Vue 3 Firestore example: Build a CRUD **Application**

🚔 Last modified: September 6, 2021 (https://www.bezkoder.com/vue-3-firestore/) 🙎 bezkoder (https://www.bezkoder.com/author/bezkoder/) **Firebase** (https://www.bezkoder.com/category/firebase/), Vue.js (https://www.bezkoder.com/category/vue/)

In this tutorial, I will show you step by step to build a Vue 3 Firestore CRUD App example with Firebase Cloud Firestore Database.

Related Posts:

- Vue 3 Firebase example: Build a CRUD App (Realtime Database) (https://www.bezkoder.com/vue-3-firebase/)
- Vue 3 CRUD example with Axios & Vue Router (https://www.bezkoder.com/vue-3-crud/)
- Vue 3 Authentication with JWT, Vuex, Axios and Vue Router (https://bezkoder.com/vue-3-authentication-jwt/)

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Vue 3 Firestore example Overview

We're gonna build an Vue 3 Firestore CRUD App using firebase (https://www.npmjs.com/package/firebase)

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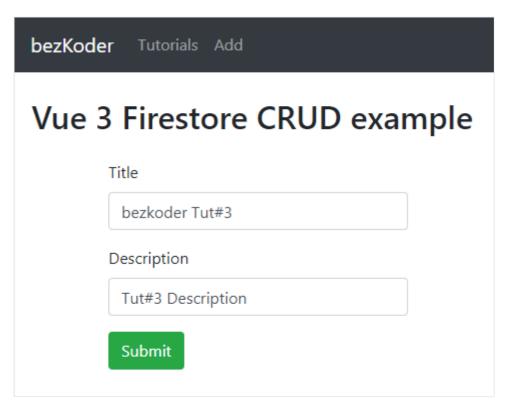
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Each Tutorial has key, title, description, published status.

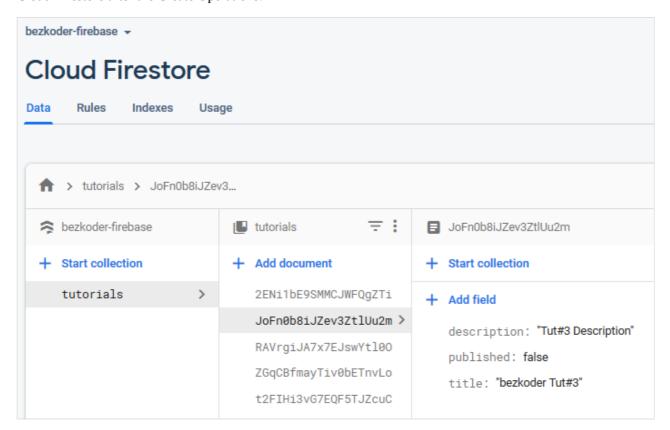
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We can create, retrieve, update, delete Tutorials (CRUD operations) from Firebase Firestore

Here are the screenshots:

- Create a new Tutorial:



Cloud Firestore after the Create Operations:

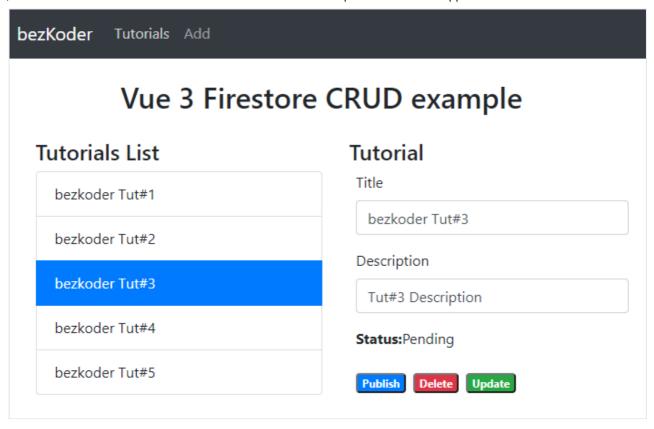


– Retrieve all Tutorials, the details will show when clicking on any Tutorial:

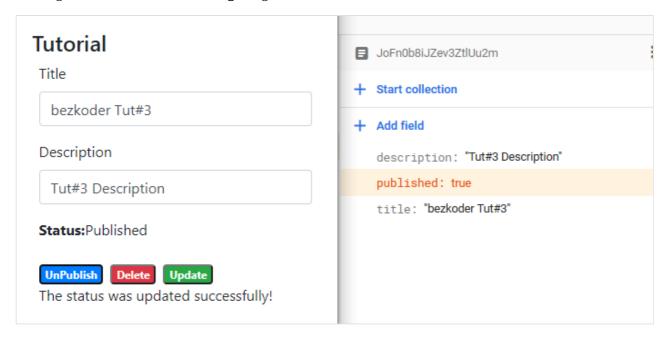
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https://www.bezkoder.com/vue-3-firestore/



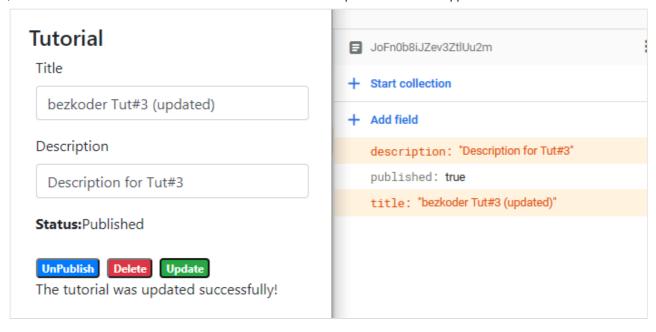
- Change status to **Published/Pending** using **Publish/UnPublish** button:



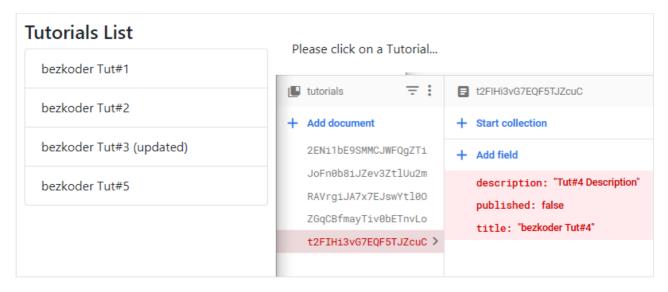
– Update the Tutorial details with **Update** button:

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– Delete the Tutorial using **Delete** button:



CRUD Operations using Firestore CollectionReference

We're gonna use instance of firebase.firestore.CollectionReference

(https://firebase.google.com/docs/reference/js/firebase.firestore.CollectionReference) to read/write data from the Firestore.

```
var tutorialsRef = firebase.firestore().collection("/tutorials");
```

– Read collection once using get():

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```
tutorialsRef.get().then(function(snapshot) {
    vat tutorials = [];
    snapshot.forEach(function(childSnapshot) {
      var id = childSnapshot.id;
      var data = childSnapshot.val();
      // ...
      tutorials.push({ id: id, title: data.title, description: data.description});
    });
  });
- Read collection with listening to the data changes using onSnapshot():
  tutorialsRef.onSnapshot(function(snapshot) {
    snapshot.docChanges().forEach(function(change) {
      if (change.type === "added") {
        console.log("New tutorial: ", change.doc.data());
      }
      if (change.type === "modified") {
        console.log("Modified tutorial: ", change.doc.data());
      }
      if (change.type === "removed") {
        console.log("Removed tutorial: ", change.doc.data());
      }
    });
  });
– Listening for all value change events on a collection reference
  tutorialsRef.onSnapshot(function(snapshot) {
    snapshot.forEach(function(childSnapshot) {
      var id = childSnapshot.id;
      var childData = childSnapshot.val();
      // ...
    });
  });
```

– Detach the listener to stop using bandwidth to receive updates:

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```
var unsubscribe = tutorialsRef.onSnapshot(function(snapshot) {
  });
  // Stop listening to changes
  unsubscribe();
- Create a new document in collection using add():
  tutorialsRef.add({
    title: "bezkoder Tut#1",
    description: "Helpful tutorial"
  })
  .then(function(docRef) {
      console.log("Tutorial created with ID: ", docRef.id);
  })
  .catch(function(error) {
      console.error("Error adding Tutorial: ", error);
  });;
– Update document by id in collection:
+ destructive update using Set(): delete everything currently in place, then save the new value
  tutorialsRef.doc(id).set({
    title: 'zkoder Tut#1',
    description: 'Tut#1 Description'
  });
+ non-destructive update using update(): only updates the specified values
  tutorialsRef.doc(id).update({
    title: 'zkoder new Tut#1'
  });
– Delete a document by id in collection:
  tutorialsRef.doc(id).delete();
– Delete entire collection: Deleting Firestore collections from a Web client is not recommended.
```

