Vue Typescript CRUD Application **Vue Router - Axios**

Vue Typescript example: Build a CRUD Application

苗 Last modified: December 18, 2020 (https://bezkoder.com/vue-typescript-crud/) 🛮 🚨 bezkoder (https://bezkoder.com/author/bezkoder/) > Vue.js (https://bezkoder.com/category/vue/)

In this tutorial, I will show you how to build a Vue.js Typescript CRUD Application to consume REST APIs, display and modify data using Vue, Vue Router, Axios & Bootstrap.

More Practice:

- Vue/Vuex Typescript: JWT Authentication example (https://bezkoder.com/vuextypescript-jwt-auth/)
- Vue File Upload example using Axios (https://bezkoder.com/vue-axios-file-upload/)

Fullstack:

- Vue.js + Node.js + Express + MySQL example (https://bezkoder.com/vue-js-nodejs-express-mysql-crud-example/)

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Privacy & Policy (https://bezkoder.com/privacy-policy/)
- Vue.js + Node.js + Express + MongoDB example (https://bezkoder.com/vue-node-

express-mongodb-mevn-crud/)

- Vue.js + Spring Boot + MySQL/PostgreSQL example (https://bezkoder.com/spring-boot-vue-js-crud-example/)
- Vue.js + Spring Boot + MongoDB example (https://bezkoder.com/spring-boot-vuemongodb/)
- Vue.js + Django example (https://bezkoder.com/django-vue-js-rest-framework/)

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Overview of Vue Typescript CRUD Application

We will build a Vue.js front-end Tutorial Application in that:

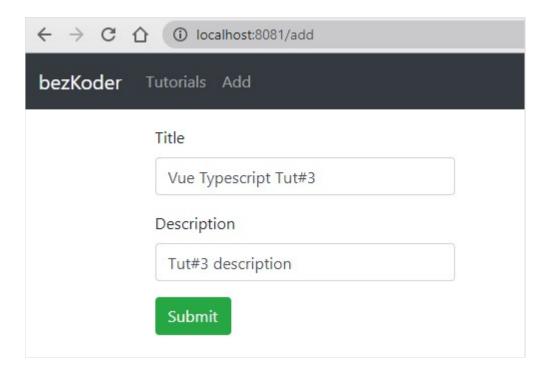
- Each Tutorial has id, title, description, published status.
- We can create, retrieve, update, delete Tutorials.
- There is a Search bar for finding Tutorials by title.

Here are screenshots of our Vue Typescript CRUD Application.

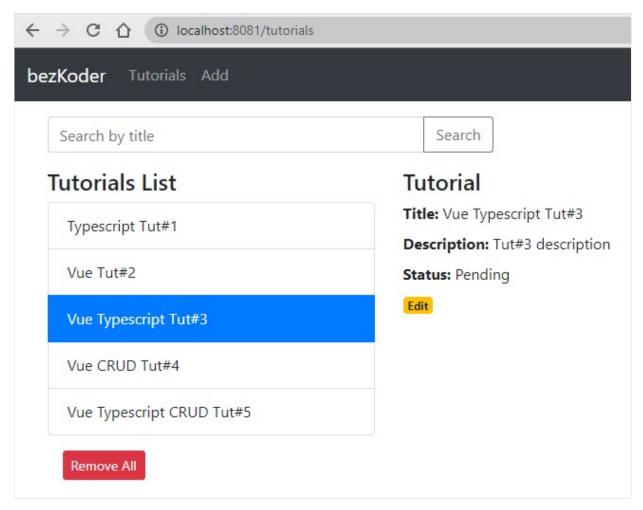
- Create an object:

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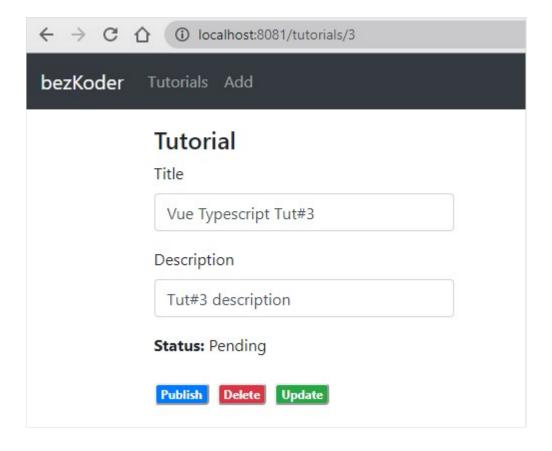
- Retrieve all objects:



- Click on **Edit** button to update an object:

