

Assignment 5: Vue - Artist Search

EECS 493 Fall 2022

Released: Tuesday, **10/25/2022**

Due: Sunday, **11/20/2022** at 11:59pm

Submission Instructions: Please submit your work to Canvas as a zip file, named "a5_<your_uniq_name>.zip." Please keep the existing directory structure and do not add any more folders/files (unless for bonus credit). *Not following the upload instruction will result in a penalty.*

- Rename the "a5_starter_code" folder, which **contains the code you write**, into a5_<your_uniq_name>.
 - e.g. if your username is "abc", then the folder name should be "a5_abc".
- Zip the folder and upload the zip file. Renaming (e.g., "-1") done by Canvas is fine.


Objective: The objective of this assignment is for you to gain practical experience with the MVC pattern using Vue.js, a web application development framework, and Bootstrap, a CSS framework for responsive design.

See this video for a project overview:

https://drive.google.com/file/d/1u_rV33r93uqvcms-x1QISyzMq6rv8WIS/view?usp=sharing

The search results from the video are inaccurate. Please refer to the screenshots below for the correct results.

Tutorial: Here is a tutorial containing links to documentations of everything you need to complete this assignment. Whenever you are stuck or confused about anything, check out this tutorial; it will help a lot.

 Tutorial

Instructions: We would like you to create a digital "Artist Search" website as outlined in the attached spec below. The application has **6** main components (denominator of 100 points):

1. Search Bar - 25 points
2. Artists Grid - 30 points
3. Navigation Tabs - 5 points
4. Track Information - 5 points
5. Genre Selection - 20 points
6. Sort Menu - 15 points
7. **[Optional]** Bonus Features - up to 10 points

Starter code: you will use the starter code we provide to finish this assignment:

https://drive.google.com/file/d/1Ghskz9Tdp_P8akwckO0jIrtZHCDtFKLx/view?usp=sharing

The starter code we provide includes the following:

- script.js: Placeholder for *one* Vue.js instance [Put your JS code in this file]
- index.html: The HTML page [Put your HTML code in this file]

- loading.gif: Show this gif while waiting for artist information to come back
- index.css: Additional customized style [DO NOT MODIFY THIS FILE]
- img/1.jpg & img/2.jpg: Two image placeholders (your final code won't need them)

Notes:

- You aren't required to use any of the starter code, but it's there to help you.
- Unless you know what you are doing, please do NOT modify anything inside the <head> tag in index.html.
- Please refer to Piazza for any modifications and clarifications.
- Make sure that your application (webpage) behaves properly on the latest version of Google Chrome. Your graders will use Chrome.
- To make sure your code runs correctly, it might be helpful to test it on a different computer.

Contents of This Spec:

- [Assignment 3 Screenshots and Overview](#)
- [Assignment 3 Ground Rules](#)
- [Assignment 3 Feature Requirements & Bonus Points](#)
- [Note about CORS Headers](#)

Screenshots:

Homepage with search bar:

493 Artist Search

Enter the name of the artist and enter :

Seach Result (Total 0 Found.)

List of results

Sort list of results by: ▼

After searching for an artist:

493 Artist Search

Enter the name of the artist and enter :

Seach Result (Total 50 Found.)

ALL


Electronic

Dance

Pop

List of results


Sort list of results by: ▼



Description

Track Info.


Artist Name: ayokay & Quinn XCII
Collection Name: 4ft to Infinity - EP
Price: 4.99
Kind: song
Preview: [Link](#)



Description

Track Info.


Artist Name: ayokay & Quinn XCII
Collection Name: Kings of Summer - Single
Price: 1.29
Kind: song
Preview: [Link](#)



Description

Track Info.

Artist Name: ayokay
Collection Name: In the Shape of a Dream
Price: 8.99
Kind: song
Preview: [Link](#)



Description

Track Info.

Artist Name: Shallou & ayokay
Collection Name: Us - Single
Price: 1.29
Kind: song
Preview: [Link](#)

“Track Info.” tab for the left two results:

493 Artist Search

Enter the name of the artist and enter :

Seach Result (Total 50 Found.)

ALL


Electronic

Dance

Pop

List of results

Sort list of results by: ▾




Description

Track Info.

Track ID: 1160446542

Country: USA



Description

Track Info.


Artist Name: ayokay & Quinn XCII

Collection Name: Kings of Summer - Single

Price: 1.29

Kind: song

Preview: [Link](#)




Description

Track Info.

Track ID: 1433987966

Country: USA



Description

Track Info.

