CHAPTER 4

Day 4: Building an Application in Vue.js

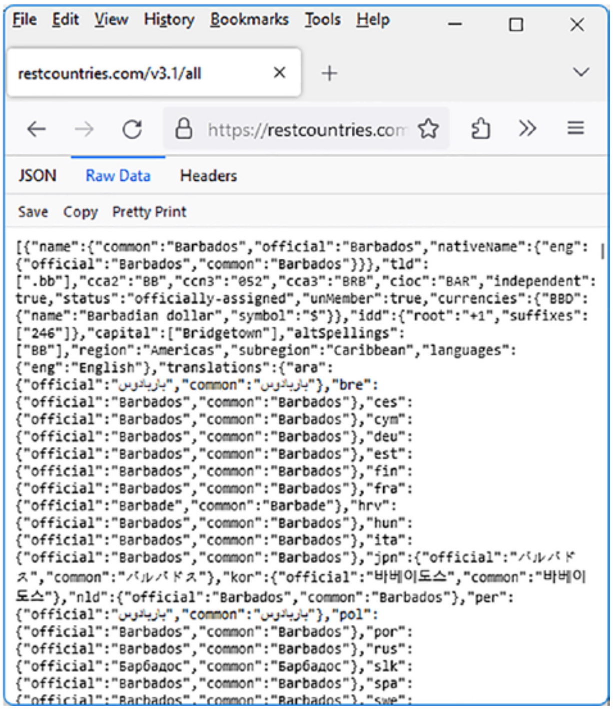
In this chapter, we'll delve into a fundamental aspect of modern web development: communication between the client and server via HTTP requests. You'll learn how to make requests to retrieve data from a remote server and use it in your Vue.js application.

We'll build a practical application to implement these concepts. The application will display a list of all countries worldwide, allowing the user to filter this list based on the characters entered in a search field. To achieve this, we'll use the REST API available at the following URL: `https://restcountries.com/v3.1/all`.

So not only will you reinforce your Vue.js skills, but you'll also acquire new skills in JSON data manipulation and interacting with REST APIs.

Introduction to the REST API

The list of countries is retrieved from the following URL: `https://restcountries.com/v3.1/all`. If you enter this URL into a browser, you'll receive a JSON-formatted response like the following:


File Edit View History Bookmarks Tools Help
restcountries.com/v3.1/all
https://restcountries.com
JSON Raw Data Headers
Save Copy Pretty Print

```
[{"name":{"common":"Barbados","official":"Barbados","nativeName":{"eng":
{"official":"Barbados","common":"Barbados"}}},"tld":
[".bb"],"cca2":"BB","ccn3":"052","cca3":"BRB","cioc":"BAR","independent":
true,"status":"officially-assigned","unMember":true,"currencies":{"BBD":
{"name":"Barbadian dollar","symbol":"$"}},"idd":{"root":"+1","suffixes":
["246"]},"capital":["Bridgetown"],"altSpellings":
["BB"],"region":"Americas","subregion":"Caribbean","languages":
{"eng":"English"},"translations":{"ara":
{"official":"باربادوس","common":"باربادوس"},"bre":
{"official":"Barbados","common":"Barbados"},"ces":
{"official":"Barbados","common":"Barbados"},"cym":
{"official":"Barbados","common":"Barbados"},"deu":
{"official":"Barbados","common":"Barbados"},"est":
{"official":"Barbados","common":"Barbados"},"fin":
{"official":"Barbados","common":"Barbados"},"fra":
{"official":"Barbade","common":"Barbade"},"hrv":
{"official":"Barbados","common":"Barbados"},"hun":
{"official":"Barbados","common":"Barbados"},"ita":
{"official":"Barbados","common":"Barbados"},"jpn":{"official":"バルバド
ス","common":"バルバドス"},"kor":{"official":"바베이도스","common":"바베이
도스"},"nld":{"official":"Barbados","common":"Barbados"},"per":
{"official":"باربادوس","common":"باربادوس"},"pol":
{"official":"Barbados","common":"Barbados"},"por":
{"official":"Barbados","common":"Barbados"},"rus":
{"official":"Барбадос","common":"Барбадос"},"slk":
{"official":"Barbados","common":"Barbados"},"spa":
{"official":"Barbados","common":"Barbados"},"swe":
```

Figure 4-1. *Response from the URL* *`https://restcountries.com/v3.1/all`*

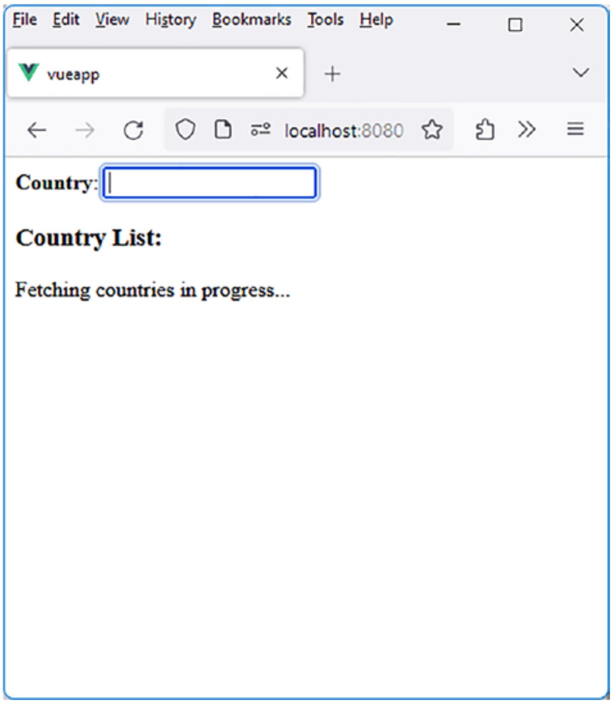
The displayed response shows that the provided data corresponds to an array of JavaScript objects, containing detailed information about each country.

