Atelier CRUD REACT HOOKS Partie II

Afficher les données dans MUI DataTable

> Composant Listarticles.js

Accéder au site

https://github.com/gregnb/mui-datatables

On a déjà installer material ui:

npm install @mui/material @emotion/react @emotion/styled

on va maintenant installer MUI-DATATABLE

pour choisir une icône : https://mui.com/components/material-icons/

Installer muidatatable

```
npm install mui-datatables
npm i @mui/styles
```

Dans index.js ajouter cet import car Material UI se base sur cette police roboto.

```
npm i typeface-roboto
import 'typeface-roboto';
```

```
import {ArticleService} from '../../Services/Article-Service';
import { useState, useEffect } from 'react';
//npm install @mui/material @emotion/react @emotion/styled

//npm install mui-datatables
import MUIDataTable from "mui-datatables";
//npm i @mui/styles
import { ThemeProvider } from "@mui/styles";
import { createTheme } from "@mui/material/styles";

import { IconButton,Button } from '@mui/material';
import AddCircleIcon from '@mui/icons-material/AddCircle';
import EditIcon from '@mui/icons-material/Edit';
```

```
import DeleteIcon from '@mui/icons-material/Delete';
import { pink } from '@mui/material/colors';
import { Link } from "react-router-dom";
const ListArticlesDatatable=()=>{
  const [articles, setArticles] = useState([]);
   useEffect(() => {
   GetListArticles();
   console.log(articles)
   },[]);
   const GetListArticles=async()=>{
     await ArticleService.fetchArticles()
          .then((res) => {
            setArticles(res.data);
         });
     }
     const delArticle= async (_id) => {
        await ArticleService.deleteArticle(_id)
        var newarticles=articles.filter((item)=>{
         console.log(item)
         return item._id!==_id
       })
        setArticles(newarticles);
       }
   const columns = [
       {
         label: "Référence",
         name: "reference"
        },
          label: "Désignation",
         name: "designation"
        },
         label: "Prix Achat",
         name: "prixAchat"
        },
         label: "Prix Vente",
```

```
name: "prixVente"
},
{
 label: "Marque",
 name: "marque"
},
 label: "Quatité Stock",
 name: "qtestock"
},
{
    name:"imageartpetitf",
    label: "Image",
    options: {
    customBodyRender : (rowData) => (
        style={{ height: 60, borderRadius: '50%' }}
        src={rowData}
        alt=""
      />
    )
   }
  },
   name:"categorieID",
    label: "Catégorie",
    options: {
    customBodyRender : (categ) => (
    categ? categ.nomcategorie : null
    }
  },
    name:"scategorieID",
    label: "S/Catégorie",
    options: {
    customBodyRender : (scateg) => (
      scateg? scateg.nomscategorie :null
  },
    name: "_id",
    label: "Actions",
    options: {
    customBodyRender: (value) => (
      <div>
```

```
<IconButton >
             { <Link to={"/Article/edit/" + value} >
                <EditIcon color='secondary' />
           </Link>
            }
           </IconButton>
           <IconButton onClick={()=>{delArticle(value)}}>
           <DeleteIcon sx={{ color: pink[500] }} />
             </IconButton>
             </div>
           }
        },
        ];
return(
      <div style={{padding:5,margin:5}}>
     <Button
        color="success"
        startIcon={<AddCircleIcon />}
        variant="contained"
        { <Link to={"/Articles/add"} style={{textDecoration:
"none",color:"white"}}>
                Ajouter
           </Link>
            }
     </Button>
      </div>
        {articles.length>0?
               <ThemeProvider theme={createTheme()}>
               <MUIDataTable
                title="Liste des articles"
                 data={articles}
```

Composant Insertarticle

- 1. Dans le dossier « Components/Articles », créer le composant intitulé « Insertarticle.js », il contiendra un formulaire d'ajout de données. On va utiliser textfield de Material pour les champs. Ainsi que la bibliothèque Filepond pour le téléchargement des images.
- 2. Installer la bibliothèque react-toastify(pour affichage) et Filepond (pour les images)
 - a. Installer « react-toastify ». Il permet d'ajouter facilement des notifications à notre application.

