

CÔNG NGHỆ PHẦN MỀM MỚI (MTSE431179)

Hướng dẫn FullStack với Express.js – ReactJS -Mongoonse

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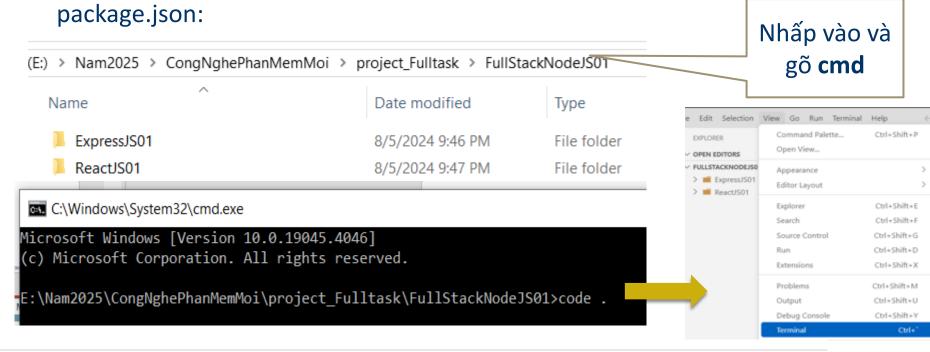


Nội dung bài học

- Phần 1: Hướng dẫn xây dựng BackEnd API với ExpressJS
- Phần 2: Hướng dẫn xây dựng FrontEnd với ReactJS

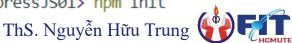
Traong dan ranstack voi Express.js Reac

Bước 1: Cài đặt node.js (>18.), MongoDB compass, tạo thư mục FullStackNodeJS01\ExpressJS01 và FullStackNodeJS01\ReactJS01. Mở thư mục FullStackNodeJS01 trong cửa sổ Explorer -> rồi lên thanh address gố cmd -> rồi gố code . để mở VSCode với thư mục đó. Rồi vào menu view->chọn Terminal. Rồi gố cd ExpressJS01 -> gố npm init để tạo file package.json:



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SQL CONSOLE

PS E:\Nam2025\CongNghePhanMemMoi\project_Fulltask\FullStackNodeJS01\ExpressJS01> npm init



PS <u>E:\Nam2025\CongNghePhanMemMoi\project_Fulltask\FullStackNodeJS01</u>> cd ExpressJS01

Bước 1: Các thông tin ban đầu của file ExpressJS01\package.json

```
Press ^C at any time to quit.
package name: (expressjs01)
version: (1.0.0)
description: Backend API for FullStack
entry point: (index.js) server.js
test command:
git repository:
keywords: nodejs, expressjs, reactjs
author: Nguyễn Hữu Trung
license: (ISC)
About to write to E:\Nam2025\CongNghePhanMemMoi\project Fulltask\FullStackNodeJS01\ExpressJS01\package.json:
  "name": "expressjs01",
  "version": "1.0.0",
  "description": "Backend API for FullStack",
  "main": "server.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "keywords": [
    "nodejs",
    "express;s",
    "reactis"
  "author": "Nguyễn Hữu Trung",
  "license": "ISC"
```

Bước 2: Cài đặt Express.js, Mongoose cùng các thư viện cần thiết sau trong package.json như sau:

```
    □□ package.json ×
ExpressJS01 > package.json > {} scripts > act start
          "name": "expressjs01",
          "version": "1.0.0",
   3
          "description": "Backend API for FullStack",
          "main": "server.js",
          Debug
          "scripts": {
            "test": "echo \"Error: no test specified\" && exit 1",
   7
   8
            "dev": "nodemon ./src/server.js",
            "start": "nodemon ./src/server.js"
   9
  10
          "keywords": [
  11
  12
            "nodejs",
            "expressis",
  13
            "reactis"
  14
  15
  16
          "author": "Nguyễn Hữu Trung",
  17
          "license": "ISC",
          "dependencies": {
  18
            "bcrypt": "^5.1.1",
  19
  20
            "cors": "^2.8.5",
            "dotenv": "^16.4.5",
  21
  22
            "eis": "^3.1.10",
            "express": "^4.19.2",
  23
            "jsonwebtoken": "^9.0.2",
  24
            "mongoose": "^8.5.2"
  25
  26
          "devDependencies": {
  27
            "@babel/core": "^7.25.2",
  28
  29
            "@babel/node": "^7.25.0",
            "@babel/preset-env": "^7.25.3",
  30
            "nodemon": "^3.1.4"
  31
  32
```

npm install --save express mongoose dotenv ejs cors bcrypt jsonwebtoken

npm install --save-dev

@babel/core @babel/node
@babel/preset-env nodemon

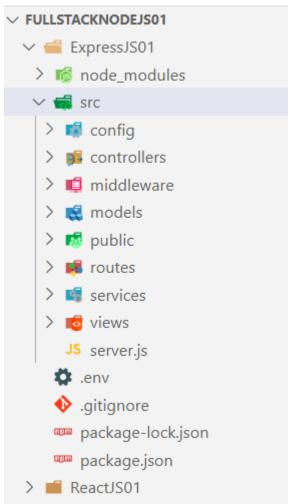
```
Thêm 02 dòng này vào thẻ "script"
"scripts": {
    "dev": "nodemon ./src/server.js",
    "start": "nodemon ./src/server.js"
},
```



Bước 3: Tạo một số file và cấu trúc thư mục như sau:



