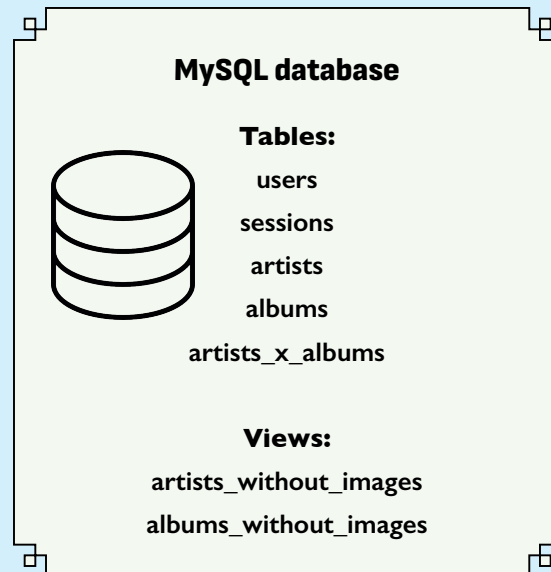
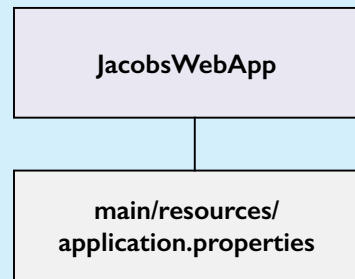


# The Music Vault, Backend: Flow, classes and parts

HTTP request



Possible  
HTTP responses

{error: not allowed}

index.html

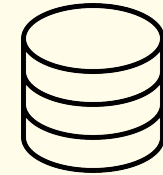
JSON data {user info etc}

JSON data {user info etc}

JSON data {from the DB}  
including images

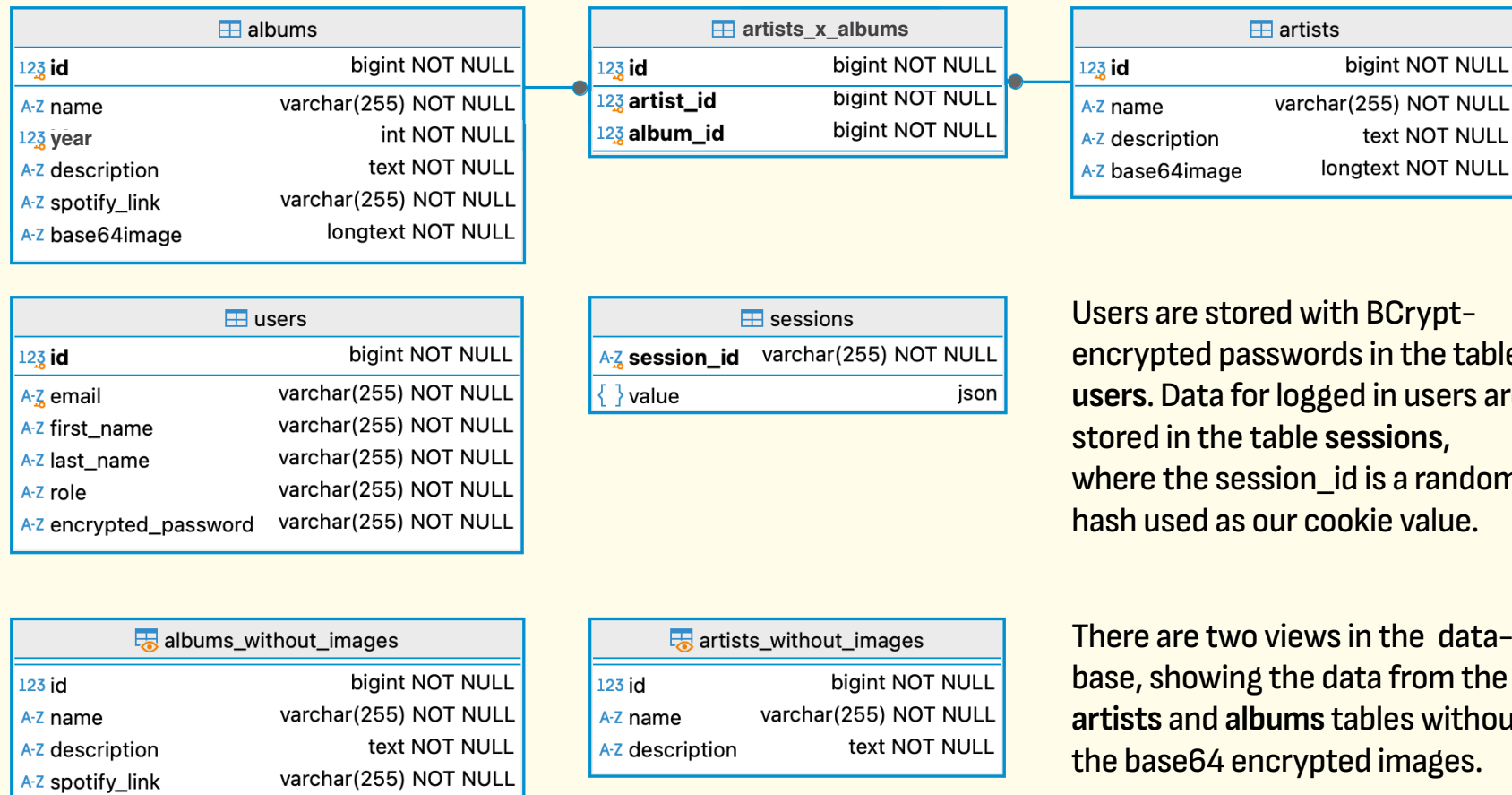
Frontend assets:  
HTML, CSS, JS, icons etc