Pour plus d'informations visiter : https://www.npmjs.com/package/react-toastify

```
npm i react-toastify
```

b. Installer « FilePond ». React FilePond est un composant wrapper pratique pour FilePond, une bibliothèque JavaScript qui peut télécharger tout ce que vous lui lancez, optimise les images pour des téléchargements plus rapides et offre une expérience utilisateur formidable, accessible et fluide.

Pour plus d'informations visiter: https://codesandbox.io/s/rylk9z5lzm?file=/src/index.js:954-962

```
npm i filepond
npm i react-filepond
npm i filepond-plugin-image-preview
npm i filepond-plugin-image-exif-orientation
```

```
import React, { useState, useEffect } from "react";
import Axios from "../../Axios/Api";
import { useNavigate } from "react-router-dom";
import {Button,TextField,FormControl,MenuItem} from '@mui/material';
import { makeStyles } from '@material-ui/core/styles';
import { ToastContainer, toast } from 'react-toastify';
import 'react-toastify/dist/ReactToastify.css';
import { FilePond, registerPlugin } from 'react-filepond'
import SaveIcon from '@mui/icons-material/Save';
import CancelIcon from '@mui/icons-material/Cancel';
import { Link } from "react-router-dom";
import 'filepond/dist/filepond.min.css';
import FilePondPluginImageExifOrientation from 'filepond-plugin-image-exif-
orientation'
import FilePondPluginImagePreview from 'filepond-plugin-image-preview'
import 'filepond-plugin-image-preview.css'
registerPlugin(FilePondPluginImageExifOrientation, FilePondPluginImagePreview)
const useStyles = makeStyles((theme) => ({
 formControl: {
   margin: theme.spacing(1),
   minWidth: 120,
 }
}));
const Insertarticle =()=> {
 let navigate=useNavigate();
 const classes = useStyles();
  const [reference, setReference] = useState("");
   const [designation, setDesignation] = useState("");
   const [categorieID, setCatID] = useState("");
   const [categories, setCategories] = useState([]);
const [prixAchat, setPrixAchat] = useState("");
    const [prixVente, setPrixVente] = useState("");
   const [prixSolde, setPrixSolde] = useState("");
   const [marque, setMarque] = useState("");
   const [scategories, setscategories] = useState([]);
   const [scategorieID, setSCatID] = useState("");
   const [qtestock, setQtestock] = useState("");
   const [caracteristiques, setCaracteristiques] = useState("");
   const [files, setFiles] = useState("")
   const [filesm, setFilesm] = useState([])
```

```
useEffect(() => {
   GetListCategories();
  },[]);
    const GetListCategories=async()=>{
      await Axios.get("/categories")
          .then((res) => {
            setCategories(res.data);
                  });
      }
      const GetListSCategories=async(idcat)=>{
        await Axios.get("/scategories/cat/"+idcat)
             .then((res) => {
              setscategories(res.data);
                     });
         }
   const handleSubmit = async (event) => {
    event.preventDefault();
   var ig=[];
   filesm.forEach(element => {
   ig.push("images/"+element.file.name);
   });
    const objetarticle = {
        reference: reference,
        designation :designation,
        prixAchat :prixAchat,
        prixVente :prixVente,
        prixSolde :prixSolde,
        marque :marque,
        qtestock:qtestock,
        caracteristiques:caracteristiques,
        imageartpetitf : files?"images/"+files[0].file.name:null,
        imageartgrandf:ig,
        categorieID :categorieID,
        scategorieID:scategorieID
        };
        await Axios.post("/articles", objetarticle).then((res)=>{
```

```
toast("Article ajouté", {
          position: "top-right",
          autoClose: 5000,
          hideProgressBar: false,
          closeOnClick: true,
          pauseOnHover: true,
          draggable: true,
          progress: undefined,
          });
     navigate("/ArticlesTable")
    }).catch(error => {
        toast("Erreur Article non ajouté", {
        position: "top-right",
        autoClose: 5000,
        hideProgressBar: false,
        closeOnClick: true,
        pauseOnHover: true,
        draggable: true,
        progress: undefined,
        });
    });
}
return (
<>
<ToastContainer />
 <div className="container">
    <form >
      <div>
   <Button style={{padding:15,margin:20,width:150}}</pre>
   color="secondary"
   startIcon={<SaveIcon />}
   variant="contained"
   onClick={(event)=>handleSubmit(event)}
>
   Save
 </Button>
 <Button style={{padding:15,margin:2,width:150}}</pre>
   color="primary"
```

```
startIcon={<CancelIcon />}
       variant="contained"
       { <Link to={"/ArticlesTable"} style={{textDecoration:
"none",color:"white"}}>
               Annuler
           </Link>
     </Button>
         </div>
          <FormControl className={classes.formControl} >
           <TextField
                          variant="outlined"
                          style={{ marginLeft: 8,marginTop:20,width:400}}
                          label="Désignation"
                          value={designation}