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On this Page, you can:

- change status to **Published** using **Publish** button
- delete the Tutorial using **Delete** button
- update the Tutorial details with **Update** button

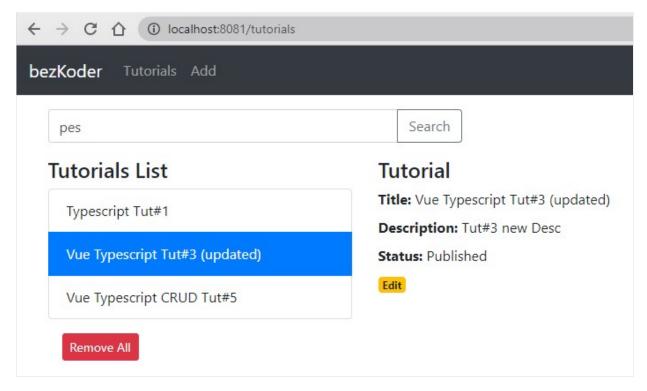
← → C ① localhost:8081/tutorials/3				
bezKoder	Tutorials Add			
	Tutorial Title			
	Vue Typescript Tut#3 (updated)			
	Description			
	Tut#3 new Desc			
	Status: Published			
	UnPublish Delete Update The tutorial was updated successfully!			

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- Search Tutorials by title:



The introduction above is for Vue.js Client with assumption that we have a Server exporting REST APIs:

Methods	Urls	Actions
POST	/api/tutorials	create new Tutorial
GET	/api/tutorials	retrieve all Tutorials
GET	/api/tutorials/:id	retrieve a Tutorial by :id
PUT	/api/tutorials/:id	update a Tutorial by :id
DELETE	/api/tutorials/:id	delete a Tutorial by :id
DELETE	/api/tutorials	delete all Tutorials
GET	/api/tutorials?title= [keyword]	find all Tutorials which title contains keyword

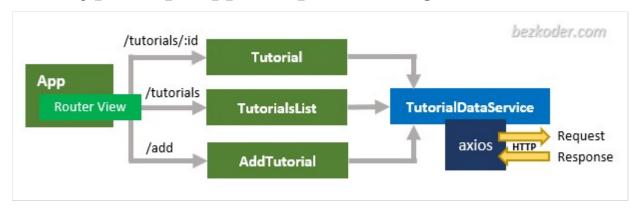
You can find step by step to build a Server like this in one of these posts:

- Express, Sequelize & MySQL (https://bezkoder.com/node-js-express-sequelize-mysql/)
- Express, Sequelize & PostgreSQL (https://bezkoder.com/node-express-sequelize-postgresql/)
- Express & MongoDb (https://bezkoder.com/node-express-mongodb-crud-rest-api/)
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 Spring Boot & MySQL (https://bezkoder.com/spring-boot-jpa-crud-rest-api)
 - Spring Brive & Relies on the period of the state of the

- Spring Boot & MongoDB (https://bezkoder.com/angular-spring-boot-mongodb/)
- Spring Boot & H2 (https://bezkoder.com/spring-boot-jpa-h2-example/)
- Spring Boot & Cassandra (https://bezkoder.com/spring-boot-cassandra-crud/)
- Django & MySQL (https://bezkoder.com/django-crud-mysql-rest-framework/)
- Django & PostgreSQL (https://bezkoder.com/django-postgresql-crud-rest-framework/)
- Django & MongoDB (https://bezkoder.com/django-mongodb-crud-rest-framework/)

All of them can work well with this Vue Typescript App.

Vue Typescript App Component Diagram



- The App component is a container with router-view. It has navbar that links to routes paths.
- TutorialsList component gets and displays Tutorials.
- Tutorial component has form for editing Tutorial's details based on :id.
- AddTutorial component has form for submission new Tutorial.
- These Components call TutorialDataService methods which use axios to make
 HTTP requests and receive responses.

Technology

• vue: 2.6.11

• vue-router: 3.1.6

axios: 0.19.2

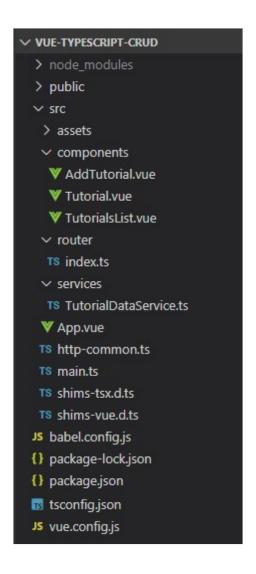
vue-class-component 7.2.3

• vue-property-decorator 8.4.1

Project Structure

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Let me explain it briefly.