The goal of this example will be to make an HTTP request to this server and then display the response in a browser as a list.

Application Screens

Here, we describe all the screens of the application, based on user actions.

Upon launching the application, the list of countries is retrieved (Figure 4-2) and displayed (Figure 4-3):

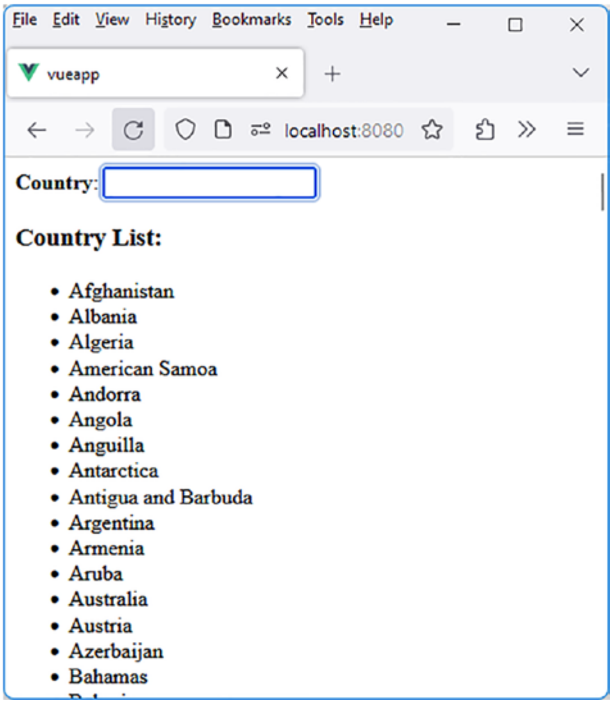


Country:

Country List:

Fetching countries in progress...

Figure 4-2. *Fetching country list*



Country:

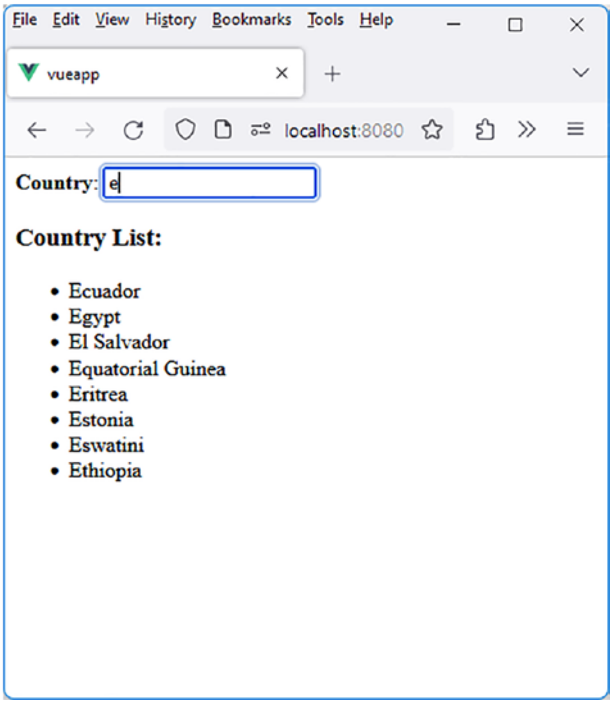
Country List:

- Afghanistan
- Albania
- Algeria
- American Samoa
- Andorra
- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas

Figure 4-3. *Country list retrieved and displayed*

The "Country" input field allows entering the beginning of a country name. The displayed countries in Figure 4-4 will then be those whose names start with the entered letters.

If you type "e" in the field, only countries whose names start with "e" will be displayed:



Country: e

Country List:

- Ecuador
- Egypt
- El Salvador
- Equatorial Guinea
- Eritrea
- Estonia
- Eswatini
- Ethiopia

Figure 4-4. *The list of countries is filtered based on the entered beginning of the country's name*

The list updates as the input is entered.

Let's see how to implement this application with Vue.js. We'll start by breaking down the application into components.

Breaking Down the Application into Components

The application will consist of two components:

1. The App component containing the overall application. It will include an input field for the country name and a MyCountries component containing the list of countries.
2. The MyCountries component that contains the list of countries and displays those whose names start with the letters entered in the country name field (from the App component).

To achieve this, the MyCountries component should have an attribute representing the entered country name in the App component. The MyCountries component will automatically refresh whenever the country name is modified in the input field.