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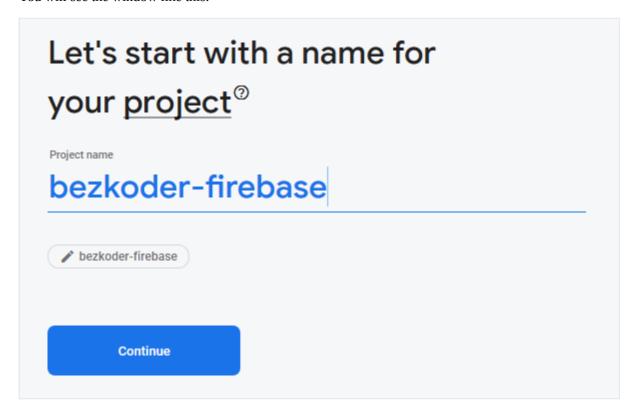
You can find the solution here (https://firebase.google.com/docs/firestore/solutions/delete-collections).

- Vue Router 4
- Firebase 8
- · Bootstrap 4

Setup the Firebase Project

Go to Firebase Console (https://console.firebase.google.com/), login with your Google Account, then click on Add Project.

You will see the window like this:



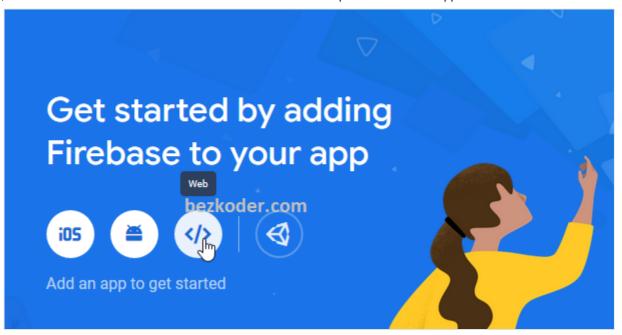
Enter Project name, set Project Id and click on Continue.

Turn off *Enable Google Analytics for this project*, then click **Create Project**.

Now, browser turns into following view:

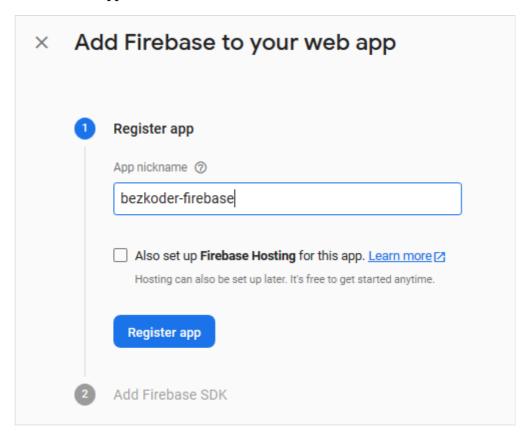
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If you don't see it, just choose Project **Overview**.