                          onChange={e => setDesignation(e.target.value)}
                          required />
            </FormControl>
            <FormControl className={classes.formControl} >
             <TextField
                        variant="outlined"
                        style={{ marginLeft: 20,marginTop:20,width:400}}
                        label="Référence"
                        value={reference}
                        onChange={e => setReference(e.target.value)}
                        required />
            </FormControl> <br/>
               <FormControl className={classes.formControl}>
            ≺TextField
                      variant="outlined"
                      style={{ marginLeft: 8,marginTop:20,width:400}}
                        label="Prix Achat"
```

```
type="number"
                 value={prixAchat}
               onChange={e => setPrixAchat(e.target.value)}
         />
    </FormControl>
   <FormControl className={classes.formControl}>
    <TextField
               variant="outlined"
               style={{ marginLeft: 20,marginTop:20,width:400}}
               label="Prix Vente"
               type="number"
               value={prixVente}
               onChange={e => setPrixVente(e.target.value)}
         />
    </FormControl> <br/>
     <FormControl className={classes.formControl}>
    <TextField
               variant="outlined"
               style={{ marginLeft: 8,marginTop:20,width:400}}
                 label="Prix Solde"
                 type="number"
                 value={prixSolde}
                 onChange={e => setPrixSolde(e.target.value)}
         />
    </FormControl>
  <FormControl className={classes.formControl}>
  <TextField
             variant="outlined"
             style={{ marginLeft: 20,marginTop:20,width:400}}
                 label="Quantité Stock"
                 type="number"
                 value={qtestock}
                 onChange={e => setQtestock(e.target.value)}
         />
 </FormControl> <br/>
 <FormControl className={classes.formControl}>
  <TextField
           fullWidth
           style={{ marginLeft: 8,marginTop:20,width:400}}
             variant="outlined"
             label="Marque"
             value={marque}
             onChange={e => setMarque(e.target.value)}
  />
</FormControl>
```

```
<FormControl className={classes.formControl}>
           <TextField
                    fullWidth
                    style={{ marginLeft: 20,marginTop:20,width:400}}
                    variant="outlined"
                    label="Caractéristiques"
                    value={caracteristiques}
                    onChange={e => setCaracteristiques(e.target.value)}
           />
            </FormControl> <br/>
            <FormControl style={{width:350}}>
             <TextField
             fullWidth
                   select
                   label="Catégories"
                   variant="outlined"
                   value={categorieID}
                   style={{ marginLeft: 8,marginTop:20,width:820}}
                   onChange={(event)=>{setCatID(event.target.value);    GetListSCateg
ories(event.target.value) }}
                   helperText="Sélectionner une catégorie"
               categories ?
               categories.map(cat=>
                    <MenuItem key={cat._id}</pre>
value={cat._id}>{cat.nomcategorie}
                   </MenuItem>
              )
               :null
             </TextField>
             </FormControl><br/>
             <FormControl style={{width:350}}>
                   <TextField
                   select
                   label="S/Catégorie"
                   style={{ marginLeft: 8,marginTop:10,width:820}}
                   value={scategorieID}
                   variant="outlined"
                   helperText="Sélectionner une s/catégorie"
                 onChange={e => setSCatID(e.target.value)}
                    >
               scategories ?
               scategories.map((scat)=>
```

```
<MenuItem key={scat._id}</pre>
value={scat._id}>{scat.nomscategorie}</MenuItem>
               :null
               }
             </TextField>
          </FormControl>
             <h4>Sélectionner une image</h4>
             <FormControl className={classes.formControl}>
             <div style={{width:400, height:50}}>
           <FilePond</pre>
           files={files}
           allowMultiple={false}
           onupdatefiles={setFiles}
           labelIdle='<span class="filepond--label-action">Browse One</span>'
         />
           </div>
          </FormControl>
          <FormControl className={classes.formControl}>
           <div style={{width:400, height:40}}>
          <FilePond
           files={filesm}
           allowMultiple={true}
           onupdatefiles={setFilesm}
           labelIdle='<span class="filepond--label-action">Browse Many</span>'
         />
            </div>
           </FormControl>
           </form>
         </div>
        </>
    );
export default Insertarticle;
```