- npm i --save-dev @types/cors
- npm i --save-dev @types/express



□ Bước 4: Tạo thư mục src\config và tạo các file sau:

```
✓ ✓ src

✓ 🚅 config

JS database.js

JS viewEngine.js
```

```
JS viewEngine.js X
ExpressJS01 > src > config > JS viewEngine.js > ...
       const path = require('path');
       const express = require('express');
       const configViewEngine = (app) => {
   4
            app.set('views', path.join('./src', 'views'));
   5
            app.set('view engine', 'ejs');
   6
   7
            //config static files: image/css/js
   8
            app.use(express.static(path.join('./src', 'public')));
  10
  11
       module.exports = configViewEngine;
  12
```

□ Bước 4: Tạo thư mục src\config và tạo các file sau:

```
JS database.js X
ExpressJS01 > src > config > JS database.js > ...
       require('dotenv').config();
       const mongoose = require('mongoose');
   2
   3
       const dbState = [{
   4
           value: 0,
   5
           label: "Disconnected"
   6
   8
           value: 1,
            label: "Connected"
  10
  11
  12
           value: 2,
  13
           label: "Connecting"
  14
  15
  16
           value: 3,
  17
            label: "Disconnecting"
  18
  19
       }];
  20
  21
       const connection = async () => {
  22
            await mongoose.connect(process.env.MONGO_DB_URL);
  23
            const state = Number(mongoose.connection.readyState);
  24
            console.log(dbState.find(f => f.value === state).label, "to database"); // connected to db
  25
  26
```

module.exports = connection;

27

```
✓ src✓ src✓ src✓ sconfigJS database.jsJS viewEngine.js
```

Bước 5: Cấu hình server.js và tạo cấu trúc dự án như sau:

```
EXPLORER
                               JS server.js

✓ OPEN EDITORS

                               ExpressJS01 > src > JS server.js > ...
                                      require('dotenv').config();
  X JS server.js ExpressJS01\src
                                  2
                                      //import các nguồn cần dùng

✓ FULLSTACKNODEJS01

                                  3
                                      const express = require('express'); //commonjs
 4
                                      const configViewEngine = require('./config/viewEngine');
  > node_modules
                                  5
                                      const apiRoutes = require('./routes/api');
  const connection = require('./config/database');
                                  6
   7
                                      const { getHomepage } = require('./controllers/homeController');
                                      const cors = require('cors');
                                  8
      JS database.js
                                      const app = express(); //cấu hình app là express
                                  9
      JS viewEngine.js
                                      //cấu hình port, nếu tìm thấy port trong env, không thì trả về 8888
                                 10
   > ss controllers
                                      const port = process.env.PORT | 8888;
                                 11
   middleware
                                      app.use(cors());//config cors
                                 12
   > M models
                                      app.use(express.json()) // //config req.body cho json
                                 13
   > public
                                      app.use(express.urlencoded({ extended: true })) // for form data
                                 14
   > proutes
                                      configViewEngine(app);//config template engine
                                 15
                                      //config route cho view ejs
                                 16
   > services
                                 17
                                      const webAPI = express.Router();
   > is views
                                      webAPI.get("/", getHomepage);
                                 18
     JS server.js
                                      app.use('/', webAPI);
                                 19
    .env
                                      //khai báo route cho API
                                 20
    .gitignore
                                      app.use('/v1/api/', apiRoutes);
                                 21
    package-lock.json
                                 22
                                       (async () => {
                                 23
                                          try {
    package.json
                                 24
                                               //kết nối database using mongoose
 ReactJS01
                                 25
                                               await connection();
                                               //lång nghe port trong env
                                 26
                                               app.listen(port, () => {
                                 27
                                                   console.log(`Backend Nodejs App listening on port ${port}`)
                                 28
                                 29
                                 30
                                           } catch (error) {
                                               console.log(">>> Error connect to DB: ", error)
                                 31
                                 32
                                 33
                                      })()
                                 34
```

□ Bước 6: Tạo file api.js trong thư mục src\routes như sau:

```
JS api.js
            \times
ExpressJS01 > src > routes > JS api.js > ...
       const express = require('express');
   1
       const { createUser, handleLogin, getUser,
   2
   3
            getAccount
   4
       } = require('../controllers/userController');
       const auth = require('../middleware/auth');
   5
       const delay = require('../middleware/delay');
   6
   7
       const routerAPI = express.Router();
   8
   9
       routerAPI.all("*", auth);
  10
  11
       routerAPI.get("/", (req, res) => {
  12
  13
            return res.status(200).json("Hello world api")
       })
  14
  15
  16
       routerAPI.post("/register", createUser);
       routerAPI.post("/login", handleLogin);
  17
  18
       routerAPI.get("/user", getUser);
  19
       routerAPI.get("/account", delay, getAccount);
  20
  21
       module.exports = routerAPI; //export default
  22
```

Bước 7: Tạo file user.js trong thư mục src\models như sau:

```
JS user.js
            \times
ExpressJS01 > src > models > JS user.js > ...
        const mongoose = require('mongoose');
   1
   2
        const userSchema = new mongoose.Schema({
            name: String,
   4
            email: String,
            password: String,
   6
           role: String,
   8
        });
   9
        const User = mongoose.model('user', userSchema);
  10
  11
       module.exports = User;
  12
```