- package.json contains main modules: vue , vue-router , vue-class-component ,
 axios .
- There are 3 components: TutorialsList , Tutorial , AddTutorial .
- router/index.ts defines routes for each component.
- http-common.ts initializes axios with HTTP base Url and headers.
- TutorialDataService has methods for sending HTTP requests to the Apis.
- **vue.config.js** configures *port* for this Vue Client.

Setup Vue.js Typescript Project

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

vue create vue-typescript-crud

You will see some options, choose **Manually select features**.

Select the following options:

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```
Please pick a preset: Manually select features
Check the features needed for your project:
(*) Babel
>(*) TypeScript
( ) Progressive Web App (PWA) Support
( ) Router
( ) Vuex
( ) CSS Pre-processors
( ) Linter / Formatter
( ) Unit Testing
( ) E2E Testing
```

Then configure the project like this:

```
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, TS
? Use class-style component syntax? Yes
? Use Babel alongside TypeScript (required for modern mode, auto-detected poly)
? Where do you prefer placing config for Babel, PostCSS, ESLint, etc.? In pack;
? Save this as a preset for future projects? (y/N) No
```

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.ts
App.vue
🗋 main.ts
🗋 package.json

Open **public**/index.html, add bootstrap inside <head> tag: We use cookies to improve your experience with the site. To find out more, you can read the full

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Add Vue Router to Vue Typescript App

- Run the command: npm install vue-router.
- In **src/router** folder, create *index.ts* and define Router as following code:

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```
import Vue from "vue";
import VueRouter, { RouteConfig } from "vue-router";
Vue.use(VueRouter);
const routes: Array<RouteConfig> = [
    path: "/",
    alias: "/tutorials",
    name: "tutorials",
    component: () => import("../components/TutorialsList.vue")
  },
    path: "/tutorials/:id",
    name: "tutorial-details",
    component: () => import("../components/Tutorial.vue")
  },
  {
    path: "/add",
    name: "add",
    component: () => import("../components/AddTutorial.vue")
  }
];
const router = new VueRouter({
  mode: "history",
  base: process.env.BASE_URL,
  routes
});
export default router;
```

- Open **src/**main.ts, then import router:

```
import Vue from "vue";
import App from "./App.vue";
import router from "./router";

Vue.config.productionTip = false;

new Vue({
    router,
    render: h => h(App)
}).$mount("#app");
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```

Add Navbar and Router View to Vue Typescript App

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

```
<template>
 <div id="app">
   <nav class="navbar navbar-expand navbar-dark bg-dark">
     <a href="#" class="navbar-brand">bezKoder</a>
     <div class="navbar-nav mr-auto">
       <a href="/tutorials" class="nav-link">Tutorials</a>
       <a href="/add" class="nav-link">Add</a>
       </div>
   </nav>
   <div class="container mt-3">
     <router-view />
   </div>
  </div>
</template>
<script lang="ts">
import { Component, Vue } from "vue-property-decorator";
@Component
export default class App extends Vue {}
</script>
```

Initialize Axios for Vue Typescript CRUD HTTP Client

Let's install axios with command: npm install axios.

Then, under **src** folder, we create *http-common.ts* file like this:

```
import axios from "axios";

export default axios.create({
  baseURL: "http://localhost:8080/api",
  headers: {
    "Content-type": "application/json"
  }
});
```

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configures.

Create Data Service

Our service will use axios from HTTP client above to send HTTP requests.

services/TutorialDataService.ts

```
import http from "../http-common";
class TutorialDataService {
  getAll() {
    return http.get("/tutorials");
  get(id: string) {
    return http.get(`/tutorials/${id}`);
  }
  create(data: any) {
    return http.post("/tutorials", data);
  }
  update(id: string, data: any) {
    return http.put(`/tutorials/${id}`, data);
  }
  delete(id: string) {
    return http.delete(`/tutorials/${id}`);
  }
  deleteAll() {
    return http.delete(`/tutorials`);
  }
  findByTitle(title: string) {
    return http.get(`/tutorials?title=${title}`);
  }
}
export default new TutorialDataService();
```

Create Vue Components

As I've said before, there are 3 components corresponding to 3 routes defined in Vue Router.

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This component has a Form to submit new futorial with 2 fields: title &

description. It calls TutorialDataService.create() method.

components/AddTutorial.vue

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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</pre>
                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 lang="ts">
     import { Component, Vue } from "vue-property-decorator";
     import TutorialDataService from "../services/TutorialDataService";
     @Component
     export default class AddTutorial extends Vue {
       private tutorial: any = {
          id: null,
We use cookies to improve your experience with the site. To find out more, you can read the full description:
          pub<u>្ទីក់ទៅសេស្ទៈ&falaticy (https://bezkoder.com/privacy-policy/)</u>
                                                                        Accept
```

```
};
  private submitted: boolean = false;
  saveTutorial() {
    var data = {
     title: this.tutorial.title,
      description: this.tutorial.description,
    };
    TutorialDataService.create(data)
      .then((response) => {
        this.tutorial.id = response.data.id;
        console.log(response.data);
        this.submitted = true;
      })
      .catch((e) => {
        console.log(e);
      });
  }
  newTutorial() {
    this.submitted = false;
    this.tutorial = {};
  }
}
</script>
<style scoped>
.submit-form {
  max-width: 300px;
  margin: auto;
}
</style>
```