We can start writing the App and MyCountries components as follows:

App component (src/App.vue file)

```
<script setup>

import MyCountries from './components/MyCountries.vue'

import { ref } from "vue";

const name = ref("");

</script>

<template>

<b>Country</b>: <input type="text" v-model="name" />
<br>
<MyCountries :name="name" />

</template>
```

The country name input field is associated with a reactive variable, `name`, updated as the input progresses through the `v-model` directive. This reactive variable `name` is passed as an attribute to the `MyCountries` component, which will be automatically updated whenever the attribute's value changes.

The `MyCountries` component is outlined here in a concise manner. Currently, it simply displays the value of the `name` attribute passed to it, along with the "Retrieving countries..." message displayed until the list of countries is retrieved.

MyCountries component (src/components/MyCountries.vue file)

```
<script setup>

import { defineProps, ref } from "vue";
defineProps(["name"]);

const names = ref([]);   // Countries names displayed in
                         the list
let countries= [];       // All country names (retrieved only
                         once at startup)

</script>

<template>

<h3>Country List</h3>

<div v-show="!countries.length">Fetching countries in
progress...</div>
Entered Country: {{name}}
<ul>
<li v-for="n in names" :key="n" >{{n}}</li>
</ul>

</template>
```

Let's make some observations about the code of the `MyCountries` component:

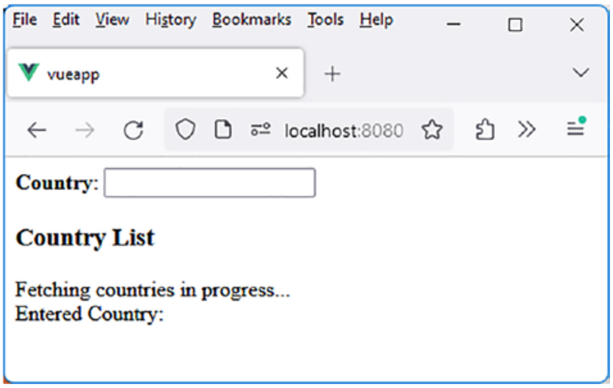
1. The `name` attribute is retrieved using `defineProps(["name"])` and then displayed in the `<template>` with `{{name}}`. Indeed, this ensures that communication between the `App` component and the `MyCountries` component is established.

2. The "Fetching countries in progress ..." waiting text will be displayed only when the list of countries has not been retrieved yet. This is achieved using the `v-show` directive with the condition `"!countries.length"`, meaning that the associated `<div>` is displayed only if the retrieved list of countries is empty.

3. The reactive variable `names` contains the list of all retrieved countries and is updated based on the value of the transmitted `name` attribute. It is displayed as a list `<li>` with a `v-for` directive.

4. The `countries` variable represents the list of all country names, retrieved only once during the application's launch.

Let's examine the result produced by the implementation of these two components:



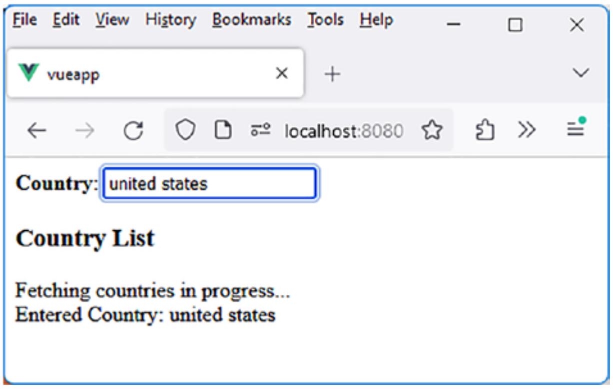
Country:

Country List

Fetching countries in progress...
Entered Country:

Figure 4-5. *Application launch (temporary)*

If we type the beginning of a name in the input field, it should be displayed in the `MyCountries` component. This demonstrates that attribute-based communication between the `App` component and the `MyCountries` component is functioning:



Country: united states

Country List

Fetching countries in progress...
Entered Country: united states

Figure 4-6. *Entering the name of a country*

The foundational components are created. Now, let's enhance them to finalize our application.

Retrieving the List of Countries

Let's start by fetching and displaying the list of countries. This list is retrieved only once, at the application's startup. We perform this operation in the MyCountries component. To ensure it happens only once at startup, we decide to do it in the onMounted() method, which is called when the component is mounted in the DOM.

Retrieve the list of country names (src/components/MyCountries.vue file)

```
<script setup>

import { defineProps, ref, onMounted } from "vue";
defineProps(["name"]);

const names = ref([]);   // Countries names displayed in
                         the list
let countries= [];       // All country names (retrieved only
                         once at startup)

onMounted(() => {
  var url = "https://restcountries.com/v3.1/all";
  fetch(url)
  .then((res) => res.text())
  .then((data) => {
    countries = JSON.parse(data).map(function(elem) {
      return elem.name.common;
    });
    // In ascending alphabetical order
    countries = countries.sort((n1, n2) => {
      if (n1 > n2) return 1;
      if (n1 < n2) return -1;
      return 0;
    });
    names.value = countries;    // Updating the displayed list.
  })
  .catch((err) => names.value = [err.toString()]);
});

</script>

<template>

<h3>Country List:</h3>

<div v-show="!countries.length">Fetching countries in
progress...</div>
<ul>
<li v-for="n in names" :key="n" >{{n}}</li>
</ul>

</template>
```

We utilize the JavaScript `fetch(url)` method to make a request to a server. The server's response is then transformed and placed into an alphabetically sorted array called `countries`.