31

Hướng dẫn Fullstack với Express.js – ReactJS - Mongoonse

Bước 8: Tạo file userService.js trong thư mục src\services để xử lý logic như sau:

const loginService = async (email1, password) => {

```
34
                                                                                                          try {
userService.js X
                                                                                                 35
                                                                                                             //fetch user by email
                                                                                                 36
                                                                                                             const user = await User.findOne({ email: email1 });
FullStackNodeJS01 > ExpressJS01 > src > services > Ls userService.js > ...
                                                                                                 37
                                                                                                             if (user) {
        require("dotenv").config();
                                                                                                 38
                                                                                                                 //compare password
        const User = require("../models/user");
                                                                                                 39
                                                                                                                 const isMatchPassword = await bcrypt.compare(password, user.password);
        const bcrypt = require('bcrypt');
   3
                                                                                                 40
                                                                                                                 if (!isMatchPassword) {
        const jwt = require("jsonwebtoken");
                                                                                                                     return {
                                                                                                 41
        const saltRounds = 10;
                                                                                                 42
                                                                                                                        EC: 2,
                                                                                                 43
                                                                                                                        EM: "Email/Password không hợp lê"
   7
        const createUserService = async (name, email, password) => {
                                                                                                 44
   8
             try {
                                                                                                                   else
                                                                                                 45
   9
                 //check user exist
                                                                                                                     //create an access token
                                                                                                 46
                 const user = await User.findOne({ email });
  10
                                                                                                                     const payload = {
                                                                                                 47
                 if (user) {
  11
                                                                                                                        email: user.email,
                      console.log(`>>> user exist, chon 1 email khác: ${email}`);
  12
                                                                                                 49
                                                                                                                        name: user.name
  13
                      return null;
                                                                                                 50
  14
                                                                                                 51
  15
                                                                                                 52
                                                                                                                     const access token = jwt.sign(
                 //hash user password
  16
                                                                                                                        payload,
                                                                                                 53
                 const hashPassword = await bcrypt.hash(password, saltRounds)
  17
                                                                                                 54
                                                                                                                        process.env.JWT SECRET,
  18
                 //save user to database
                                                                                                 55
                 let result = await User.create({
  19
                                                                                                                            expiresIn: process.env.JWT EXPIRE
                                                                                                 56
  20
                      name: name,
                                                                                                 57
                      email: email,
  21
                                                                                                 58
                      password: hashPassword,
  22
                                                                                                 59
                                                                                                                     return {
                      role: "User"
  23
                                                                                                 60
                                                                                                                        EC: 0,
  24
                                                                                                                        access token,
                                                                                                 61
  25
                 return result;
                                                                                                 62
                                                                                                                        user:
                                                                                                                            email: user.email,
                                                                                                 63
             } catch (error) {
  27
                                                                                                 64
                                                                                                                            name: user.name
                 console.log(error);
  28
                 return null;
  29
                                                                                                 66
  30
```

Bước 8: Tạo file userService.js trong thư mục src\services đế xử lý logic như sau:

```
} else {
68
69
                  return {
                      EC: 1,
70
                       EM: "Email/Password không hợp lệ"
71
72
73
          } catch (error) {
74
              console.log(error);
75
              return null;
76
77
78
79
     const getUserService = async () => {
80
          try {
81
82
              let result = await User.find({}).select("-password");
83
              return result;
84
85
          } catch (error) {
86
              console.log(error);
87
              return null;
88
89
90
     module.exports = {
91
          createUserService, loginService, getUserService
92
93
```

Bước 9: Tạo file homeController.js trong thư mục src\controllers và file src\views\index.ejsnhư sau:

```
LexpressJS01 > src > controllers > JS homeController.js > [@] < unknown>

1
2
3     const getHomepage = async (req, res) => {
4         return res.render('index.ejs')
5     }
6
7     module.exports = {
8         getHomepage,
9
10
}
```

 Bước 9: Tạo file userController.js trong thư mục src\controllers như sau:

```
JS userController.js ×
ExpressJS01 > src > controllers > JS userController.js > ...
       const { createUserService, loginService, getUserService } = require("../services/userService");
  2
  3
       const createUser = async (req, res) => {
           const { name, email, password } = req.body;
  4
           const data = await createUserService(name, email, password);
  5
  6
           return res.status(200).json(data)
  7
  8
       const handleLogin = async (req, res) => {
  9
 10
           const { email, password } = req.body;
           const data = await loginService(email, password);
 11
 12
 13
           return res.status(200).json(data)
 14
 15
 16
       const getUser = async (req, res) => {
           const data = await getUserService();
 17
           return res.status(200).json(data)
 18
 19
 20
       const getAccount = async (req, res) => {
 21
 22
           return res.status(200).json(req.user)
 23
 24
 25
       module.exports = {
 26
           createUser, handleLogin, getUser, getAccount
 27
 28
 29
```

34 35

module.exports = auth;