# The Music Vault, MySQL database: ER Diagram



The only relation we have is a many-to-many relationship between albums and artists:

- An album is made by one or several artists, an artist can make one to many albums
- We solve this many-to-many relation in the classic SQL way, by introducing a join table, `artistsXalbums`.



Users are stored with BCrypt-encrypted passwords in the table **users**. Data for logged in users are stored in the table **sessions**, where the `session_id` is a random hash used as our cookie value.

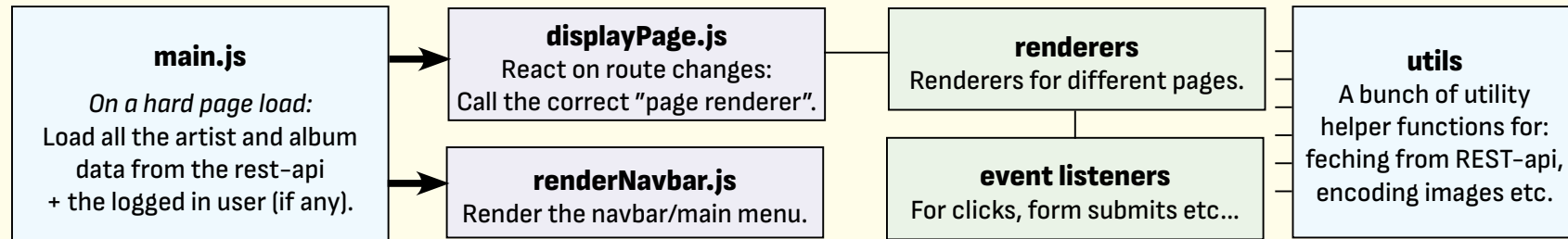
There are two views in the database, showing the data from the **artists** and **albums** tables without the base64 encrypted images.

# The Music Vault: REST API Routes

| Request method | Route                         | Access control <i>(by user roles)</i> |
|----------------|-------------------------------|---------------------------------------|
| POST           | /api/register                 | visitor                               |
| PUT            | /api/register                 | user                                  |
| POST           | /api/login                    | visitor                               |
| GET            | /api/login                    | visitor, user                         |
| DELETE         | /api/login                    | user                                  |
| POST           | /api/artists                  | user                                  |
| GET            | /api/artists                  | visitor, user                         |
| GET            | /api/artists/:id              | visitor, user                         |
| PUT            | /api/artists/:id              | user                                  |
| DELETE         | /api/artists/:id              | user                                  |
| GET            | /api/artistsWithoutImages     | visitor, user                         |
| GET            | /api/artistsWithoutImages/:id | visitor, user                         |
| POST           | /api/albums                   | user                                  |
| GET            | /api/albums                   | visitor, user                         |
| GET            | /api/albums/:id               | visitor, user                         |
| PUT            | /api/albums/:id               | user                                  |
| DELETE         | /api/albums/:id               | user                                  |
| GET            | /api/albumsWithoutImages      | visitor, user                         |
| GET            | /api/albumsWithoutImages/:id  | visitor, user                         |
| GET            | /api/artistXAlbums            | visitor, user                         |
| POST           | /api/artistXAlbums            | user                                  |
| DELETE         | /api/artistXAlbums/:id        | user                                  |

## The Music Vault, Frontend: Quick overview

The frontend is an SPA built with "vanilla JS" (JavaScript without any frontend framework). Two external JS libraries are used: The JS part of the Bootstrap CSS library and Marked.js (*conversion of markdown to html*). The Bootstrap CSS library is used to accomplish a modern responsive layout in conjunction with my own CSS.



## SPA (Single Page Application): Frontend routing

The frontend is an SPA, which takes care of the routing of a number of different GET routes, via JavaScript running in the browser, without doing any hard page reloads between route changes.

| Menu item / Link                | Shown for                | GET route         | Description                  |
|---------------------------------|--------------------------|-------------------|------------------------------|
| Artists                         | everyone                 | /                 | List of artists              |
| Albums                          | everyone                 | /albums           | List of albums               |
| Add an artist                   | logged in users          | /add-artist       | Form for adding an artist    |
| Add an album                    | logged in users          | /add-album        | Form for adding an album     |
| About                           | everyone                 | /about            | Info about the application   |
| Register                        | visitors (not logged in) | /register         | Form for registering a user  |
| [name of logged in user]        | logged in users          | /register         | Form for updating user info  |
| [link from each artist in list] | everyone                 | /artists-info/:id | Details about an artist      |
| [link from each album in list]  | everyone                 | /album-info/:id   | Details about an album       |
| [link from each artist in list] | logged in users          | /edit-artist/:id  | Form for editing artist info |
| [link from each album in list]  | logged in usrs           | /edit-album/:id   | Form for editing album info  |