Artist Name: Shallou & ayokay

Collection Name: Us - Single

Price: 1.29

Kind: song

Preview: [Link](#)

Sort menu:

493 Artist Search

Enter the name of the artist and enter :

Seach Result (Total 50 Found.)

ALL

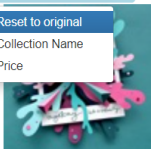
Electronic

Dance

Pop

List of results

Sort list of results by: ▾
Reset to original
Collection Name
Price




Description

Track Info.

Track ID: 1160446542

Country: USA



Description

Track Info.

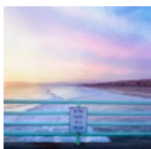
Artist Name: ayokay & Quinn XCII

Collection Name: Kings of Summer - Single

Price: 1.29

Kind: song

Preview: [Link](#)




Description

Track Info.

Track ID: 1433987966

Country: USA



Description

Track Info.

Artist Name: Shallou & ayokay

Collection Name: Us - Single

Price: 1.29

Kind: song

Preview: [Link](#)

After sorting by “Collection Name”:

493 Artist Search

Enter the name of the artist and enter :

Search Result (Total 50 Found.)

ALL


Electronic

Dance

Pop

List of results

Sort list of results by: ▾



Description

Track Info.


Artist Name: ayokay & Quinn XCII

Collection Name: 4ft to Infinity - EP

Price: 4.99

Kind: song

Preview: [Link](#)



Description

Track Info.


Artist Name: ayokay

Collection Name: 4ft to Infinity - EP

Price: 4.99

Kind: song

Preview: [Link](#)



Description

Track Info.


Artist Name: ayokay

Collection Name: 4ft to Infinity - EP

Price: 4.99

Kind: song

Preview: [Link](#)



Description

Track Info.

Artist Name: ayokay

Collection Name: 4ft to Infinity - EP

Price: 4.99

Kind: song

Preview: [Link](#)

After sorting by “Price”:

493 Artist Search

Enter the name of the artist and enter :

Search Result (Total 50 Found.)

ALL


Electronic

Dance

Pop

List of results

Sort list of results by: ▾



Description

Track Info.


Artist Name: ayokay

Collection Name: All Mine - Single

Price: 1.29

Kind: song

Preview: [Link](#)



Description

Track Info.


Artist Name: ayokay

Collection Name: Better With You - Single

Price: 1.29

Kind: song

Preview: [Link](#)



Description

Track Info.


Artist Name: ayokay

Collection Name: California Will Never Rest - Single

Price: 1.29

Kind: song

Preview: [Link](#)



Description

Track Info.

Artist Name: ayokay

Collection Name: Cassette - Single

Price: 1.29

Kind: song

Preview: [Link](#)

After (resetting sort to original and) selecting the “Dance” and “Pop” genre selections:

493 Artist Search

Enter the name of the artist and enter :

Seach Result (Total 17 Found.)

ALL


Electronic

Dance

Pop

List of results

Sort list of results by: ▾



Description

Track Info.


Artist Name: Quinn XCII, Jeremy Zucker & ayokay

Collection Name: No information provided

Price: 1.99

Kind: music-video

Preview: [Link](#)



Description

Track Info.


Artist Name: ayokay & Disco Lines

Collection Name: I Still Need You (Disco Lines Remix) - Single

Price: 1.29

Kind: song

Preview: [Link](#)



Description

Track Info.


Artist Name: ayokay & Nightly

Collection Name: Digital Dreamscape

Price: 9.99

Kind: song

Preview: [Link](#)



Description

Track Info.

Artist Name: ayokay & Stay Over

Collection Name: Digital Dreamscape

Price: 9.99

Kind: song

Preview: [Link](#)

Ground Rules:

1. The primary point of the assignment is to use MVC pattern in developing the application using Vue.js. Therefore, reference and direct modification of HTML elements (such as \$(".class"), append(), document) in JavaScript and jQuery are **not allowed**.
 - a. For example, using jQuery or JavaScript code that access HTML elements is **NOT** allowed (will result in significant deductions).
2. We've given you some starter code, and you'll only need to write JavaScript code inside Vue instance(s) and Vue code in an HTML file.
 - a. We already created one Vue instance for you. However, you can add other instances if you prefer, but no extra JS code should be written outside of Vue instances (will result in deductions).
3. The above rules help ensure that you properly implement View related code in HTML (index.html) using Vue.js.
4. Every style-related element of the assignment **MUST** be done via Bootstrap. You are **NOT** allowed to use inline styling or define/use any custom CSS class/id other than the ones we provided in index.css. It may take some time to learn, but it is much easier to achieve the same style requirement using Bootstrap than plain CSS.
 - a. i.e. Do **NOT** modify index.css
5. Do **NOT** modify anything inside the <head> tag in index.html, unless you know what you are doing.
6. The provided index.html file **includes jQuery, Bootstrap, Vue.js, and Axios**.
 - a. If you don't have access to the internet, this index.html file will not work.
 - b. Graders will grade your submission in Chrome with online access.
7. Note that the given HTML file has some hard-coded data. This is just to show you an example but the hard-coded data should eventually be replaced with your code.
8. Submit one .zip file that includes all four files that are included in the starter code with no changes to the file structure. Additional files are neither needed nor should be included (will result in deductions).
 - a. Once we unzip the folder, the index.html file should work as long as we have access to the internet. This is necessary for grading.
9. To complete this assignment, you will need to revise (add/modify/delete) HTML code and add JavaScript code in index.html file and script.js file respectively. Do not add any .css files (will result in deductions).
10. Follow the upload instructions at the top of the spec (will result in deductions if not