Pour que react-toastify fonctionne correctement (après redirection) il faut modifier le fichier App.js comme suit :

```
import Navbarre from './Components/Navbarre';
import 'bootstrap/dist/css/bootstrap.min.css';
import ListRoutes from "./Routes/ListRoutes";
import {BrowserRouter as Router} from 'react-router-dom';
import { ToastContainer} from 'react-toastify';
function App() {
 return (
    <>
      <Router>
      <Navbarre/>
      <ListRoutes/>
      <ToastContainer />
      </Router>
    </>>
  );
}
export default App;
```

1. Dans le dossier « Components/Articles », créer le composant intitulé « Editarticle.js », qui permettra de mettre à jour une ligne sélectionnée.

```
import React, { useState,useEffect } from "react";
import Axios from "../../Axios/Api"
import { useNavigate, useParams } from "react-router-dom";
import {ArticleService} from "../../Services/Article-Service";
import SaveIcon from '@mui/icons-material/Save';
import CancelIcon from '@mui/icons-material/Cancel';
import { Link } from "react-router-dom";
import {Button} from '@mui/material';
import MenuItem from '@material-ui/core/MenuItem';
import FormControl from '@material-ui/core/FormControl';
import TextField from '@material-ui/core/TextField';
import { toast } from 'react-toastify';
import 'react-toastify/dist/ReactToastify.css';
// Import React FilePond
import { FilePond, File,registerPlugin } from 'react-filepond'
// Import FilePond styles
import 'filepond/dist/filepond.min.css';
import FilePondPluginImageExifOrientation from 'filepond-plugin-image-exif-
orientation'
import FilePondPluginImagePreview from 'filepond-plugin-image-preview'
```

```
import 'filepond-plugin-image-preview.css'
registerPlugin(FilePondPluginImageExifOrientation, FilePondPluginImagePreview)
const ModifArticle =()=> {
   let navigate=useNavigate();
   const {id} = useParams();
   const [reference, setReference] = useState("");
   const [designation, setDesignation] = useState("");
   const [categories, setCategories] = useState("");
   const [categorieID, setcategorieID] = useState("");
   const [scategories, setScategories] = useState("");
   const [scategorieID, setscategorieID] = useState("");
   const [prixAchat, setPrixAchat] = useState("");
   const [prixVente, setPrixVente] = useState("");
   const [prixSolde, setPrixSolde] = useState("");
   const [marque, setMarque] = useState("");
   const [qtestock, setQtestock] = useState("");
   const [caracteristiques, setCaracteristiques] = useState("");
   const [files, setFiles] = useState([])
   const [filesm, setFilesm] = useState([])
   useEffect(() => {
      GetListCategories();
      ArticleService.fetchArticleById(id)
        .then(res => {
         setReference(res.data.reference);
         setDesignation(res.data.designation);
         setscategorieID(res.data.scategorieID)
         setcategorieID(res.data.categorieID);
         setPrixAchat(res.data.prixAchat);
         setPrixVente(res.data.prixVente);
         setPrixSolde(res.data.prixSolde);
         setMarque(res.data.marque);
         setQtestock(res.data.qtestock);
         setCaracteristiques(res.data.caracteristiques);
         setFiles("/"+ res.data.imageartpetitf);
         setFilesm(res.data.imageartgrandf);
            })
        .catch((error) => {
         console.log(error);
          toast("Une erreur est parvenue", {
              position: "top-right",
              autoClose: 5000,
              hideProgressBar: false,
              closeOnClick: true,
               pauseOnHover: true,
```

```
draggable: true,
        progress: undefined,
        });
 })
 },[]);
 const GetListCategories=async()=>{
   await Axios.get("/categories")
       .then((res) \Rightarrow {
         setCategories(res.data);
               });
   }
 const GetListSCategories=async(idcat)=>{
   await Axios.get('/scategories/cat/' + idcat)
          .then((res) => {
           setScategories(res.data);
                  });
      }
const handleSubmit = async (event) => {
 event.preventDefault();
 var ig=[];
 filesm.forEach(element => {
 ig.push("/images/"+element.file.name);
 });
 const objetarticle = {
  _id : id,
     reference: reference,
     designation :designation,
     prixAchat :prixAchat,
     prixVente :prixVente,
     prixSolde :prixSolde,
     marque :marque,
     qtestock :qtestock,
     caracteristiques:caracteristiques,
     categorieID:categorieID,
     imageartpetitf : files?"images/"+files[0].file.name:null,
     imageartgrandf:ig,
     scategorieID :scategorieID
```

```
console.log(objetarticle)
   await ArticleService.editArticle(objetarticle).then((res)=>{
          toast("Article modifié", {
           position: "top-right",
           autoClose: 5000,
           hideProgressBar: false,
           closeOnClick: true,
           pauseOnHover: true,
           draggable: true,
           progress: undefined,
           });
           navigate("/ArticlesTable")
     }).catch(error => {
         toast("Erreur Article non modifié", {
         position: "top-right",
         autoClose: 5000,
         hideProgressBar: false,
         closeOnClick: true,
         pauseOnHover: true,