Hướng dẫn Fullstack với Express.js – ReactJS - Mongoonse

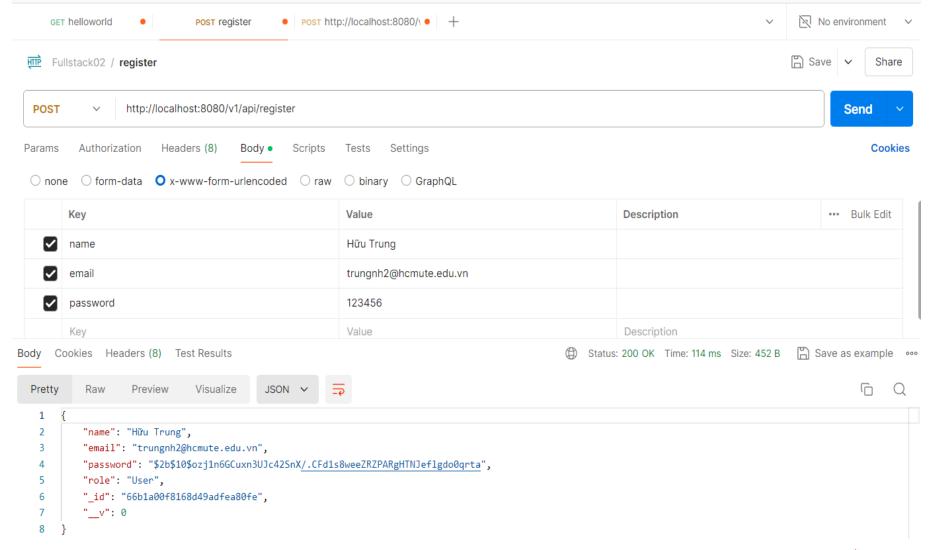
Bước 10: Tạo file auth.js và delay.js trong thư mục src\middleware để xử lý token như sau:

```
JS auth.js
                                                                                     JS delay.js
                                                                                                   Χ
ExpressJS01 > src > middleware > JS auth.js > ...
       require("dotenv").config();
                                                                                     ExpressJS01 > src > middleware > JS delay.js > ...
       const jwt = require("jsonwebtoken");
       const auth = (req, res, next) => {
           const white_lists = ["/", "/register", "/login"];
  5
                                                                                              const delay = (req, res, next) => {
           if (white_lists.find(item => '/v1/api' + item === req.originalUrl)) {
  6
                                                                                                   setTimeout(() => {
  8
           } else {
                                                                                                        if (req.headers.authorization) {
              if (req?.headers?.authorization?.split(' ')?.[1]) {
  9
                  const token = req.headers.authorization.split(' ')[1];
 10
                                                                                                             const token = req.headers.authorization.split(' ')[1];
 11
 12
                  //verify token
                                                                                                             console.log(">>> check token: ", token)
 13
                      const decoded = jwt.verify(token, process.env.JWT SECRET);
 14
 15
                      req.user = {
                          email: decoded.email,
 16
 17
                          name: decoded.name,
                                                                                        9
                          createdBy: "hoidanit"
 18
 19
                                                                                       10
                                                                                                        next()
                      console.log(">>> check token: ", decoded)
 20
                                                                                                   }, 3000)
                                                                                       11
 21
                      next();
                    catch (error) {
 22
                                                                                       12
                      return res.status(401).json({
 23
                          message: "Token bi hết hạn/hoặc không hợp lê"
 24
                                                                                       13
 25
                      })
                                                                                              module.exports = delay;
 26
                                                                                       14
 27
               } else {
 28
 29
                  return res.status(401).json({
                      message: "Bạn chưa truyền Access Token ở header/Hoặc token bị hết hạn"
 30
 31
 32
 33
```

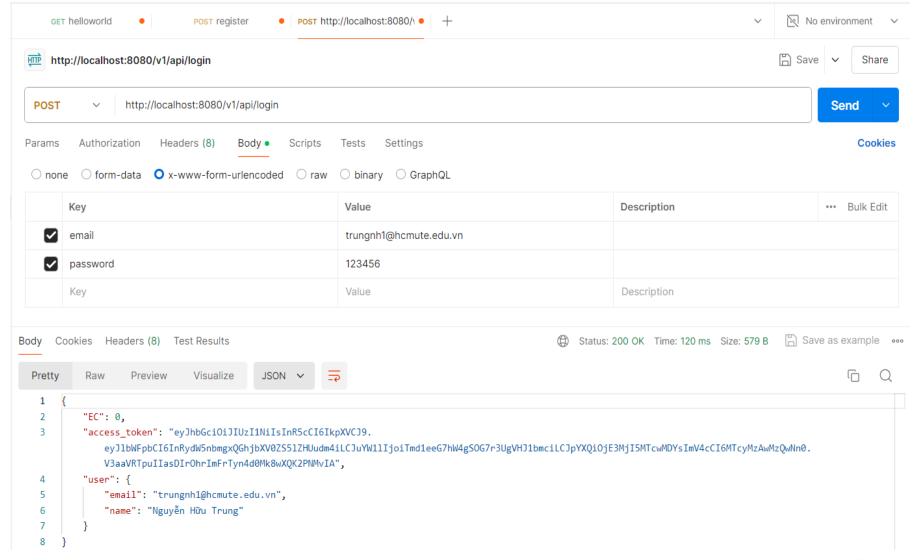
□ Bước 11: Chạy dự án: npm start

```
PROBLEMS
            OUTPUT
                      DEBUG CONSOLE
                                     TERMINAL
                                                PORTS
                                                        SQL CONSOLE
PS E:\Nam2025\CongNghePhanMemMoi\project Fulltask\FullStackNodeJS01\ExpressJS01> npm start
 > expressjs01@1.0.0 start
 > nodemon ./src/server.js
 [nodemon] 3.1.4
 [nodemon] to restart at any time, enter `rs`
 [nodemon] watching path(s): *.*
 [nodemon] watching extensions: js,mjs,cjs,json
 [nodemon] starting `node ./src/server.js`
 Connected to database
 Backend Nodejs App listening on port 8080
```