followed).

11. For the Model in MVC, this assignment uses iTunes API, which again requires Internet access. Plan ahead if you will be in a situation that has no internet access. It is your responsibility to read the documentation and figure out the data structure of the JSON object.
12. This assignment heavily requires online search and reading the documentation of Vue.js and iTunes API that we use. The assignment may include materials that are not covered in class. We believe that, in today's programming practice, searching and mining information from online materials is a significant part of a programmer's expertise. Google is our best friend!
13. Check out Piazza frequently for any change or additional information.

Requirements:

We outline requirements for each of the game components below. **Everything listed below, unless labeled as “Suggested”, is required.** Please be sure to examine the provided video closely to understand the expected behavior. You are allowed to change anything in “index.html” and “script.js”.

1. General

- a. Ground rules - *max 50 points off if not followed*

2. Search Bar - 30 points

- a. There is one input textbox provided in the HTML file.
- b. When a user types a keyword and presses the “Enter” key, the entered string should be used to make an AJAX call that requests a json object.
 - i. Hint: Use `v-on:keyup` to check if the key was “enter (keycode:13)” or not
- c. The entered string will be used to search artists whose names contain the keyword.
- d. Do NOT use jQuery `$.ajax`, but instead use Vue.js AJAX call – Axios – or simply use `fetch()`.
- e. The URL that you need to make an AJAX request and the data structure of the returned json object are specified here:
 - i. iTunes Search API: <https://goo.gl/UXwDce>
 - ii. When sending the request, all entity types are fine, including ebooks.
 - iii. When a query has over 50 results, it should only return a maximum of 50 tracks.
- f. **Print out the returned json object in the console, using JS `console.log()`, when making requests for the APIs.**
 - i. This should be the *only* thing that is printed in the console.
 - ii. We will take off points if the above requirements are not met.
- g. When there are no artists returned from iTunes, alert the user, using JS `alert()`, that no artist was found with the keyword.
- h. “Total *N* found” message should display the total number of artists (*N*) returned by the iTunes API.

3. Artists Grid - 30 points

- a. The returned artists should be displayed in *two columns*, where each result grid contains both an image and 5 types of related information displayed right next to each other (when the browser is in full size).
- b. One exception will be the last row that may have less than two artist grids depending on the number of artists returned.
- c. Please use the Bootstrap Grid system to accomplish the above requirements. Check out [this web page](#) for more detail. Make sure you understand how it works because it is a great way to realize layouts we learned from the class.
- d. When correctly implemented with Bootstrap, the layout will naturally be responsive (e.g. resizing the browser will automatically resize the images and

the nav-tabs, and shift them to the next row).

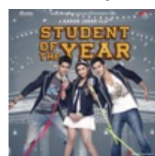
- e. Typically, iTunes will provide an image URL for each artist. Use the first URL in the list in general.
- f. Note: We provided [a screenshot](#) of the search result when a user searches for an artist. When unsure, please refer to these, your web page **should look pretty much the same** as the one in the screenshot.

4. Navigation Tabs - 5 points

- a. The returned artists should also have their information displayed next to them in the navigation tabs.
- b. Please use Bootstrap's nav-tabs (and other related classes) for this and next part (i.e. 4 and 5). Note that we already provided some example nav-tab code in the starter file. For more info, check out the Tutorial document linked at the beginning of the spec.
- c. The 'Description' tab should contain: artist name, collection name, price, type, and preview link. This series of information can be found in the response JSON data.
 - i. If the price is not provided, set the price to 0.
 - ii. Else, if one of the returned values is an empty string, display "No information provided" instead.
- d. Clicking the preview link should open the preview of the song or movie trailer from this artist in another tab.
- e. You might find it's a bit tricky to prevent the clicking events from propagating.

