

Case study : Turf Management System

// FILE: src/db.json

```
{
  "users": [
    {
      "id": 1,
      "name": "Admin",
      "email": "admin@turf.com",
      "password": "admin123",
      "role": "admin"
    },
    {
      "id": 2,
      "name": "John Doe",
      "email": "john@user.com",
      "password": "user123",
      "role": "user"
    }
  ],
  "turfs": [
    {
      "id": 1,
      "title": "Downtown Soccer Turf",
      "location": "Downtown",
      "price": "500",
      "description": "A full-size soccer turf perfect for 11v11 games."
    },
    {
      "id": 2,
      "title": "City Center Cricket Pitch",
      "location": "City Center",
      "price": "750",
      "description": "Professional cricket pitch with spectator seating."
    }
  ],
  "cart": [],
  "bookings": []
}
```

// FILE: src/services/ApiService.js

```
import axios from 'axios';
const API_URL = 'http://localhost:3001';
const api = axios.create({
  baseURL: API_URL,
});
export const getUsers = () => api.get('/users');
```

```

export const addUser = (user) => api.post('/users', user);
export const getTurfs = () => api.get('/turfs');
export const getTurfById = (id) => api.get(`/turfs/${id}`);
export const addTurf = (turf) => api.post('/turfs', turf);
export const updateTurf = (id, turf) => api.put(`/turfs/${id}`, turf);
export const deleteTurf = (id) => api.delete(`/turfs/${id}`);
export const getCartItems = () => api.get('/cart');
export const addToCart = (item) => api.post('/cart', item);
export const removeFromCart = (id) => api.delete(`/cart/${id}`);
export const clearCart = () => {
  return api.get('/cart').then(response => {
    const deletePromises = response.data.map(item => api.delete(`/cart/${item.id}`));
    return Promise.all(deletePromises);
  });
};
export const addBooking = (booking) => api.post('/bookings', booking);
export const getBookings = () => api.get('/bookings');

```

// FILE: src/components/AdminNavbar.jsx

```

import React from 'react';
import { Link, useNavigate } from 'react-router-dom';
const AdminNavbar = () => {
  const navigate = useNavigate();
  const handleLogout = () => {
    localStorage.removeItem('user');
    navigate('/');
  };
  return (
    <nav className="navbar navbar-expand-lg navbar-dark bg-dark">
      <div className="container-fluid">
        <Link className="navbar-brand" to="/admin">Admin Dashboard</Link>
        <div className="collapse navbar-collapse">
          <ul className="navbar-nav me-auto mb-2 mb-lg-0">
            <li className="nav-item">
              <Link className="nav-link" to="/admin">Manage Turfs</Link>
            </li>
            <li className="nav-item">
              <Link className="nav-link" to="/admin/bookings">View Bookings</Link>
            </li>
          </ul>
          <button className="btn btn-outline-light" onClick={handleLogout}>Logout</button>
        </div>
      </div>
    </nav>
  );
};

```

```
export default AdminNavbar;
```

```
// FILE: src/components/UserNavbar.jsx
import React from 'react';
import { Link, useNavigate } from 'react-router-dom';
const UserNavbar = () => {
  const navigate = useNavigate();
  const handleLogout = () => {
    localStorage.removeItem('user');
    navigate('/');
  };
  return (
    <nav className="navbar navbar-expand-lg navbar-light bg-light">
      <div className="container-fluid">
        <Link className="navbar-brand" to="/dashboard">Turf Booking</Link>
        <div className="collapse navbar-collapse">
          <ul className="navbar-nav me-auto mb-2 mb-lg-0">
            <li className="nav-item">
              <Link className="nav-link" to="/dashboard">Browse Turfs</Link>
            </li>
            <li className="nav-item">
              <Link className="nav-link" to="/cart">Cart</Link>
            </li>
          </ul>
          <button className="btn btn-outline-danger"
onClick={handleLogout}>Logout</button>
        </div>
      </div>
    </nav>
  );
};
export default UserNavbar;
```

```
// FILE: src/components/TurfCard.jsx
import React from 'react';
const TurfCard = ({ turf, onAddToCart }) => {
  return (
    <div className="card h-100">
      <div className="card-body">
        <h5 className="card-title">{turf.title}</h5>
        <h6 className="card-subtitle mb-2 text-muted">{turf.location}</h6>
        <p className="card-text">{turf.description}</p>
        <p className="card-text"><strong>Price: ₹{turf.price}</strong></p>
      </div>
      <div className="card-footer">