         draggable: true,
         progress: undefined,
         });
    });
}
return (
<>
    <form onSubmit={handleSubmit} >
        <h2>Edit Article </h2>
          <div>
   <Button style={{padding:15,margin:20,width:150}}</pre>
   color="secondary"
   startIcon={<SaveIcon />}
   variant="contained"
   onClick={(event)=>handleSubmit(event)}
  Update
 </Button>
```

```
<Button style={{padding:15,margin:2,width:150}}</pre>
        color="primary"
        startIcon={<CancelIcon />}
        variant="contained"
        { <Link to={"/ArticlesTable"} style={{textDecoration:
"none",color:"white"}}>
                Annuler
            </Link>
      </Button>
        </div>
           <FormControl >
            <TextField ■
                 variant="outlined"
                 label="Désignation"
                 style={{ marginLeft: 8,marginTop:20,width:400}}
                 value={designation}
                 onChange={e => setDesignation(e.target.value)}
                 required />
             </FormControl>
             <FormControl >
              ≺TextField
              variant="outlined"
               label="Référence"
               value={reference}
               style={{ marginLeft: 8,marginTop:20,width:400}}
               onChange={e => setReference(e.target.value)}
               required />
             </FormControl> <br/>
               <FormControl >
             <TextField
              variant="outlined"
                 label="Prix Achat"
                 type="number"
                 style={{ marginLeft: 8,marginTop:20,width:400}}
                  value={prixAchat}
                 onChange={e => setPrixAchat(e.target.value)}
                  />
             </FormControl>
             <FormControl >
```

```
<TextField
    variant="outlined"
       label="Prix Vente"
       type="number"
       style={{ marginLeft: 8,marginTop:20,width:400}}
       value={prixVente}
        onChange={e => setPrixVente(e.target.value)}
         />
   </FormControl> <br/>
    <FormControl >
   <TextField
    variant="outlined"
       label="Prix Solde"
       type="number"
       style={{ marginLeft: 8,marginTop:20,width:400}}
        value={prixSolde}
        onChange={e => setPrixSolde(e.target.value)}
         />
   </FormControl>
 <FormControl >
 <TextField
  variant="outlined"
       label="Quantité Stock"
       type="number"
        style={{ marginLeft: 8,marginTop:20,width:400}}
       value={qtestock}
       onChange={e => setQtestock(e.target.value)}
 </FormControl><br/>
 <FormControl>
 <TextField
  style={{ marginLeft: 8,marginTop:20,width:400}}
  variant="outlined"
  label="Marque"
  value={marque}
  onChange={e => setMarque(e.target.value)}
         />
</FormControl>
 <FormControl >
 <TextField
 style={{ marginLeft: 8,marginTop:20,width:400}}
 margin="normal"
  variant="outlined"
  multiline
  rows={2}
```

```
label="Caractéristiques"
            type="textarea"
            value={caracteristiques}
            onChange={e => setCaracteristiques(e.target.value)}
                  />
           </FormControl> <br/>
            <FormControl >
             <TextField
                   select
                   label="Categories"
                   variant="outlined"
                   value={categorieID}
                   style={{ marginLeft: 8,marginTop:20,width:800}}
                   onChange={e=>{setcategorieID(e.target.value);
GetListSCategories(e.target.value)} }
               categories ?
               categories.map(f=>
                    <MenuItem value={f._id}>{f.nomcategorie}
                    </MenuItem>
               )
               :null
             </TextField>
             </FormControl><br/>
             <FormControl >
             <TextField
                   label="Sous Catégorie"
                   variant="outlined"
                   value={scategorieID}
                   style={{ marginLeft: 8,marginTop:20,width:800}}
                   onChange={e => setscategorieID(e.target.value)}
                >
               scategories ?
               scategories.map(f=>
                    <MenuItem value={f._id}>{f.nomscategorie}
                    </MenuItem>
               )
               :<MenuItem value={scategorieID._id}>{scategorieID.nomscategorie}
</MenuItem>
             </TextField>
```

```
</FormControl>
          </form>
             <br/>
             <h4>Upload Images</h4>
             <FormControl >
             <div style={{width:400, height:50}}>
           <FilePond</pre>
           files={files}
           allowMultiple={false}
           onupdatefiles={setFiles}
           labelIdle='<span class="filepond--label-action">Browse One</span>'
         />
           </div>
          </FormControl>
          <FormControl>
           <div style={{width:400, height:40}}>
          <FilePond
           files={filesm}
           allowMultiple={true}
           onupdatefiles={setFilesm}
           labelIdle='<span class="filepond--label-action">Browse Many</span>'
         />
            </div>
           </FormControl>
         </>>
    );
}
export default ModifArticle;
```