5. Track Information - 5 points

- a. When clicking the 'Track Info.' tab, the system should display the Track ID (which is a unique identifier) & Country for that particular search result.
- b. This means, whenever you click on the 'Track Info.' tab, the unique identifier will change for each different 'Track Info.' tab you click on. Here's an example for a query with 'Shreya Ghoshal':



Description Track Info.

Track ID: 556951487
Country: USA



Description Track Info.

Track ID: 305196830
Country: USA



Description Track Info.

Artist Name: Sonu Nigam & Shreya Ghoshal
Collection Name: 3 Idiots (Original Motion Picture Soundtrack)
Price: 9.03
Kind: song
Preview: [Link](#)



Description Track Info.

Artist Name: Shreya Ghoshal & Osman Mir
Collection Name: Goliyon Ki Raasleela Ram-Leela (Original Motion Picture Soundtrack)
Price: 9.9
Kind: song
Preview: [Link](#)

- i.
- c. Hint: The key to getting this section to work is figuring out how to get only that particular div to change when you click on that 'Track Info.' tab. Check out the

Tutorial document linked at the beginning of the spec if you would like a more specific hint.

- d. When clicking back to the 'Description' tab, the five types of information should still be there.

6. **Genre Selection** - 15 points

- a. Create a list of tags of which genre labels are available from the search results. (See screenshots/video above)
- b. As a user toggles a genre, only the artists that are categorized in the selected genre should appear in the grid.
 - i. The number of results should update as well.
 - ii. You can select and deselect genres
 - iii. The genres selected should be indicated by the change in the background color.
- c. Once you select other genres besides ALL, the ALL button should indicate the change in the background color.
- d. Please use Bootstrap's btn (and related classes) for this part. Note that different button colors can and should also be achieved using Bootstrap. For more info, check out the Tutorial document linked at the beginning of the spec.
- e. If a user has multiple genres selected, the artist shown in the grid should be categorized in one of the selected genres at least (not necessarily all genres selected). (The more genres that are selected the more results should be displayed)
- f. If ALL is selected, the other genres are deselected and return to the original list sorted by the current sort selection. (see Sort Menu)

7. **Sort Menu** - 15 points

- a. A "Sort list of results by:" button that displays a dropdown menu when clicked.
 - i. There are three options in the menu:
 - Reset to original
 - Collection Name
 - Price
- b. For "Reset to original", reset the displayed results to the original order.
 - i. This should be the default selection.
- c. For "Collection Name", sort results alphabetically by collection name.
- d. For "Price", sort results by increasing price.
- e. The selected option should be indicated by a distinct background color.
- f. Please use Bootstrap's dropdown (and related classes) for this part. Note that different background colors of the options can and should also be achieved using Bootstrap. For more info, check out the Tutorial document linked at the beginning of the spec.
- g. When multiple genres are selected, the list of results should still be updated by the sort selection (collection name and price).
 - i. In other words, when you select a genre, the sort option should not reset.

The following bullet points provide another example of what the sort menu should look like and how it works.

- h. In the dropdown menu, initially, it should be set as the “Reset to original” indicated below by **blue background selection**

493 Artist Search

Enter the name of the artist and enter :

Seach Result (Total 50 Found.)

ALL

Soundtrack

Anime

Electronic

List of results

Sort list of results by:

Reset to originalCollection NamePrice

DescriptionTrack Info.

Artist Name: Shiro Sagisu & Yoko Takahashi
Collection Name: Neon Genesis Evangelion (Original Series Soundtrack)
Price: 9.99
Kind: song
Preview: [Link](#)

DescriptionTrack Info.

Artist Name: Shiro Sagisu
Collection Name: TV Animation BLEACH (Original Soundtrack 1)
Price: -1
Kind: song
Preview: [Link](#)

DescriptionTrack Info.

Artist Name: Shiro Sagisu & Yoko Takahashi
Collection Name: Evangelion Finally
Price: 10.99
Kind: song
Preview: [Link](#)

DescriptionTrack Info.

Artist Name: Shiro Sagisu
Collection Name: Neon Genesis Evangelion (Original Series Soundtrack)
Price: 9.99
Kind: song
Preview: [Link](#)

- i. When selecting a different option, it should be changed to that selection, for example, selecting “Collection Name”, indicated by the blue background

493 Artist Search

Enter the name of the artist and enter :

Seach Result (Total 50 Found.)

ALL

Soundtrack

Anime

Electronic

List of results

Sort list of results by:

Reset to originalCollection NamePrice

DescriptionTrack Info.