```

```

        <button className="btn btn-primary w-100" onClick={() => onAddToCart(turf)}>Add
to Cart</button>
      </div>
    </div>
  );
};
export default TurfCard;

```

```

// FILE: src/pages/Welcome.jsx
import React from 'react';
import { Link } from 'react-router-dom';
const Welcome = () => {
  return (
    <div className="container text-center mt-5">
      <h1>Welcome to the Turf Management System</h1>
      <p className="lead">Your one-stop solution for booking and managing sports turfs.</p>
      <div className="mt-4">
        <Link to="/login" className="btn btn-primary btn-lg me-2">Login</Link>
        <Link to="/register" className="btn btn-secondary btn-lg">Register</Link>
      </div>
    </div>
  );
};
export default Welcome;

```

```

// FILE: src/pages/Register.jsx
import React from 'react';
import { Formik, Form, Field, ErrorMessage } from 'formik';
import * as Yup from 'yup';
import { useNavigate, Link } from 'react-router-dom';
import { addUser } from '../services/ApiService';
const Register = () => {
  const navigate = useNavigate();
  const initialValues = {
    name: "",
    email: "",
    password: "",
  };
  const validationSchema = Yup.object({
    name: Yup.string().required('Required'),
    email: Yup.string().email('Invalid email format').required('Required'),
    password: Yup.string().min(6, 'Password must be at least 6
characters').required('Required'),
  });
  const onSubmit = (values) => {
    addUser({ ...values, role: 'user' }).then(() => {

```

```

    alert('Registration successful! Please login.');
```

```

    navigate('/login');
```

```

  });
};
return (
  <div className="container mt-5">
    <div className="row justify-content-center">
      <div className="col-md-6">
        <div className="card">
          <div className="card-header"><h3>Register</h3></div>
          <div className="card-body">
            <Formik initialValues={initialValues} validationSchema={validationSchema}
onSubmit={onSubmit}>
              <Form>
                <div className="mb-3">
                  <label className="form-label">Name</label>
                  <Field name="name" type="text" className="form-control" />
                  <ErrorMessage name="name" component="div" className="text-danger" />
                </div>
                <div className="mb-3">
                  <label className="form-label">Email</label>
                  <Field name="email" type="email" className="form-control" />
                  <ErrorMessage name="email" component="div" className="text-danger" />
                </div>
                <div className="mb-3">
                  <label className="form-label">Password</label>
                  <Field name="password" type="password" className="form-control" />
                  <ErrorMessage name="password" component="div" className="text-danger"
/>
                </div>
                <button type="submit" className="btn btn-primary w-100">Register</button>
                <p className="mt-3">Already have an account? <Link to="/login">Login
here</Link></p>
              </Form>
            </Formik>
          </div>
        </div>
      </div>
    </div>
  );
};
export default Register;
```

```

// FILE: src/pages/Login.jsx
import React from 'react';
```

```

import { Formik, Form, Field, ErrorMessage } from 'formik';
import * as Yup from 'yup';
import { useNavigate, Link } from 'react-router-dom';
import { getUsers } from '../services/ApiService';
const Login = () => {
  const navigate = useNavigate();
  const initialValues = {
    email: "",
    password: "",
  };
  const validationSchema = Yup.object({
    email: Yup.string().email('Invalid email format').required('Required'),
    password: Yup.string().required('Required'),
  });
  const onSubmit = (values, { setFieldError }) => {
    getUsers().then((response) => {
      const user = response.data.find(
        (u) => u.email === values.email && u.password === values.password
      );
      if (user) {
        localStorage.setItem('user', JSON.stringify(user));
        if (user.role === 'admin') {
          navigate('/admin');
        } else {
          navigate('/dashboard');
        }
      } else {
        setFieldError('password', 'Invalid email or password');
      }
    });
  };
  return (
    <div className="container mt-5">
      <div className="row justify-content-center">
        <div className="col-md-6">
          <div className="card">
            <div className="card-header"><h3>Login</h3></div>
            <div className="card-body">
              <Formik initialValues={initialValues} validationSchema={validationSchema}
onSubmit={onSubmit}>
                <Form>
                  <div className="mb-3">
                    <label className="form-label">Email</label>
                    <Field name="email" type="email" className="form-control" />
                    <ErrorMessage name="email" component="div" className="text-
danger" />