# The Music Vault: File Statistics, version 0.8.3

## Java




|  | SLOC       | KB          |
|--|------------|-------------|
| AclRules.java                                  | 41         | 1.5         |
| AsciiLogo.java                                 | 16         | 0.8         |
| Interceptor.java                               | 116        | 4.1         |
| JacobsWebApp.java                              | 94         | 3.6         |
| JsonResponse.java                              | 18         | 0.6         |
| LoginAndRegister.java                          | 113        | 4.2         |
| ReadRequestBody.java                           | 49         | 1.6         |
| RestConfiguration.java                         | 37         | 1.4         |
| SQLQuery.java                                  | 50         | 1.6         |
| Session.java                                   | 62         | 2.0         |
| SystemOutOnOff.java                            | 23         | 0.5         |
| entities/Album.java                            | 33         | 0.7         |
| entities/AlbumWithoutImage.java                | 27         | 0.6         |
| entities/Artist.java                           | 28         | 0.6         |
| entities/ArtistWithoutImage.java               | 24         | 0.5         |
| entities/ArtistXAlbum.java                     | 25         | 0.5         |
| entities/User.java                             | 34         | 0.7         |
| repositories/AlbumRepository.java              | 8          | 0.3         |
| repositories/AlbumWithoutImageRepository.java  | 8          | 0.4         |
| repositories/ArtistRepository.java             | 8          | 0.3         |
| repositories/ArtistWithoutImageRepository.java | 8          | 0.4         |
| repositories/ArtistXAlbumRepository.java       | 8          | 0.4         |
| repositories/UserRepository.java               | 8          | 0.3         |
| <b>SUM, 24 files:</b>                          | <b>838</b> | <b>27.7</b> |

## CSS



|                       | SLOC       | KB         |
|-----------------------|------------|------------|
| about-page.css        | 41         | 0.5        |
| album.css             | 161        | 2.3        |
| artist.css            | 120        | 1.9        |
| basic.css             | 34         | 0.5        |
| bootstrap-mods.css    | 55         | 0.8        |
| edit-mode.css         | 15         | 0.2        |
| font-imports.css      | 53         | 1.3        |
| form.css              | 50         | 0.6        |
| header.css            | 4          | 0.1        |
| modal.css             | 7          | 0.1        |
| sticky-footer.css     | 9          | 0.1        |
| style.css             | 19         | 0.4        |
| user-menu.css         | 41         | 0.5        |
| variables.css         | 3          | 0.0        |
| <b>SUM, 15 files:</b> | <b>612</b> | <b>9.3</b> |

## JavaScript



|                                      | SLOC         | KB          |
|--------------------------------------|--------------|-------------|
| displayPage.js                       | 71           | 2.4         |
| eventsForAlbumForm.js                | 65           | 2.4         |
| eventsForArtistForm.js               | 42           | 1.6         |
| eventsForUserForm.js                 | 43           | 1.6         |
| main.js                              | 46           | 1.6         |
| render404.js                         | 14           | 0.4         |
| renderAboutFromReadMe.js             | 24           | 0.7         |
| renderAlbumForm.js                   | 70           | 2.7         |
| renderAlbums.js                      | 103          | 3.9         |
| renderArtistForm.js                  | 40           | 1.5         |
| renderArtists.js                     | 96           | 3.5         |
| renderLoginForm.js                   | 53           | 1.9         |
| renderNavbar.js                      | 60           | 2.3         |
| renderSpotifyPlaylist.js             | 35           | 1.2         |
| renderUserForm.js                    | 55           | 1.9         |
| renderUserMenu.js                    | 52           | 1.7         |
| utils/addEventListener.js            | 14           | 0.7         |
| utils/addRelations.js                | 16           | 0.6         |
| utils/closeHamburgerBar.js           | 8            | 0.2         |
| utils/displayToast.js                | 24           | 0.9         |
| utils/fetchHelpers.js                | 49           | 1.3         |
| utils/fileToBase64.js                | 11           | 0.4         |
| utils/followExternalLinksInNewTab.js | 6            | 0.2         |
| utils/formDataCollector.js           | 22           | 0.7         |
| utils/navigate.js                    | 8            | 0.2         |
| utils/noCommasOnArrayToString.js     | 2            | 0.1         |
| utils/setActiveMenuChoice.js         | 13           | 0.6         |
| utils/usePushStateOnInternalLinks.js | 15           | 0.5         |
| utils/waitForModalAnswer.js          | 43           | 1.6         |
| <b>SUM, 30 files:</b>                | <b>1,100</b> | <b>39.3</b> |

### TOTAL STATISTICS

69 files

76 kilobytes of source code

2,550 source lines of code