Artist Name: Shiro Sagisu
Collection Name: BLEACH the Movie: Fade to Black (Original Soundtrack)
Price: 16.99
Kind: song
Preview: [Link](#)

DescriptionTrack Info.

Artist Name: Shiro Sagisu
Collection Name: BLEACH the Movie: Fade to Black (Original Soundtrack)
Price: 16.99
Kind: song
Preview: [Link](#)

DescriptionTrack Info.

Artist Name: Shiro Sagisu
Collection Name: BLEACH the Movie: The DiamondDust Rebellion (Original Soundtrack)
Price: 16.99
Kind: song
Preview: [Link](#)

DescriptionTrack Info.

Artist Name: Shiro Sagisu
Collection Name: BLEACH the Movie: The DiamondDust Rebellion (Original Soundtrack)
Price: 16.99
Kind: song
Preview: [Link](#)

- j. After an artist search and sorting by “Collection Name”, then selecting different genres should still update the list by “Collection Name”.
In other words, if the user sorts by Collection Name, it should update the list sorted by collection name; after that, if the user picks a genre, e.g. Anime, it should update the Anime list sorted by collection name too.

493 Artist Search

Enter the name of the artist and enter :


Shiro Sagisu

Search Result (Total 11 Found.)

ALL Soundtrack Anime Electronic

List of results

Sort list of results by ▾



Description

Track Info.


Artist Name: Shiro Sagisu

Collection Name: BLEACH the Movie: Fade to Black (Original Soundtrack)

Price: 16.99

Kind: song

Preview: [Link](#)



Description

Track Info.


Artist Name: Shiro Sagisu

Collection Name: BLEACH the Movie: Fade to Black (Original Soundtrack)

Price: 16.99

Kind: song

Preview: [Link](#)



Description

Track Info.


Artist Name: Shiro Sagisu

Collection Name: BLEACH the Movie: The DiamondDust Rebellion (Original Soundtrack)

Price: 16.99

Kind: song

Preview: [Link](#)



Description

Track Info.

Artist Name: Shiro Sagisu

Collection Name: BLEACH the Movie: The DiamondDust Rebellion (Original Soundtrack)

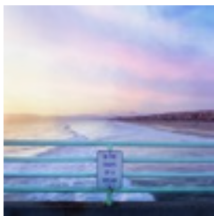
Price: 16.99

Kind: song

Preview: [Link](#)

- k. This should work when selecting any of the three sort options.

8. **[BONUS] (10 points max). This is completely optional.**
- Instructions:** If you have added any feature, please include **README.txt** file in the submission and explain what you implemented; otherwise we won't grade this task (this is the only time you are allowed to add a file to the directory structure).
 - DO NOT CHANGE ANY EXISTING REQUIREMENTS FROM THE SPEC!!**
 - Add a “play” button to each of the ‘Description’ tabs (as shown below). After pressing the play button, it should start playing the song, and on the button, “play” should change to “stop”. When the “stop” button is clicked, it should stop playing the song and revert back to “play”.



Description

Track Info

Artist Name: ayokay

Collection Name: In the Shape of a Dream


Price: \$1.29

Type: track

Preview: [link](#)

Play

i.



Description

Track Info

Artist Name: ayokay

Collection Name: In the Shape of a Dream

Price: \$1.29

Type: track

Preview: [link](#)

Stop

ii.

- d. Add a button after 'Sort list of results by:'. After clicking the button, a popup should appear that displays all the song (track) names returned by fetch grouped by collection name.

Note about CORS Headers

In doing this project, you might run into your search results being rejected with a “CORS” message. This error is largely server-side, so there is no simple solution. The success of the request will change depending on what browser you are using, if you are hosting the page on the server, and the configuration of the iTunes server the artist you are requesting is stored on.

One solution that often works is adding "&origin=" to the end of your search query. This will often resolve the error if you are running your code directly from a file.

There are other ways that might help if you still encounter this issues:

- Test with an artist that isn't the one shown in the example video. We suspect that iTunes has changed the way it processes requests coming from the UMich wireless network for the example artist, since there are suddenly several hundred identical requests every minute in the exact same format from the exact same location. Suggesting a different artist to search would be self-defeating, but you should be testing your implementation with a variety of artists anyway.
- Ordering matters in the iTunes API call, so you can play around with the ordering of your added keys to the query
- Do not open the file as a local server (localhost:XXXX/<file path>). My IDE automatically opens HTML files in a server rather than opening the raw file in a browser (<filepath>), and opening it as a raw file stopped it

Again, many of these errors are configuration dependent. If you continue to have issues, please come speak to us in office hours or post on Piazza.