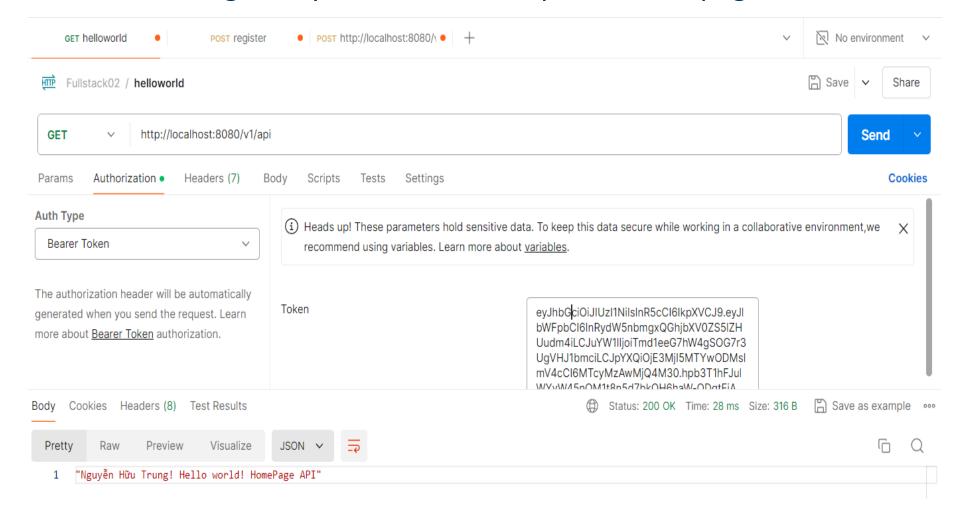
Bước 12: Test API bằng postman, register user



Bước 12: Test API bằng postman, login user



Bước 12: Test API bằng postman, homepage, sau khi login thành công thì lấy token đưa vào api của homepage để test



- Bước 13: Xây dựng FrontEnd với ReactJS. Tại VSCode chọn Terminal -> New Terminal. Rồi gõ cd ReactJS01 -> gõ npm create vite@latest để tạo project với ViteJS:
 - Đặt tên project: reactjs01
 - Chọn React để cài React và React-dom và chọn Javascript + JWC hoặc
 TypeScript + JWC
 - Chuyển vào thư mục project: cd reactjs01
 - Cài đặt module: npm install
 - Chạy project: npm run dev
 - Biên dịch và deploy thì dùng lệnh build: npm run build



32

Hướng dẫn Fullstack với Express.js – ReactJS - Mongoonse

Bước 14: Cài đặt các thư viện cần thiết sau trong package.json như sau:

```
package.json X
ReactJS01 > package.json > {} scripts
         "name": "reactjs01",
         "private": true,
         "version": "0.0.0",
         "type": "module",
          Debug
         "scripts": {
           "dev": "vite",
           "start": "vite",
           "build": "vite build",
           "lint": "eslint . --ext js,jsx --report-unused-disable-directives --max-warnings 0",
  10
           "preview": "vite preview"
  11
  12
          "dependencies": {
  13
           "@ant-design/icons": "^5.4.0",
  14
           "antd": "^5.20.0",
  15
            "axios": "^1.7.3",
  16
            "react": "^18.3.1",
  17
            "react-dom": "^18.3.1",
  18
            "react-router-dom": "^6.26.0"
  19
  20
         "devDependencies": {
  21
           "@types/react": "^18.3.3",
  22
           "@types/react-dom": "^18.3.0",
  23
            "@vitejs/plugin-react-swc": "^3.5.0",
  24
            "eslint": "^8.57.0",
  25
            "eslint-plugin-react": "^7.34.3",
  26
           "eslint-plugin-react-hooks": "^4.6.2",
  27
  28
            "eslint-plugin-react-refresh": "^0.4.7",
            "vite": "^5.3.4"
  29
  30
  31
```

npm install --save reactrouter-dom axios antd
@ant-design/icons

```
Thêm 02 dòng này vào thẻ "script"
"scripts": {
    "start": "vite",
},
```