Please note that we use `elem.name.common` to retrieve the country's name. You can see it by looking at Figure 4-1 that displays the full JSON response.

This array is subsequently transferred to the reactive variable `names`, which is displayed as a list using the `v-for` directive in the `<template>` section of the component. Additionally, since the `countries` array will be populated with at least one element, the "Fetching countries in progress..." waiting text will be hidden, and the list of countries will be displayed.

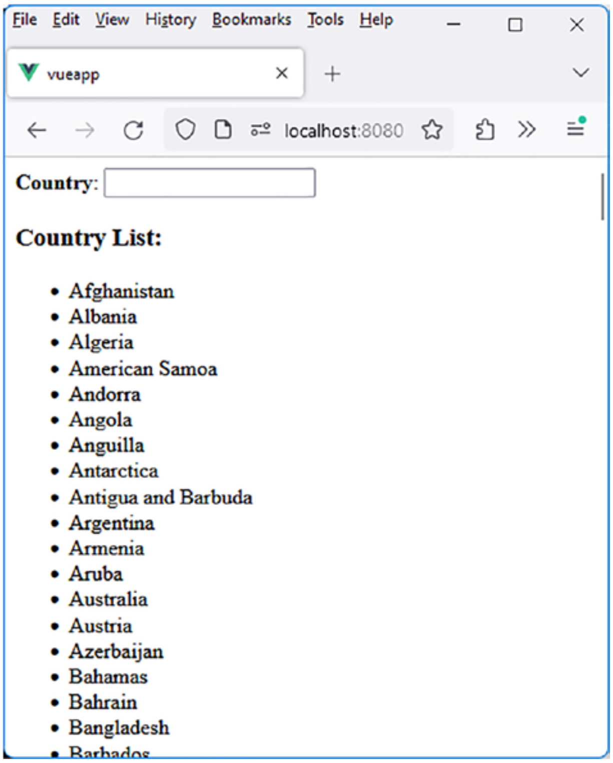
In this context, we have employed JavaScript promises, utilizing the then() and catch() methods. An alternative version of this program utilizes JavaScript's async and await instructions.

Using async and await instructions (src/components/MyCountries.vue file)

```
<script setup>

import { defineProps, ref, onMounted } from "vue";
defineProps(["name"]);

const names = ref([]);   // Countries names displayed in
                         the list
let countries= [];       // All country names (retrieved only
                         once at startup)

async function getCountries() {
  var url = "https://restcountries.com/v3.1/all";
  var response = await fetch(url);
  var data = await response.text();
  countries = JSON.parse(data).map(function(elem) {
    return elem.name.common;
  });
  // In ascending alphabetical order
  countries = countries.sort((n1, n2) => {
    if (n1 > n2) return 1;
    if (n1 < n2) return -1;
    return 0;
  });
  return countries;
}
```

```
onMounted(async () => {
  names.value = await getCountries();
});

</script>


<template>

<h3>Country List:</h3>

<div v-show="!countries.length">Fetching countries in
progress...</div>
<ul>
<li v-for="n in names" :key="n" >{{n}}</li>
</ul>

</template>
```

We have created the function `getCountries()` as an asynchronous function, called directly in the `onMounted()` method using the `async` and `await` instructions. Regardless of the program version used, the list of countries is retrieved and then displayed:



Country:

Country List:

- Afghanistan
- Albania
- Algeria
- American Samoa
- Andorra
- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados

Figure 4-7. *Retrieved and displayed list of countries*

The list of countries is now successfully retrieved and displayed. Let's now explore how to filter the list based on the entered beginning of the country's name in the Country field.

Filtering the List of Countries According to the Entered Name

Currently, entering characters in the country name field does not produce any changes to the displayed list. This is expected because the `MyCountries` component does not yet consider the `name` attribute that is passed to it.

To filter the list of countries based on the entered name, you would need to execute the following code block:

Filter the list based on the entered name

```
let countriesFiltered = countries.filter((n) => {
  // Construct the regular expression (regex)
  const reg = new RegExp("^" + props.name, "i");
  if (n.match(reg)) return true;   // We keep the name in
                                   the list
  else return false;               // We do not keep the name
                                   in the list
});
names.value = countriesFiltered;   // Update the displayed list
```

Let's provide some explanations for this code block:

1. The variable `countriesFiltered` contains an array of country names constructed from the initial `countries` array. For example, if we want to keep in the list the names of countries starting with `"fr"`, we use the regular expression `"^fr"`, where `"fr"` is the word transmitted in the `name` attribute and therefore included in `props.name`.
2. The `"i"` parameter used as the second argument in the `RegExp` class signifies case insensitivity, meaning it ignores uppercase or lowercase distinctions in country names.
3. The `filter()` method returns a new array, indicating whether to keep (`return true`) or reject (`return false`) the initial element.

4. It then remains to update the reactive variable `names` with this new list of country names, which is done by writing `names.value = countriesFiltered`.