List of items Component

This component calls 3 TutorialDataService methods:

- getAll()
- deleteAll()
- findByTitle()

components/TutorialsList.vue

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```
<template>
       <div class="list row">
         <div class="col-md-8">
           <div class="input-group mb-3">
             <input
               type="text"
               class="form-control"
               placeholder="Search by title"
               v-model="title"
             />
             <div class="input-group-append">
               <button
                 class="btn btn-outline-secondary"
                 type="button"
                 @click="searchTitle"
                 Search
               </button>
             </div>
           </div>
         </div>
         <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 }}
             <button class="m-3 btn btn-sm btn-danger" @click="removeAllTutorials">
             Remove All
           </button>
         </div>
         <div class="col-md-6">
           <div v-if="currentTutorial">
             <h4>Tutorial</h4>
             <div>
               <label><strong>Title:</strong></label> {{ currentTutorial.title }}
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```

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```
{{ currentTutorial.description }}
            </div>
            <div>
              <label><strong>Status:</strong></label>
              {{ currentTutorial.published ? "Published" : "Pending" }}
            </div>
            <a
              class="badge badge-warning"
              :href="'/tutorials/' + currentTutorial.id"
              Edit
            </a>
          </div>
          <div v-else>
            <br />
            Please click on a Tutorial...
          </div>
        </div>
      </div>
    </template>
    <script lang="ts">
    import { Component, Vue } from "vue-property-decorator";
    import TutorialDataService from "../services/TutorialDataService";
    @Component
    export default class TutorialsList extends Vue {
      private tutorials: any[] = [];
      private currentTutorial: any = null;
      private currentIndex: number = -1;
      private title: string = "";
      retrieveTutorials() {
        TutorialDataService.getAll()
          .then((response) => {
            this.tutorials = response.data;
            console.log(response.data);
          })
          .catch((e) => {
            console.log(e);
          });
      }
      refreshList() {
this.currentTutorial = null;
```

thiPrivacyentPolicy (https://bezkoder.com/privacy-policy/)

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```
setActiveTutorial(tutorial: any, index: number) {
    this.currentTutorial = tutorial;
    this.currentIndex = index;
  }
  removeAllTutorials() {
    TutorialDataService.deleteAll()
      .then((response) => {
        console.log(response.data);
        this.refreshList();
      })
      .catch((e) => {
        console.log(e);
      });
  }
  searchTitle() {
    TutorialDataService.findByTitle(this.title)
      .then((response) => {
        this.tutorials = response.data;
        console.log(response.data);
      })
      .catch((e) => {
        console.log(e);
      });
  }
  mounted() {
    this.retrieveTutorials();
  }
}
</script>
<style scoped>
.list {
  text-align: left;
  max-width: 750px;
  margin: auto;
}
</style>
```

If you click on **Edit** button of any Tutorial, the app will direct you to *Tutorial* page with We use cookies to improve your experience with the site. To find out more, you can read the full

Item details coniponem .//bezkoder.com/privacy-policy/) Accept

This component will use 3 TutorialDataService methods for getting data & update, delete the Tutorial:

- get()
- update()
- delete()

components/Tutorial.vue

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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>
</<del>অব্যেক্তিয়ে & Policy (https://bezkoder.com/privacy-policy/)</del>
                                                                Accept
```