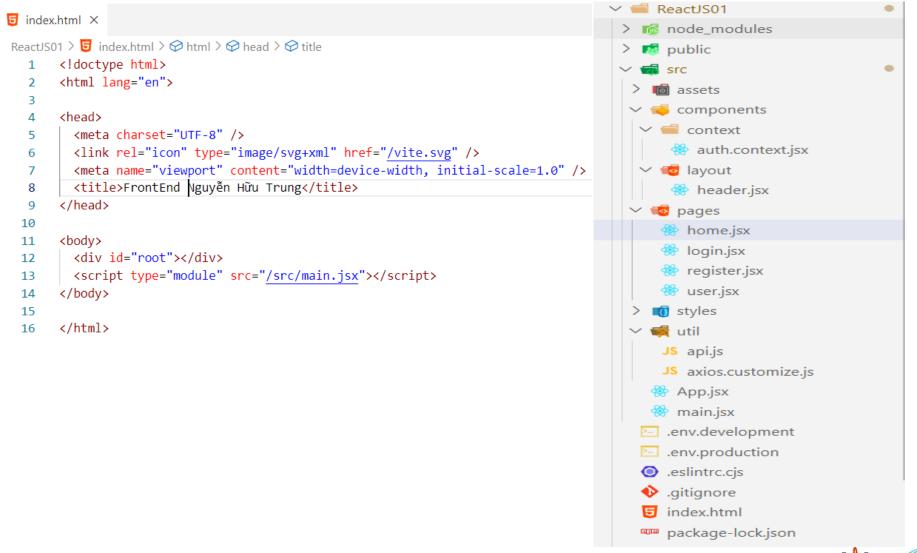
24

Hướng dẫn Fullstack với Express.js – ReactJS - Mongoonse

Bước 15: Một số file và cấu trúc thư mục như sau:

```
▼ vite.config.js ×
                                                                                                         .gitignore X
ReactJS01 > ▼ vite.config.js > ...
                                                                                                          ReactJS01 > 0 .gitignore
        import { defineConfig } from 'vite'
                                                                                                                  # Logs
        import react from '@vitejs/plugin-react-swc'
                                                                                                                  logs
   3
                                                                                                                  *.log
        // https://vitejs.dev/config/
   4
                                                                                                                  npm-debug.log*
        export default defineConfig({
                                                                                                                  varn-debug.log*
           plugins: [react()],
                                                                                                                  yarn-error.log*
   7
                                                                                                                  pnpm-debug.log*
                                                                                                                  lerna-debug.log*
                                                                                                             9
eslintrc.cjs X
                                                                                                                  node modules
                                                                                                            10
ReactJS01 > ② .eslintrc.cjs > ...
      module.exports = {
                                                                                                                  dist
                                                                                                            11
  2
        root: true,
                                                                                                                  dist-ssr
                                                  E .env.development X
                                                                                                            12
  3
        env: { browser: true, es2020: true },
                                                                                                            13
                                                                                                                  *.local
        extends: [
                                                   ReactJS01 > - .env.development
  5
          'eslint:recommended',
                                                                                                            14
                                                           VITE BACKEND URL=http://localhost:8080
          'plugin:react/recommended',
  6
                                                                                                            15
                                                                                                                  # Editor directories and files
  7
          'plugin:react/jsx-runtime',
                                                                                                                  .vscode/*
                                                                                                           16
  8
          'plugin:react-hooks/recommended',
  9
                                                                                                                  !.vscode/extensions.json
                                                                                                           17
        ignorePatterns: ['dist', '.eslintrc.cjs'],
 10
                                                                                                                  .idea
                                                                                                           18
        parserOptions: { ecmaVersion: 'latest', sourceType: 'module' },
 11
                                                                                                                  .DS Store
        settings: { react: { version: '18.2' } },
                                                                                                            19
 12
        plugins: ['react-refresh'],
 13
                                                                                                                  *.suo
                                                                                                            20
 14
        rules: {
                                                                                                                  *.ntvs*
                                                                                                            21
 15
          'react/jsx-no-target-blank': 'off',
                                                                                                                  *.njsproj
          'no-unused-vars': 'off',
                                                                                                            22
 16
          'no-debugger': 'off',
 17
                                                                                                                  *.sln
                                                                                                            23
 18
          'react/prop-types': "off",
                                                                                                                  *.sw?
                                                                                                            24
          'react-refresh/only-export-components': [
 19
 20
 21
            { allowConstantExport: true },
 22
 23
                                                                                                        ThS. Nguyễn Hữu Trung
```

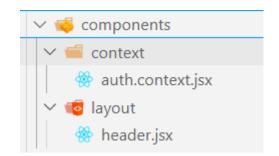
Bước 15: Một số file và cấu trúc thư mục như sau:



Bước 16: Tạo thư mục src\components\context và tạo các file

sau:

```
ReactJS01 > src > components > context > ∰ auth.context.jsx > [∅] AuthWrapper
       import { createContext, useState } from 'react';
   2
   3
       export const AuthContext = createContext({
           isAuthenticated: false,
   4
   5
           user: {
                email: "",
   7
                name:
           appLoading: true,
 10
       });
 11
       export const AuthWrapper = (props) => {
 12
 13
           const [auth, setAuth] = useState({
                isAuthenticated: false,
 14
 15
                user: {
                    email: ""
 16
 17
                    name:
 18
           });
 19
 20
           const [appLoading, setAppLoading] = useState(true);
 21
 22
 23
           return (
                <AuthContext.Provider value={{</pre>
 24
                    auth, setAuth, appLoading, setAppLoading
 25
 26
                }}>
 27
                    {props.children}
                </AuthContext.Provider>
 28
           );
 29
  30
```



Bước 16: Tạo thư muc src\components\layout và tạo các file sau:

```
auth.context.jsx
                                                                                                                                  👨 layout
🏶 header.jsx 🛛 🗙
ReactJS01 > src > components > layout > ∰ header.jsx > ...
                                                                                                                                    header.jsx
       import React, { useContext, useState } from 'react';
       import { UsergroupAddOutlined, HomeOutlined, SettingOutlined } from '@ant-design/icons';
  2
       import { Menu } from 'antd';
       import { Link, useNavigate } from 'react-router-dom';
                                                                        33
                                                                                                   setAuth({
       import { AuthContext } from '../context/auth.context';
                                                                        34
                                                                                                      isAuthenticated: false,
  6
                                                                        35
                                                                                                      user: {
  7
       const Header = () => {
                                                                        36
                                                                                                          email: "",
  8
                                                                        37
                                                                                                          name: ""
           const navigate = useNavigate();
  9
                                                                        38
           const { auth, setAuth } = useContext(AuthContext);
  10
                                                                        39
           console.log(">>> check auth: ", auth)
                                                                                                   navigate("/");
 11
            const items = [
                                                                                               }}>Đăng xuất</span>,
 12
                                                                        41
                                                                                               key: 'logout',
 13
                                                                        42
                    label: <Link to={"/"}>Home Page</Link>,
                                                                        43
                                                                                           }]:[
 14
                                                                        44
  15
                    key: 'home',
                                                                                                  label: <Link to={"/login"}>Đăng nhập</Link>,
                    icon: <HomeOutlined />,
                                                                        45
 16
                                                                        46
                                                                                                   key: 'login',
 17
                                                                        47
 18
                ...(auth.isAuthenticated ? [{
                                                                                           ]),
                    label: <Link to={"/user"}>Users</Link>,
                                                                        48
  19
                                                                        49
                    key: 'user',
  20
                    icon: <UsergroupAddOutlined />,
                                                                        50
  21
                }] : []),
                                                                        51
  22
                                                                                const [current, setCurrent] = useState('mail');
                                                                        52
  23
                                                                                const onClick = (e) => {
                                                                        53
  24
                    label: `Welcome ${auth?.user?.email ?? ""}`,
                                                                        54
                                                                                    console.log('click ', e);
  25
                                                                        55
                                                                                    setCurrent(e.key);
                    key: 'SubMenu',
  26
                                                                        56
                    icon: <SettingOutlined />,
  27
                                                                        57
                                                                                return <Menu onClick={onClick} selectedKeys={[current]} mode="horizontal" items={items} />;
                    children: [
  28
                                                                        58
                         ...(auth.isAuthenticated ? [{
  29
                                                                             export default Header;
                            label: <span onClick={() => {
  30
  31
                                 localStorage.clear("access token");
  32
                                 setCurrent("home");
                                                                                                                   ThS. Nguyễn Hữu Trung
```