Now, the question arises as to where to place this code block. One might be tempted to place it in the `onUpdated()` method of the component, which is called when the component is updated, but that's not a good idea. Updating the reactive variable `names` in this part of the code would result in an infinite loop because it would trigger a new update of the component, leading to a new call to the `onUpdated()` method.

To avoid such issues, Vue.js has created the `watch()` method, which allows you to perform a task when a variable is updated. The observed variable here will be `props.name`, which is the value of the `name` attribute in the `MyCountries` component.

Using the watch( ) Method

The `watch(name, callback)` method allows observing changes that occur on a reactive variable named `name` and invoking the processing function `callback(newValue, oldValue)` when a change occurs:

- The `newValue` parameter corresponds to the new value of the observed reactive variable.
- The `oldValue` parameter corresponds to the old value of the observed reactive variable.

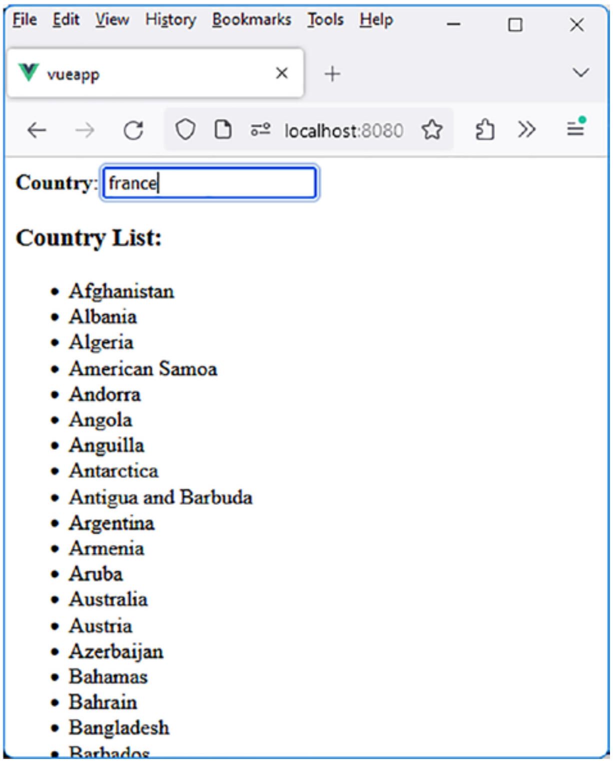
The `watch()` method is typically employed to monitor changes on a reactive variable, but it will be demonstrated that it is also possible to observe nonreactive variables (such as `props.name`) using the `watch()` method.

Let's write the previous code block in a `watch()` function for `props.name` using the `watch()` method:

MyCountries component (src/components/MyCountries.vue file)

```
<script setup>

import { defineProps, ref, onMounted, watch } from "vue";
const props = defineProps(["name"]);

const names = ref([]);    // Countries names displayed in
                          the list
let countries= [];        // All country names (retrieved only
                          once at startup)

onMounted(() => {
  var url = "https://restcountries.com/v3.1/all";
  fetch(url)
  .then((res) => res.text())
  .then((data) => {
    countries = JSON.parse(data).map(function(elem) {
      return elem.name.common;
    });
    // In ascending alphabetical order
    countries = countries.sort((n1, n2) => {
      if (n1 > n2) return 1;
      if (n1 < n2) return -1;
      return 0;
    });
    names.value = countries;

  })
  .catch((err) => names.value = [err.toString()]);
});

watch(props.name, (newName) => {
  let countriesFiltered = countries.filter((n) => {
    const reg = new RegExp("^" + newName, "i");
    if (n.match(reg)) return true;
    else return false;
  });
  names.value = countriesFiltered;
});

</script>

<template>

<h3>Country List:</h3>

<div v-show="!countries.length">Fetching countries in
progress...</div>
<ul>
<li v-for="n in names" :key="n" >{{n}}</li>
</ul>

</template>
```

Indeed, it's crucial to test the functionality. Let's run the program and enter characters in the input field to verify its operation.



Country: france

Country List:

- Afghanistan
- Albania
- Algeria
- American Samoa
- Andorra
- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados

Figure 4-8. *The list of countries does not update*

It appears that the filter is not working. The explanation is as follows.

When we write `watch(props.name, callback)`, we are observing the value of the variable `props.name` at the moment the `watch()` function is written, that is, during initialization (or setup). However, as the variable `props.name` is not reactive, it would be necessary to update the value of `props.name` based on what is entered in the input field.