Click on **Web App**, a window will be shown:



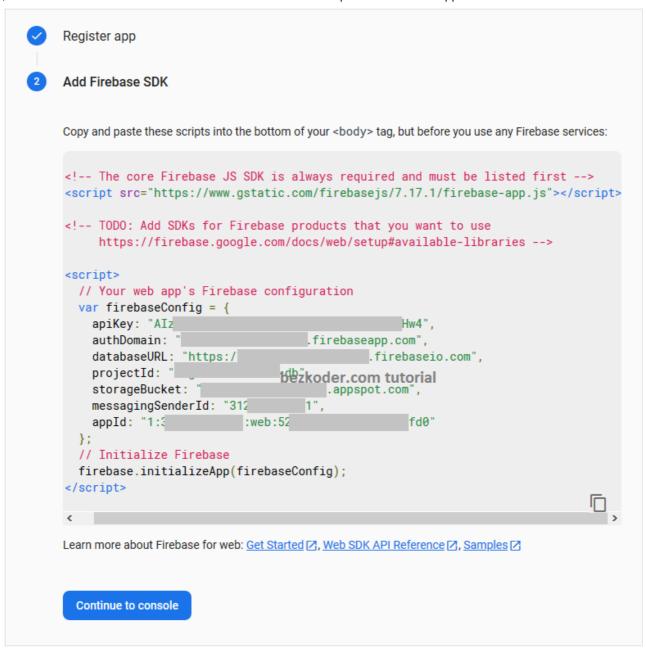
Set the nickname and choose **Register App** for next step.

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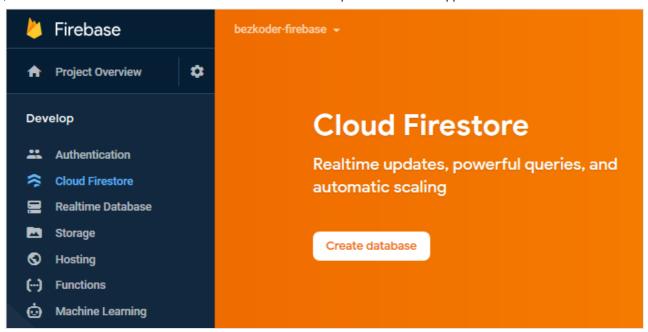


Copy the script for later use.

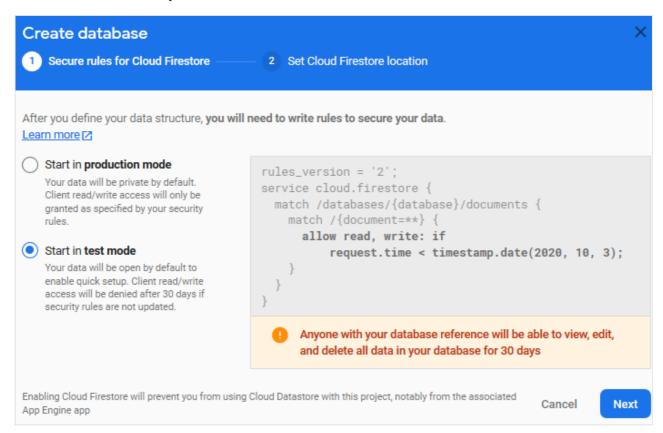
Choose **Cloud Firestore** on the left (list of Firebase features) -> **Create Database**.

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In this tutorial, we don't implement Authentication, so let's choose **test mode**:

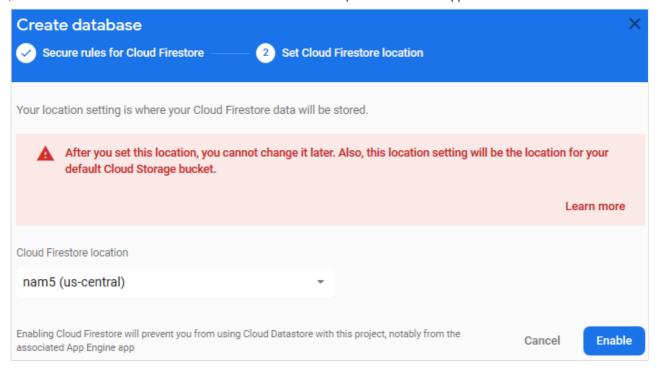


Or if you come from another situation, just open Tab **Rules**, then change allow read, write value to if true.