```
<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 lang="ts">
     import { Component, Vue } from "vue-property-decorator";
     import\ Tutorial Data Service\ from\ "../services/Tutorial Data Service";
     @Component
     export default class Tutorial extends Vue {
       private currentTutorial: any = null;
       private message: string = "";
       getTutorial(id: string) {
         TutorialDataService.get(id)
           .then((response) => {
             this.currentTutorial = response.data;
             console.log(response.data);
           })
           .catch((e) => {
             console.log(e);
           });
       }
       updatePublished(status: boolean) {
         var data = {
           id: this.currentTutorial.id,
           title: this.currentTutorial.title,
           description: this.currentTutorial.description,
           published: status,
         };
         TutorialDataService.update(this.currentTutorial.id, data)
           .then((response) => {
             this.currentTutorial.published = status;
             console.log(response.data);
We use cookies to improve your experience with the site. To find out more, you can read the full
           .catch((e) => {
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                                                                     Accept
```

```
});
  }
  updateTutorial() {
    TutorialDataService.update(this.currentTutorial.id, this.currentTutorial)
      .then((response) => {
        console.log(response.data);
        this.message = "The tutorial was updated successfully!";
      })
      .catch((e) => {
        console.log(e);
      });
  }
  deleteTutorial() {
    TutorialDataService.delete(this.currentTutorial.id)
      .then((response) => {
        console.log(response.data);
        this.$router.push({ name: "tutorials" });
      })
      .catch((e) => {
        console.log(e);
      });
  }
  mounted() {
    this.message = "";
    this.getTutorial(this.$route.params.id);
  }
}
</script>
<style scoped>
.edit-form {
  max-width: 300px;
  margin: auto;
</style>
```

Configure Port for Vue Typescript CRUD App

Because most of HTTP Server use CORS configuration that accepts resource sharing retricted to some sites or ports, so we also need to configure port for our App.

In project root folder, create *vue.config.js* file with following content: We use cookies to improve your experience with the site. To find out more, you can read the full

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```
module.exports = {
  devServer: {
    port: 8081
  }
}
```

We've set our app running at port 8081.

Run Vue Typescript App

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

If the process is successful, open Browser with Url: http://localhost:8081/ and check it.

This Vue Client will work well with following back-end Rest APIs:

- Express, Sequelize & MySQL (https://bezkoder.com/node-js-express-sequelize-mysql/)
- Express, Sequelize & PostgreSQL (https://bezkoder.com/node-express-sequelize-postgresql/)
- Express & MongoDb (https://bezkoder.com/node-express-mongodb-crud-rest-api/)
- Spring Boot & MySQL (https://bezkoder.com/spring-boot-jpa-crud-rest-api)
- Spring Boot & PostgreSQL (https://bezkoder.com/spring-boot-postgresql-example/)
- Spring Boot & MongoDB (https://bezkoder.com/angular-spring-boot-mongodb/)
- Spring Boot & H2 (https://bezkoder.com/spring-boot-jpa-h2-example/)
- Spring Boot & Cassandra (https://bezkoder.com/spring-boot-cassandra-crud/)
- Django & MySQL (https://bezkoder.com/django-crud-mysql-rest-framework/)
- Django & PostgreSQL (https://bezkoder.com/django-postgresql-crud-rest-framework/)
- Django & MongoDB (https://bezkoder.com/django-mongodb-crud-rest-framework/)

Conclusion

Today we've built a Vue Typescript example – CRUD Application successfully with Vue Router, Axios, Bootstrap. Now we can consume REST APIs, display and modify data in a clean way. I hope you apply it in your project at ease.

You can also know how to add Token based Authentication into Vue/Vuex Typescript App with this post:

Vue/Vuex Typescript: JWT Authentication example (https://bezkoder.com/vuex-typescript-jwt-auth/)

Happy learning, see you again!

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Further Reading https://bezkoder.com/privacy-policy/) Accept

- Vue Class Component (https://class-component.vuejs.org/)
- Vue Router guide (https://router.vuejs.org/)
- https://www.npmjs.com/package/axios (https://www.npmjs.com/package/axios)

Source Code

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

(https://bezkoder.com/tag/axios/) (https://bezkoder.com/tag/crud/) (https://bezkoder.com/tag/rest-api/) (https://bezkoder.com/tag/vue/) (https://bezkoder.com/tag/vue-class-component/) (https://bezkoder.com/tag/vue-router/) (https://bezkoder.com/tag/vue-typescript/)

2 thoughts to "Vue Typescript example: Build a CRUD Application"



ooouuiii

September 6, 2020 at 10:27 pm (https://bezkoder.com/vue-typescript-crud/#comment-4618)

Sir, this saved my project. Thank You!

REPLY



st

September 7, 2020 at 8:59 pm (https://bezkoder.com/vue-typescript-crud/#comment-4626)

One of the best tutorials I have ever seen! Thanks!

REPLY

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