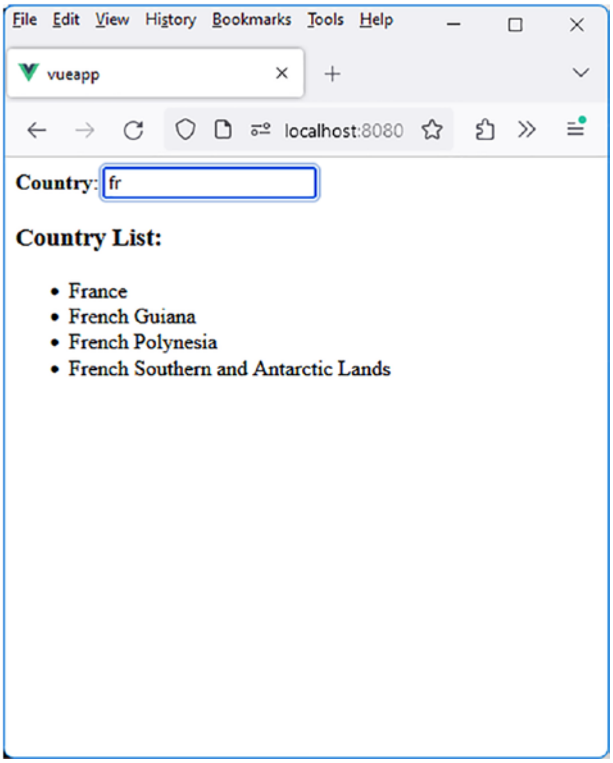
To achieve this, we need to create a “getter” function that retrieves the current value of `props.name`. This can be simply written as `()=>props.name`.

Therefore, we write the following:

MyCountries component (src/components/MyCountries.vue file)

```
<script setup>

import { defineProps, ref, onMounted, watch } from "vue";
const props = defineProps(["name"]);

const names = ref([]);   // Countries names displayed in
                         the list
let countries= [];       // All country names (retrieved only
                         once at startup)

onMounted(() => {
  var url = "https://restcountries.com/v3.1/all";
  fetch(url)
  .then((res) => res.text())
  .then((data) => {
    countries = JSON.parse(data).map(function(elem) {
      return elem.name.common;
    });
    // In ascending alphabetical order
    countries = countries.sort((n1, n2) => {
      if (n1 > n2) return 1;
      if (n1 < n2) return -1;
      return 0;
    });
    names.value = countries;

  })
  .catch((err) => names.value = [err.toString()]);
});

watch(()=>props.name, (newName) => {
  let countriesFiltered = countries.filter((n) => {
    const reg = new RegExp("^" + newName, "i");
    if (n.match(reg)) return true;
    else return false;
  });
  names.value = countriesFiltered;
});

</script>

<template>

<h3>Country List:</h3>

<div v-show="!countries.length">Fetching countries in
progress...</div>
<ul>
<li v-for="n in names" :key="n" >{{n}}</li>
</ul>

</template>
```

Indeed, using the notation `()=>props.name` returns the current value of `props.name`, allowing it to be observed and compared to the previous value. Let's verify that this works:



Country: fr

Country List:

- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands

Figure 4-9. *Functional country filter*

We have successfully filtered the list based on the characters entered by the user in the input field. The `watch()` method helped us achieve this. Vue.js also offers another filtering method, which is the `watchEffect()` method. Let's see how to use it for list filtering.

Using the watchEffect( ) Method

The `watchEffect(callback)` method is similar to the previously discussed `watch(name, callback)` method, with some differences.

Instead of specifying the name of the observed variable in the parameters, the observed variables (*reactive or not*) will be those used in the callback function. Vue.js executes the callback function at each component initialization to determine the variables that will be observed.

If variables are used in a part of the callback function that is not executed at startup, these variables will not be observed and will not trigger future executions of the callback function.

The `watchEffect()` method can be summarized in three points:

1. **Automatic Dependency Detection**: Unlike `watch()`, which requires explicitly specifying the variables to observe, `watchEffect(callback)` automatically detects variables accessed in the callback function.

2. **Initial Execution**: `watchEffect(callback)` executes the callback function once during component initialization to identify the variables to observe.

3. **Unexecuted Parts**: If variables are present in code parts that are not executed during initialization (e.g., in an unexecuted conditional branch), these variables will not be recorded as dependencies and will not trigger future executions of the callback function.

Let's use the `watchEffect()` method instead of the previous `watch()` method. We want to observe the `props.name` variable in `watchEffect()` to modify the list based on the entered country name. For this, this variable must be used during the first execution of the callback function, which occurs at the initialization of the `MyCountries` component.

If we replace the direct call to the `watch()` method with that of the `watchEffect()` method, it is written as follows:

Using the watchEffect() method (file src/components/MyCountries.vue)

```
<script setup>

import { defineProps, ref, onMounted, watchEffect } from "vue";
const props = defineProps(["name"]);

const names = ref([]);   // Countries names displayed in
                         the list
let countries= [];       // All country names (retrieved only
                         once at startup)

onMounted(() => {
  var url = "https://restcountries.com/v3.1/all";
  fetch(url)
  .then((res) => res.text())
  .then((data) => {
    countries = JSON.parse(data).map(function(elem) {
      return elem.name.common;
    });
    // In ascending alphabetical order
    countries = countries.sort((n1, n2) => {
      if (n1 > n2) return 1;
      if (n1 < n2) return -1;
      return 0;
    });
    names.value = countries;

  })
  .catch((err) => names.value = [err.toString()]);
});

watchEffect(() => {
  let countriesFiltered = countries.filter((n) => {
    const reg = new RegExp("^" + props.name, "i");
    if (n.match(reg)) return true;
    else return false;
  });
  names.value = countriesFiltered;
});

</script>

<template>

<h3>Country List:</h3>

<div v-show="!countries.length">Fetching countries in
progress...</div>
<ul>
<li v-for="n in names" :key="n" >{{n}}</li>
</ul>

</template>
```