Finally, we need to set Cloud Firestore Location:

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Setup Vue 3 Firebase Firestore Project

Open cmd at the folder you want to save Project folder, run command:

vue create vue-3-firestore

You will see some options, choose **Default ([Vue 3] babel, eslint)**.

After the process is done. We create new folders and files like the following tree:

■ public	
index.html	
■ src	
■ components	
AddTutorial.vue	
Tutorial.vue	
TutorialsList.vue	
services	
TutorialDataService.js	
App.vue	
firebase.js	
main.js	

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Let me explain it briefly.

- package.json contains 3 main modules: vue, vue-router, firebase.
- firebase.js configures information to connect with Firebase Project and export Firebase Firestore (https://firebase.google.com/docs/reference/js/firebase.firestore.Firestore) service.
- TutorialDataService exports TutorialDataService that uses firebase 's Firestore CollectionReference to interact with Firestore collection.
- There are 3 components that uses TutorialDataService:
 - AddTutorial for creating new item
 - TutorialsList contains list of items, parent of Tutorial
 - Tutorial shows item details
- **router.js** defines routes for components.
- App. Vue contains Router View and navigation bar.

Add Bootstrap to Vue 3 Firestore example

Run command: npm install bootstrap@4.6.0 jquery popper.js.

Open src/main.js and import Bootstrap as following-

```
import { createApp } from 'vue'
import App from './App.vue'
import 'bootstrap'
import 'bootstrap/dist/css/bootstrap.min.css'
...
```

Add Vue Router to Vue 3 Firestore example

- Run the command: npm install vue-router@4.
- In **src** folder, open *router.js* and define Router as following code:

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```
import { createWebHistory, createRouter } from "vue-router";
const routes = [
   path: "/",
    alias: "/tutorials",
   name: "tutorials",
   component: () => import("./components/TutorialsList")
  },
  {
   path: "/add",
   name: "add",
   component: () => import("./components/AddTutorial")
 }
];
const router = createRouter({
 history: createWebHistory(),
  routes,
});
export default router;
```

We create the routes as an array, each route has:

- path: the URL path where this route can be found.
- name : optional name to use when we link to this route.
- component: component to load when this route is called.

We also use createWebHistory to switch from using hash to history mode inside the browser, using the HTML5 history API.

− Open **src**/*main.js* and import the router in our application:

```
...
import router from './router'
createApp(App).use(router).mount('#app')
```

Add Navbar and Router View to Vue 3 Firestore example

Let's open **src**/*App.vue*, this **App** component is the root container for our application, it will contain a navbar .

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```
<template>
 <div id="app">
   <nav class="navbar navbar-expand navbar-dark bg-dark">
     <router-link to="/" class="navbar-brand">bezKoder</router-link>
     <div class="navbar-nav mr-auto">
       class="nav-item">
         <router-link to="/tutorials" class="nav-link">Tutorials</router-link>
       class="nav-item">
         <router-link to="/add" class="nav-link">Add</router-link>
       </div>
   </nav>
   <div class="container mt-3">
     <h2>Vue 3 Firebase CRUD example</h2>
     <router-view />
   </div>
 </div>
</template>
<script>
export default {
 name: "app"
};
</script>
<style scoped>
.container h2 {
 text-align: center;
 margin: 25px auto;
</style>
```

Integrate Firebase into Vue 3 App

First run the command: npm install firebase@8.10.0.