```

```

        </div>
        <div className="mb-3">
          <label className="form-label">Password</label>
          <Field name="password" type="password" className="form-control"
/>
          <ErrorMessage name="password" component="div" className="text-
danger" />
        </div>
        <button type="submit" className="btn btn-primary w-
100">Login</button>
        <p className="mt-3">Don't have an account? <Link
to="/register">Register here</Link></p>
      </Form>
    </Formik>
  </div>
</div>
</div>
</div>
</div>
);
};
export default Login;

```

```

// FILE: src/pages/AdminDashboard.jsx
import React, { useState, useEffect } from 'react';
import { Formik, Form, Field, ErrorMessage } from 'formik';
import * as Yup from 'yup';
import AdminNavbar from '../components/AdminNavbar';
import { getTurfs, addTurf, updateTurf, deleteTurf } from '../services/ApiService';
const AdminDashboard = () => {
  const [turfs, setTurfs] = useState([]);
  const [editingTurf, setEditingTurf] = useState(null);
  useEffect(() => {
    fetchTurfs();
  }, []);
  const fetchTurfs = () => {
    getTurfs().then(response => setTurfs(response.data));
  };
  const initialValues = {
    title: "",
    location: "",
    price: "",
    description: "",
  };
  const validationSchema = Yup.object({
    title: Yup.string().required('Required'),

```

```

location: Yup.string().required('Required'),
price: Yup.number().positive('Must be a positive number').required('Required'),
description: Yup.string().required('Required'),
});
const handleSubmit = (values, { resetForm }) => {
  if (editingTurf) {
    updateTurf(editingTurf.id, values).then(() => {
      fetchTurfs();
      setEditingTurf(null);
      resetForm();
    });
  } else {
    addTurf(values).then(() => {
      fetchTurfs();
      resetForm();
    });
  }
};
const handleEdit = (turf) => {
  setEditingTurf(turf);
};
const handleDelete = (id) => {
  deleteTurf(id).then(() => fetchTurfs());
};
return (
  <
    <AdminNavbar />
    <div className="container mt-4">
      <h3>{editingTurf ? 'Edit Turf' : 'Add New Turf'}</h3>
      <Formik
        initialValues={editingTurf || initialValues}
        validationSchema={validationSchema}
        onSubmit={handleSubmit}
        enableReinitialize
      >
        <Form>
          <div className="row">
            <div className="col-md-6 mb-3">
              <Field name="title" type="text" className="form-control" placeholder="Title" />
              <ErrorMessage name="title" component="div" className="text-danger" />
            </div>
            <div className="col-md-6 mb-3">
              <Field name="location" type="text" className="form-control"
placeholder="Location" />
              <ErrorMessage name="location" component="div" className="text-danger" />
            </div>
          </div>
        </Form>
      </Formik>
    </div>
  </

```



```

        <div className="col-md-6 mb-3">
          <Field name="price" type="number" className="form-control"
placeholder="Price" />
          <ErrorMessage name="price" component="div" className="text-danger" />
        </div>
        <div className="col-md-6 mb-3">
          <Field name="description" as="textarea" className="form-control"
placeholder="Description" />
          <ErrorMessage name="description" component="div" className="text-danger" />
        </div>
        </div>
        <button type="submit" className="btn btn-primary">{editingTurf ? 'Update Turf' :
'Add Turf'}</button>
      </Form>
    </Formik>
    <hr />
    <h3>Manage Turfs</h3>
    <table className="table table-striped mt-3">
      <thead>
        <tr>
          <th>Title</th>
          <th>Location</th>
          <th>Price</th>
          <th>Actions</th>
        </tr>
      </thead>
      <tbody>
        {turfs.map(turf => (
          <tr key={turf.id}>
            <td>{turf.title}</td>
            <td>{turf.location}</td>
            <td>₹ {turf.price}</td>
            <td>
              <button className="btn btn-sm btn-warning me-2" onClick={() =>
handleEdit(turf)}>Edit</button>
              <button className="btn btn-sm btn-danger" onClick={() =>
handleDelete(turf.id)}>Delete</button>
            </td>
          </tr>
        ))}
      </tbody>
    </table>
  </div>
</>
);
};