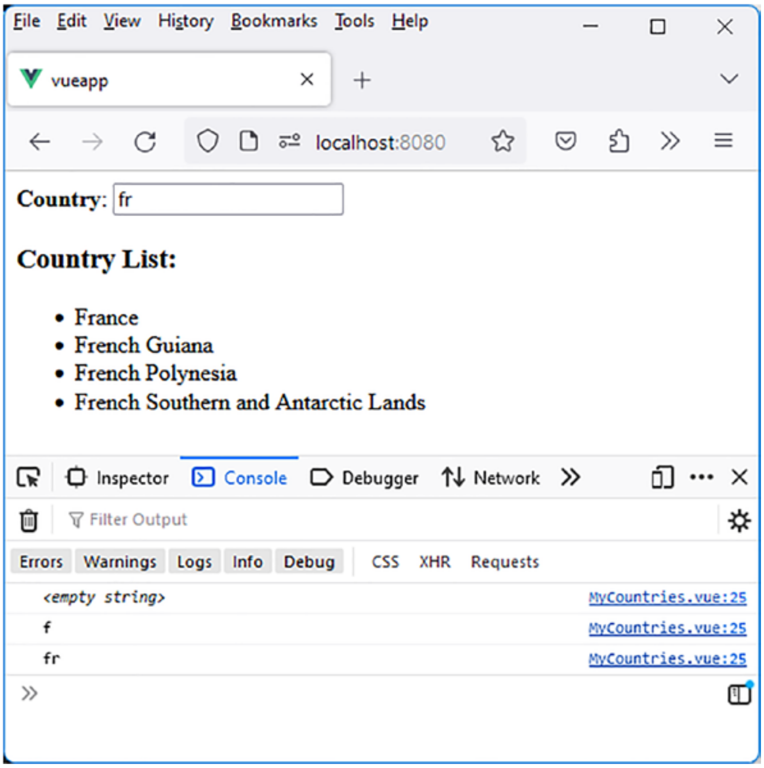
One can verify that this does not work, and it is expected, as for the variable `props.name` to be within a code block executed during the component initialization, the `filter()` method would need to be executed, which is not the case here because the `countries` array is initially empty.

A workaround involves the inclusion of the statement `console.log(props.name)`, effectively allowing the utilization of the variable `props.name` for subsequent observation. The modification to the `watchEffect()` method is as follows:

Use console.log(props.name) within watchEffect()

```
watchEffect(() => {
  console.log(props.name); // Do not delete: allows the
                             observation of props.name
  let countriesFiltered = countries.filter((n) => {
    const reg = new RegExp("^" + props.name, "i");
    if (n.match(reg)) return true;
    else return false;
  });
  names.value = countriesFiltered;
});
```

Let's verify that the variable `props.name` is now being observed:


File Edit View History Bookmarks Tools Help
vueapp
localhost:8080
Inspector
Console
Debugger
Network
Filter Output
Errors Warnings Logs Info Debug CSS XHR Requests

Country: fr

Country List:

- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands

```
<empty string>                                   MyCountries.vue:25
f                                                MyCountries.vue:25
fr                                               MyCountries.vue:25
```

Figure 4-10. *The variable props.name is observed by watchEffect()*

To provide comprehensive explanations, another way to filter the list can also be offered, using the `provide()` and `inject()` methods, which enable data sharing between multiple components. Let's explore how to use them here.

Using the provide( ) and inject( ) Methods

An alternative program structure is possible by employing the `provide()` and `inject()` methods.

Instead of passing the reactive variable `name` as an attribute to `MyCountries`, it is transmitted from the `App` component through the `provide()` method and retrieved in the `MyCountries` component using the `inject()` method.

The `App` component becomes the following:

App component (file src/App.vue)

```
<script setup>

import MyCountries from './components/MyCountries.vue'

import { ref, provide } from "vue";

const name = ref("");
provide("name", name);

</script>

<template>

<b>Country</b>: <input type="text" v-model="name" />
<br>
<MyCountries />

</template>
```

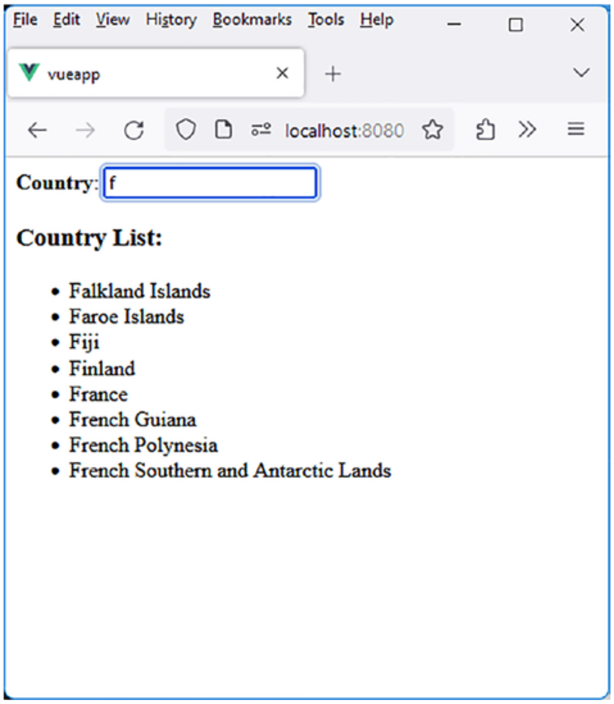
The `MyCountries` component is now used without the `name` attribute. However, this reactive variable is transmitted to child components using the `provide("name", name)` method and will be retrieved in the `MyCountries` component through the `inject("name")` method.