components

context

Bước 17: Tạo thư mục src\util và tạo các file sau:

```
🜃 util
 JS api.js
 JS axios.customize.js
```

```
JS api.js
               \times
 ReactJS01 > src > util > JS api.js > [∅] getUserApi > [∅] URL_API
          import axios from './axios.customize';
                                                                                  JS axios.customize.js X
    2
                                                                                   ReactJS01 > src > util > JS axios.customize.js > ...
          const createUserApi = (name, email, password) => {
                                                                                         import axios from "axios";
               const URL API = "/v1/api/register";
                                                                                        // Set config defaults when creating the instance
                                                                                         const instance = axios.create({
               const data = {
    5
                                                                                            baseURL: import.meta.env.VITE BACKEND URL
                     name, email, password
    6
                                                                                         });
    7
                                                                                         // Alter defaults after instance has been created
    8
                                                                                         // Add a request interceptor
               return axios.post(URL API, data)
    9
                                                                                         instance.interceptors.request.use(function (config) {
   10
                                                                                            // Do something before request is sent
                                                                                            config.headers.Authorization = `Bearer ${localStorage.getItem("access token")}`;
                                                                                    11
   11
                                                                                            return config;
                                                                                    12
          const loginApi = (email, password) => {
   12
                                                                                         }, function (error) {
                                                                                    13
               const URL API = "/v1/api/login";
   13
                                                                                    14
                                                                                            // Do something with request error
               const data = {
                                                                                    15
                                                                                            return Promise.reject(error);
   14
                                                                                    16
                                                                                         });
                     email, password
   15
                                                                                    17
   16
                                                                                         // Add a response interceptor
   17
                                                                                         instance.interceptors.response.use(function (response) {
                                                                                            // Any status code that lie within the range of 2xx cause this function to trigger
                                                                                    20
               return axios.post(URL API, data)
   18
                                                                                    21
                                                                                            // Do something with response data
   19
                                                                                    22
                                                                                            if (response && response.data) return response.data;
   20
                                                                                    23
                                                                                            return response;
                                                                                         }, function (error) {
          const getUserApi = () => {
   21
                                                                                            // Any status codes that falls outside the range of 2xx cause this function to trigger
               const URL API = "/v1/api/user";
   22
                                                                                            // Do something with response error
               return axios.get(URL API)
   23
                                                                                            if (error?.response?.data) return error?.response?.data;
                                                                                    27
                                                                                    28
                                                                                            return Promise.reject(error);
   24
                                                                                    29
                                                                                         });
   25
          export {
   26
                                                                                        export default instance;
               createUserApi, loginApi, getUserApi
   27
   28
```

Bước 17: Tạo thư mục src\styles và src\pages và

37

```
tạo các file sau:
  global.css X
   ReactJS01 > src > styles > 3 gloł
        1
                      margin: 0;
                      padding: 0;
        3
home.isx X
ReactJS01 > src > pages > ∰ home.jsx > № HomePage
      import { CrownOutlined } from '@ant-design/icons';
      import { Result } from 'antd';
      const HomePage = () => {
         return (
             <div style={{ padding: 20 }}>
  6
                <Result
                    icon={<CrownOutlined />}
  8
                    title="JSON Web Token (React/Node.JS) - iotstar.vn"
  9
                />
 10
 11
             </div>
 12
 13
 14
      export default HomePage;
```

```
styles
                                                                                   3 global.css
wser.jsx 👺
                                                                                         pages
ReactJS01 > src > pages > ∰ user.jsx > Ø UserPage
      import { notification, Table } from "antd";
                                                                                          home.jsx
       import { useEffect, useState } from "react";
      import { getUserApi } from "../util/api";
                                                                                           login.jsx
      const UserPage = () => {
          const [dataSource, setDataSource] = useState([]);
                                                                                           register.jsx
          useEffect(() => {
              const fetchUser = async () => {
                                                                                           user.jsx
                  const res = await getUserApi();
                  if (!res?.message) {
 10
                      setDataSource(res)
 11
                   notification.error({
 12
                          message: "Unauthorized",
 13
                          description: res.message
 14
 15
 16
 17
              fetchUser();
 18
 19
          }, [])
                                                     return (
                                           38 ∨
          const columns = [
 20
                                                          <div style={{ padding: 30 }}>
 21
                                           39 ∨
                  title: 'Id',
 22
                                                              <Table
                                           40
 23
                  dataIndex: 'id',
                                                                  bordered
                                           41 v
 24
 25
                                                                  dataSource={dataSource} columns={columns}
                                           42
                  title: 'Email',
 26
                                                                  rowKey={" id"}
                                           43
 27
                  dataIndex: 'email',
 28
                                           44
 29
                                                          </div>
                                           45
                  title: 'Name',
 30
 31
                  dataIndex: 'name',
                                           46
 32
                                           47
 33
                                                 export default UserPage;
                  title: 'Role',
 34
                  dataIndex: 'role',
 35
 36
```