2. Créer un composant « Routes/Routes.js » qui contiendra les chemins de notre application.

```
import { Routes, Route } from "react-router-dom";
import ListArticles from "../Components/Articles/ListArticles"
import AjoutArticle from "../Components/Articles/AjoutArticle";
```

3. Créer le composant « Routes/ListRoutes.js » contenant la route de chaque compposant.

```
import { Routes, Route } from "react-router-dom";
import Editarticle from "../Components/Articles/Editarticle";
import Insertarticle from "../Components/Articles/Insertarticle";
import ListArticleCard from "../Components/Articles/ListArticleCard";
import Listarticles from "../Components/Articles/Listarticles";
import ListArticlesDatatable from "../Components/Articles/ListArticlesDatatable";
import Editcategorie from "../Components/Categories/Editcategorie";
import Insertcategorie from "../Components/Categories/Insertcategorie";
import Listcategories from "../Components/Categories/Listcategories";
import EditScategorie from "../Components/SouCategories/EditScategorie";
import InsertScategorie from "../Components/SouCategories/InsertScategorie";
import ListScategorie from "../Components/SouCategories/ListScategorie";
const ListRoutes=() =>{
return (
<Routes>
<Route path="/Articles" exact element={<Listarticles/>}/>
<Route path="/ArticlesCard" exact element={<ListArticleCard/>}/>
<Route path="/ArticlesTable" exact element={<ListArticlesDatatable/>}/>
<Route path="/Articles/add" element={<Insertarticle/>}/>
<Route path="/Article/edit/:id" element={<Editarticle/>}/>
<Route path="/Categories" exact element={<Listcategories/>}/>
<Route path="/Categories/add" element={<Insertcategorie/>}/>
<Route path="/Categories/edit/:id" element={<Editcategorie/>}/>
<Route path="/Scategories" exact element={<ListScategorie/>}/>
<Route path="/Scategories/add" element={<InsertScategorie/>}/>
<Route path="/Scategories/edit/:id" element={<EditScategorie/>}/>
</Routes>
      );
```

```
export default ListRoutes;
```