Open **src**/*firebase*.*js*, import firebase library and add configuration that we have saved when Popup window was shown:

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```
import firebase from "firebase/app";
 import "firebase/firestore";
 let config = {
   apiKey: "xxx",
   authDomain: "bezkoder-firebase.firebaseapp.com",
   databaseURL: "https://bezkoder-firebase.firebaseio.com",
   projectId: "bezkoder-firebase",
   storageBucket: "bezkoder-firebase.appspot.com",
   messagingSenderId: "xxx",
   appId: "xxx",
 };
 firebase.initializeApp(config);
 export default firebase.firestore();
Don't forget to export firebase.firestore.Firestore
(https://firebase.google.com/docs/reference/js/firebase.firestore.Firestore
) service with firebase.firestore().
```

Create Data Service

This service will use Firestore service exported above to interact with Firebase Cloud Firestore. It contains necessary functions for CRUD operations.

services/TutorialDataService.js

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```
import firebase from "../firebase";
const db = firebase.collection("/tutorials");
class TutorialDataService {
  getAll() {
    return db;
  }
  create(tutorial) {
    return db.add(tutorial);
  }
  update(id, value) {
    return db.doc(id).update(value);
  }
  delete(id) {
    return db.doc(id).delete();
  }
}
export default new TutorialDataService();
```

Component for creating Documents

This component has a Form to submit new Tutorial with 3 fields: title, description & published (false by default). It calls TutorialDataService.create() method.

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```
<template>
</template>
<script>
import TutorialDataService from "../services/TutorialDataService";
export default {
 name: "add-tutorial",
 data() {
    return {
      tutorial: {
        title: "",
        description: "",
        published: false
      },
      submitted: false
   };
  },
 methods: {
    saveTutorial() {
      var data = {
        title: this.tutorial.title,
        description: this.tutorial.description,
        published: false
      };
      TutorialDataService.create(data)
        .then(() => {
          console.log("Created new item successfully!");
          this.submitted = true;
        })
        .catch(e => {
          console.log(e);
        });
   },
   newTutorial() {
      this.submitted = false;
      this.tutorial = {
        title: "",
        description: "",
        published: false
      };
    }
```

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There are 2 main variables return from data():

- tutorial for tutorial data
- submitted status

We also have a function to get value of the form (state) and call TutorialDataService.create() method.

For the template, we check the **submitted** state, if it is true, we show **Add** button for creating new Tutorial again. Otherwise, a Form will display.

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```
<template>
  <div class="submit-form">
    <div v-if="!submitted">
      <div class="form-group">
        <label for="title">Title</label>
        <input
          type="text"
          class="form-control"
          id="title"
          required
          v-model="tutorial.title"
          name="title"
        />
      </div>
      <div class="form-group">
        <label for="description">Description</label>
        <input
          class="form-control"
          id="description"
          required
          v-model="tutorial.description"
          name="description"
        />
      </div>
      <button @click="saveTutorial" class="btn btn-success">Submit</button>
    </div>
    <div v-else>
      <h4>You submitted successfully!</h4>
      <button class="btn btn-success" @click="newTutorial">Add</button>
    </div>
  </div>
</template>
<script>
import TutorialDataService from "../services/TutorialDataService";
export default {
  name: "add-tutorial",
  . . .
};
</script>
                                                                                                 X
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  max-widሚhiva@ŷp&;Policy (https://bezkoder.com/privacy-policy/)
                                                                          Accept
 margin: auto;
```

Component for List of Documents

This component has:

 a <i>tutorials</i> array displayed as a list on the left. a selected Tutorial which is shown on the right.				

So we will have following state:

- tutorials
- currentTutorial and currentIndex

We also need to use TutorialDataService 's getAll() method with .orderBy("title", We use cookies to improve your experience with the site. To find out more, you can read the full "asc") for sort the list by title field in ascending order.

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And add Tutorial into this component as child component.