```

```

export default AdminDashboard;

// FILE: src/pages/UserDashboard.jsx
import React, { useState, useEffect } from 'react';
import UserNavbar from '../components/UserNavbar';
import TurfCard from '../components/TurfCard';
import { getTurfs, addToCart } from '../services/ApiService';
const UserDashboard = () => {
  const [turfs, setTurfs] = useState([]);
  useEffect(() => {
    getTurfs().then(response => {
      setTurfs(response.data);
    });
  }, []);
  const handleAddToCart = (turf) => {
    const user = JSON.parse(localStorage.getItem('user'));
    const cartItem = {
      userId: user.id,
      turfId: turf.id,
      ...turf
    };
    addToCart(cartItem).then(() => {
      alert(`${turf.title} added to cart!`);
    });
  };
  return (
    <
      <UserNavbar />
      <div className="container mt-4">
        <h3>Browse Turfs</h3>
        <div className="row row-cols-1 row-cols-md-3 g-4 mt-2">
          {turfs.map(turf => (
            <div className="col" key={turf.id}>
              <TurfCard turf={turf} onAddToCart={handleAddToCart} />
            </div>
          ))}
        </div>
      </div>
    </>
  );
};
export default UserDashboard;

```

```

// FILE: src/pages/Cart.jsx
import React, { useState, useEffect } from 'react';
import { useNavigate } from 'react-router-dom';

```

```

import UserNavbar from '../components/UserNavbar';
import { getCartItems, removeFromCart, addBooking, clearCart } from
'../services/ApiService';
const Cart = () => {
  const [cartItems, setCartItems] = useState([]);
  const navigate = useNavigate();
  const user = JSON.parse(localStorage.getItem('user'));
  useEffect(() => {
    fetchCartItems();
  }, []);
  const fetchCartItems = () => {
    getCartItems().then(response => {
      const userCartItems = response.data.filter(item => item.userId === user.id);
      setCartItems(userCartItems);
    });
  };
  const handleRemove = (id) => {
    removeFromCart(id).then(() => {
      fetchCartItems();
    });
  };
  const handleCheckout = () => {
    const booking = {
      userId: user.id,
      userEmail: user.email,
      items: cartItems,
      bookingDate: new Date().toISOString()
    };
    addBooking(booking).then(() => {
      clearCart().then(() => {
        alert('Checkout successful! Your booking is confirmed.');
```

navigate('/dashboard');

```

      });
    });
  };
  return (
    <
      <UserNavbar />
      <div className="container mt-4">
        <h3>Your Cart</h3>
        {cartItems.length === 0 ? (
          <p>Your cart is empty.</p>
        ) : (
          <
            <ul className="list-group">
              {cartItems.map(item => (

```

```

        <li key={item.id} className="list-group-item d-flex justify-content-between align-items-center">
          <div>
            <h5>{item.title}</h5>
            <p>Price: ₹ {item.price}</p>
          </div>
          <button className="btn btn-danger" onClick={() =>
handleRemove(item.id)}>Remove</button>
        </li>
      ))}
    </ul>
    <button className="btn btn-success mt-3" onClick={handleCheckout}>Proceed to
Checkout</button>
  </>
  )}
</div>
</>
);
};
export default Cart;

```

```

// FILE: src/App.jsx
import React from 'react';
import { BrowserRouter as Router, Routes, Route, Navigate } from 'react-router-dom';
import 'bootstrap/dist/css/bootstrap.min.css';
import Welcome from './pages/Welcome';
import Login from './pages/Login';
import Register from './pages/Register';
import AdminDashboard from './pages/AdminDashboard';
import UserDashboard from './pages/UserDashboard';
import Cart from './pages/Cart';
const AdminProtectedRoute = ({ children }) => {
  const user = JSON.parse(localStorage.getItem('user'));
  return user && user.role === 'admin' ? children : <Navigate to="/login" />;
};
const UserProtectedRoute = ({ children }) => {
  const user = JSON.parse(localStorage.getItem('user'));
  return user && user.role === 'user' ? children : <Navigate to="/login" />;
};
function App() {
  return (
    <Router>
      <Routes>
        <Route path="/" element={<Welcome />} />
        <Route path="/login" element={<Login />} />
        <Route path="/register" element={<Register />} />

```

```
    <Route path="/admin" element={<AdminProtectedRoute><AdminDashboard
/></AdminProtectedRoute>} />
    <Route path="/dashboard" element={<UserProtectedRoute><UserDashboard
/></UserProtectedRoute>} />
    <Route path="/cart" element={<UserProtectedRoute><Cart /></UserProtectedRoute>}
/>
  </Routes>
</Router>
);
}
export default App;
```