4. Créer le fichier Components/Navbarre.js

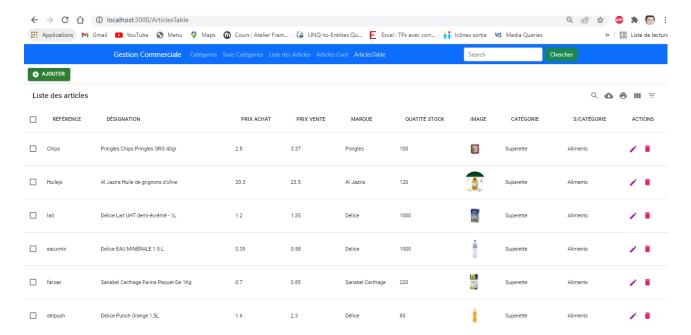
```
import React from 'react'
import {Nav, Navbar,Container,Form,FormControl,Button} from 'react-bootstrap';
import {Link } from 'react-router-dom'
const Navbarre=()=>{
  return(
<Navbar bg="primary" variant="dark">
    <Container>
    <Navbar.Brand >Gestion Commerciale</Navbar.Brand>
    <Nav className="me-auto">
      <Nav.Link as={Link} to="/Categories">Catégories</Nav.Link>
      <Nav.Link as={Link} to="/Scategories">Sous Catégories</Nav.Link>
      <Nav.Link as={Link} to="/Articles">Liste des Articles</Nav.Link>
      <Nav.Link as={Link} to="/ArticlesCard">Articles Card</Nav.Link>
      <Nav.Link as={Link} to="/ArticlesTable">ArticlesTable</Nav.Link>
    </Nav>
    <Form className="d-flex">
        <FormControl</pre>
          type="search"
          placeholder="Search"
          className="me-2"
          aria-label="Search"
        />
        <Button variant="success">Chercher</Button>
      </Form>
    </Container>
  </Navbar>
  )
export default Navbarre
```

5. Modifier « App.js » qui appelles « Routes » et « NavBar » de la façon suivante :

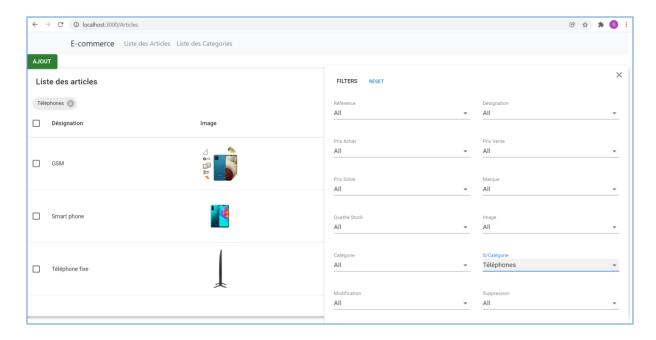
```
import Navbarre from './Components/Navbarre';
import 'bootstrap/dist/css/bootstrap.min.css';
import ListRoutes from "./Routes/ListRoutes";
```

Résultat final

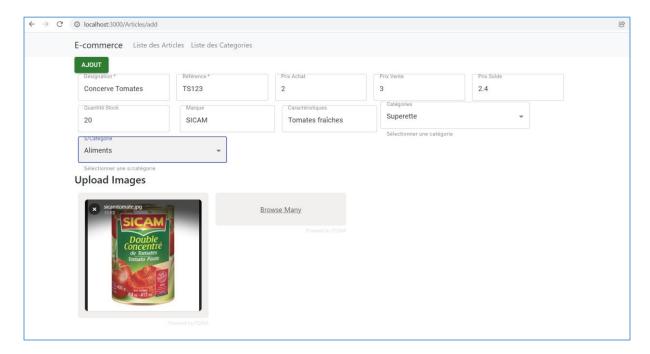
- 1. La liste:
- 2. Opérations sur les filtres
 - a. Colonnes



b. Lignes



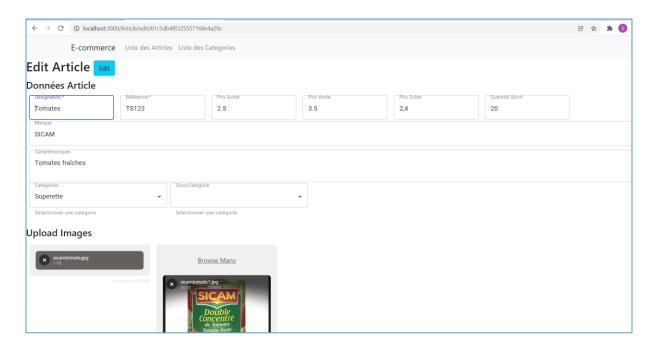
3. Ajout d'un article



L'article est ajouté dans la liste :



4. Modifier un article



Article modifié



5. En cliquant sur « supprimer » l'article est supprimé dans la base de données et dans la liste