The `MyCountries` component is modified as follows:

MyCountries component (file src/components/MyCountries.vue)

```
<script setup>

import { ref, onMounted, watch, inject } from "vue";

const names = ref([]);   // Countries names displayed in
                         the list
let countries= [];       // All country names (retrieved only
                         once at startup)

const name = inject("name");   // The reactive variable name is
retrieved

onMounted(() => {
  var url = "https://restcountries.com/v3.1/all";
  fetch(url)
  .then((res) => res.text())
  .then((data) => {
    countries = JSON.parse(data).map(function(elem) {
      return elem.name.common;
    });
    // In ascending alphabetical order
    countries = countries.sort((n1, n2) => {
      if (n1 > n2) return 1;
      if (n1 < n2) return -1;
      return 0;
    });
    names.value = countries;

  })
  .catch((err) => names.value = [err.toString()]);
});

watch(name, () => {
  let countriesFiltered = countries.filter((n) => {
    const reg = new RegExp("^" + name.value, "i");
    if (n.match(reg)) return true;
    else return false;
  });
  names.value = countriesFiltered;
});

</script>

<template>

<h3>Country List:</h3>

<div v-show="!countries.length">Fetching countries in
progress...</div>
<ul>
<li v-for="n in names" :key="n" >{{n}}</li>
</ul>

</template>
```

The reactive variable `name` can be directly observed using the `watch(name, callback)` method, as it is indeed the reactive variable `name` being observed here, and not an attribute transmitted via `props.name` as before. Let's verify that this works:



Country: f

Country List:

- Falkland Islands
- Faroe Islands
- Fiji
- Finland
- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands

Figure 4-11. *Usage of provide() and inject()*

Giving Focus to the Input Field

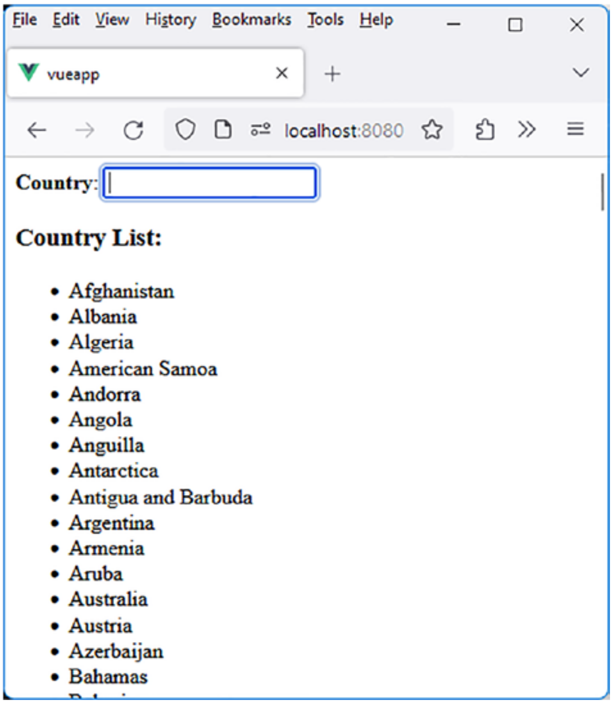
The program can be further enhanced by giving focus to the input field as soon as the page is displayed. The `focus()` method provided by the DOM API is employed for this purpose.

It is necessary to modify the `App` component that contains the input field to which focus should be given. The `onMounted()` method is utilized to access the DOM element corresponding to the input field.

Giving focus to the input field (file src/App.vue)

```
<script setup>

import MyCountries from './components/MyCountries.vue'

import { ref, provide, onMounted } from "vue";

const name = ref("");
provide("name", name);

onMounted(()=>document.querySelector("input[type=text]").
focus());

</script>

<template>

<b>Country</b>: <input type="text" v-model="name" />
<br>
<MyCountries />

</template>
```

The input field is accessed through the DOM API, for example, by using `document.querySelector(selector)`. All that remains is to use the `focus()` method of the DOM API on this element to give it focus.



Country:

Country List:

- Afghanistan
- Albania
- Algeria
- American Samoa
- Andorra
- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas

Figure 4-12. *The input field gains focus directly*

In the next chapter, we will explore the creation of a new directive that directly gives focus to the input field, providing a more optimal approach.

Conclusion

You now have a comprehensive understanding of how to perform HTTP requests in a Vue.js application. You have learned to retrieve data from a remote server and seamlessly integrate it into your application. The example of the country list has allowed you to implement these concepts, providing you with a practical and concrete experience.

While we have explored leveraging data from an external source, the upcoming chapter will take you further into customizing and optimizing Vue.js applications. We will delve into creating new directives and composables, powerful tools that enable you to build advanced features and efficiently reuse your application logic. These techniques will make your code both cleaner and more functional.