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components/TutorialsList.Vue

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```
<template>
    </template>
    <script>
    import TutorialDataService from "../services/TutorialDataService";
    import TutorialDetails from "./Tutorial";
    export default {
      name: "tutorials-list",
      components: { TutorialDetails },
      data() {
        return {
          tutorials: [],
          currentTutorial: null,
          currentIndex: -1,
          unsubscribe: null
        };
      },
      methods: {
        onDataChange(items) {
          let tutorials = [];
          items.forEach((item) => {
            let id = item.id;
            let data = item.data();
            tutorials.push({
              id: id,
              title: data.title,
              description: data.description,
              published: data.published,
            });
          });
          this.tutorials = _tutorials;
        },
        refreshList() {
          this.currentTutorial = null;
          this.currentIndex = -1;
        },
        setActiveTutorial(tutorial, index) {
          this.currentTutorial = tutorial;
          this.currentIndex = index;
                                                                                                   X
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      mounted Privacy & Policy (https://bezkoder.com/privacy-policy/)
                                                                            Accept
        this.unsubscribe = TutorialDataService.getAll().orderBy("title", "asc").onSnapshot(th
```

https://www.bezkoder.com/vue-3-firestore/

```
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```

```
},
beforeDestroy() {
   this.unsubscribe();
}
};
</script>
```

In the code above, we add a listener for data value changes in <code>mounted()</code> and detach the listener in <code>beforeDestroy()</code>.

Inside listener function, we get the id and other fields of each item. This id is unique and important for update operation.

We also have refreshList() function for every time delete operation is done.

Let's continue to implement the template:

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```
<template>
 <div class="list row">
   <div class="col-md-6">
     <h4>Tutorials List</h4>
     class="list-group-item"
         :class="{ active: index == currentIndex }"
         v-for="(tutorial, index) in tutorials"
         :key="index"
         @click="setActiveTutorial(tutorial, index)"
         {{ tutorial.title }}
       </div>
   <div class="col-md-6">
     <div v-if="currentTutorial">
       <tutorial-details
         :tutorial="currentTutorial"
         @refreshList="refreshList"
       />
     </div>
     <div v-else>
       <br />
       Please click on a Tutorial...
     </div>
   </div>
 </div>
</template>
<script>export default {
 name: "tutorials-list",
 components: { TutorialDetails },
};
</script>
<style>
.list {
 text-align: left;
 max-width: 750px;
 margin: auto;
</style>
```

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Accept current active Tutorial, which data is passed to Tutorial component.

Component for Document details

This component is the child of TutorialsList component. It bind tutorial data and invoke refreshList of the parent.

For getting update, delete the Tutorial, we're gonna use two TutorialDataService methods:

- update()
- delete()

 ${\bf components}/{\it Tutorial.vue}$

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```
<template>
    </template>
    <script>
    import TutorialDataService from "../services/TutorialDataService";
    export default {
      name: "tutorial",
      props: ["tutorial"],
      data() {
        return {
          currentTutorial: null,
          message: "",
        };
      },
      watch: {
        tutorial: function(tutorial) {
           this.currentTutorial = { ...tutorial };
          this.message = "";
        },
      },
      methods: {
        updatePublished(status) {
           TutorialDataService.update(this.currentTutorial.id, {
             published: status,
          })
             .then(() => {
               this.currentTutorial.published = status;
               this.message = "The status was updated successfully!";
             })
             .catch((e) => {
               console.log(e);
             });
        },
        updateTutorial() {
          const data = {
             title: this.currentTutorial.title,
             description: this.currentTutorial.description,
          };
           TutorialDataService.update(this.currentTutorial.id, data)
             .then(() => {
               this.message = "The tutorial was updated successfully!";
                                                                                                     X
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                                                                              Accept
             });
```

```
},
   deleteTutorial() {
      TutorialDataService.delete(this.currentTutorial.id)
        .then(() => {
          this.$emit("refreshList");
        })
        .catch((e) => {
          console.log(e);
        });
   },
 },
 mounted() {
   this.message = "";
   this.currentTutorial = { ...this.tutorial }
 },
};
</script>
```

And this is the code for template:

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```
<template>
  <div v-if="currentTutorial" class="edit-form">
    <h4>Tutorial</h4>
    <form>
      <div class="form-group">
        <label for="title">Title</label>
        <input
          type="text"
          class="form-control"
          id="title"
          v-model="currentTutorial.title"
        />
      </div>
      <div class="form-group">
        <label for="description">Description</label>
        <input
          type="text"
          class="form-control"
          id="description"
          v-model="currentTutorial.description"
        />
      </div>
      <div class="form-group">
        <label><strong>Status:</strong></label>
        {{ currentTutorial.published ? "Published" : "Pending" }}
      </div>
    </form>
    <button
      class="badge badge-primary mr-2"
      v-if="currentTutorial.published"
      @click="updatePublished(false)"
      UnPublish
    </button>
    <button
      v-else
      class="badge badge-primary mr-2"
      @click="updatePublished(true)"
      Publish
    </button>
```

</but/Privacy & Policy (https://bezkoder.com/privacy-policy/)

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```
<button type="submit" class="badge badge-success" @click="updateTutorial">
     Update
   </button>
   {{ message }}
 </div>
 <div v-else>
   <br />
   Please click on a Tutorial...
 </div>
</template>
<script>export default {
 name: "tutorial",
 props: ["tutorial"],
};
</script>
<style>
.edit-form {
 max-width: 300px;
 margin: auto;
</style>
```

Run & Check

You can run this App with command: npm run serve.

```
DONE Compiled successfully!

App running at:
- Local: http://localhost:8080/
- Network: http://192.168.1.7:8080/

Note that the development build is not optimized.
To create a production build, run npm run build.
```

Open browser with url: http://localhost:8080/ and check the result.

Conclusion

```
Today we've built Vue Firestore example with a CRUD Application successfully using firebase library.
```

Now we can display, modify, delete documents and collection at ease. We use cookies to improve your experience with the site. To find out more, you can read the full

If you want to use Realtime Database instead:

Privacy & Policy (https://bezkoder.com/privacy-policy/)

Vue 3 Firebase example: Build a CRUD App (Realtime Database) (https://www.bezkoder.com/vue-3-firebase/)

You can also find how to create Vue HTTP Client for working with Restful API in:

Vue 3 CRUD example with Axios & Vue Router (https://www.bezkoder.com/vue-3-crud/)

Happy learning, see you again!

Further Reading

- Vue Router guide (https://router.vuejs.org/)
- firebase.firestore.Firestore (https://firebase.google.com/docs/reference/js/firebase.firestore.Firestore)
- firebase.firestore.CollectionReference (https://firebase.google.com/docs/reference/js/firebase.firestore.CollectionReference)
- Firestore Get Started (https://firebase.google.com/docs/firestore/quickstart)

Fullstack CRUD App:

- Vue.js + Node.js + Express + MySQL (https://bezkoder.com/vue-js-node-js-express-mysql-crud-example/)
- Vue.js + Node.js + Express + PostgreSQL (https://bezkoder.com/vue-node-express-postgresql/)
- Vue.js + Node.js + Express + MongoDB (https://bezkoder.com/vue-node-express-mongodb-mevn-crud/)
- Vue.js + Spring Boot + MySQL (https://bezkoder.com/spring-boot-vue-js-crud-example/)
- Vue.js + Spring Boot + PostgreSQL example (https://bezkoder.com/spring-boot-vue-js-postgresql/)
- Vue.js + Spring Boot + MongoDB (https://bezkoder.com/spring-boot-vue-mongodb/)
- Vue.js + Django Rest Framework (https://bezkoder.com/django-vue-js-rest-framework/)

Source Code

You can find the complete source code for this tutorial on Github (https://github.com/bezkoder/vue-3-firestore).

```
crud (https://www.bezkoder.com/tag/crud/) firebase (https://www.bezkoder.com/tag/firebase/) firestore (https://www.bezkoder.com/tag/firestore/) serverless (https://www.bezkoder.com/tag/serverless/) vue (https://www.bezkoder.com/tag/vue/) vue 3 (https://www.bezkoder.com/tag/vue-3/) vue router (https://www.bezkoder.com/tag/vue-router/)
```

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✓ Spring Boot + SQL Server: CRUD Operations example (https://www.bezkoder.com/spring-boot-sql-server/)

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TOOLS

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