ThS. Nguyễn Hữu Trung

register.jsx X

Hướng dẫn Fullstack với Express.js – ReactJS - Mongoonse

Bước 17: Tạo thư mục src\pages và tạo các file sau:

```
pages
 home.jsx
 login.jsx
 register.jsx
 user.jsx
```

```
ReactJS01 > src > pages > ∰ register.jsx > ...
                                                                                   31
                                                                                               return (
      import React from 'react';
                                                                                   32
                                                                                                    <Row justify={"center"} style={{ marginTop: "30px" }}>
                                                                                   33
                                                                                                        <Col xs={24} md={16} lg={8}>
      import { Button, Col, Divider, Form, Input, notification, Row } from 'antd';
                                                                                    34
                                                                                                             <fieldset style={{
      import { createUserApi } from '../util/api';
                                                                                   35
                                                                                                                 padding: "15px",
      import { Link, useNavigate } from 'react-router-dom';
                                                                                   36
                                                                                                                 margin: "5px",
      import { ArrowLeftOutlined } from '@ant-design/icons';
                                                                                   37
                                                                                                                 border: "1px solid #ccc",
                                                                                                                 borderRadius: "5px"
                                                                                    38
                                                                                    39
      const RegisterPage = () => {
                                                                                                                 <legend>Đăng Ký Tài Khoản</legend>
                                                                                   40
          const navigate = useNavigate();
                                                                                                                 <Form
                                                                                   41
                                                                                   42
                                                                                                                      name="basic"
                                                                                                                      onFinish={onFinish}
                                                                                   43
 10
          const onFinish = async (values) => {
                                                                                                                      autoComplete="off"
             const { name, email, password } = values;
 11
                                                                                                                      layout='vertical'
                                                                                   45
 12
                                                                                   46
                                                                                                                      <Form.Item
              const res = await createUserApi(name, email, password);
 13
                                                                                                                           label="Email"
                                                                                    48
 14
                                                                                    49
                                                                                                                           name="email"
 15
              if (res) {
                                                                                    50
                                                                                                                           rules={[
                 notification.success({
                                                                                    51
 16
                                                                                   52
                                                                                                                                    required: true.
                     message: "CREATE USER",
                                                                                                                                    message: 'Please input your email!',
                                                                                   53
                     description: "Success"
 18
                                                                                    54
                                                                                    55
                                                                                                                           ]}
 19
                                                                                    56
                 navigate("/login");
 20
                                                                                   57
                                                                                                                           <Input />
 21
                                                                                                                      </Form.Item>
                                                                                    58
 22
               else {
                                                                                    59
                                                                                    60
                                                                                                                      <Form.Item
                 notification.error({
 23
                                                                                                                           label="Password"
                                                                                   61
                     message: "CREATE USER",
 24
                                                                                                                           name="password"
                                                                                   62
                     description: "error"
 25
                                                                                   63
                                                                                                                           rules={[
                                                                                   64
 26
                                                                                    65
                                                                                                                                    required: true,
 27
                                                                                   66
                                                                                                                                    message: 'Please input your password!',
 28
 29
```

🔯 pages

home.jsx

Bước 17: Tạo thư mục src\pages và tạo các file sau:

```
login.jsx
                                                                                                                               register.jsx
 67
 68
                                                                                                                               user.jsx
 69
                                 <Input.Password />
 70
 71
                             </Form.Item>
 72
                             <Form.Item
 73
 74
                                 label="Name"
                                 name="name"
 75
                                 rules={[
 76
 77
                                         required: true,
 79
                                         message: 'Please input your name!',
 81
 82
                                 <Input />
                             </Form.Item>
 85
                             <Form.Item
                                 <Button type="primary" htmlType="submit">
                                     Submit
                                                                                                               </Row>
                                                                                         101
                                 </Button>
 90
                                                                                         102
                             </Form.Item>
 92
                                                                                         103
                         <Link to={"/"}><ArrowLeftOutlined /> Quay lai trang chuk/Link>
 93
                          <Divider />
                                                                                         104
                         <div style={{ textAlign: "center" }}>
                                                                                         105
                             Đã có tài khoản? <Link to={"/login"}>Đăng nhập</Link>
 96
                          </div>
                                                                                                   export default RegisterPage;
                                                                                         106
 98
                      </fieldset>
                  </Col>
100
                                                                                                      ThS. Nguyễn Hữu Trung
```

37

Hướng dẫn Fullstack với Express.js – ReactJS - Mongoonse

Bước 17: Tạo thư mục src\pages và tạo các file sau:

```
login.jsx
                                                                                                                                                                register.jsx
login.jsx X
.eactJS01 > src > pages > ∰ login.jsx > [ o] LoginPage > [ o] onFinish
                                                                                                                                                                user.jsx
     import React, { useContext } from 'react';
                                                                                             38
     import { Button, Col, Divider, Form, Input, notification, Row } from 'antd';
                                                                                             39
     import { loginApi } from '../util/api';
                                                                                             40
     import { Link, useNavigate } from 'react-router-dom';
                                                                                             41
     import { AuthContext } from '../components/context/auth.context';
                                                                                             42
                                                                                                       return (
     import { ArrowLeftOutlined } from '@ant-design/icons';
                                                                                             43
                                                                                                            <Row justify={"center"} style={{ marginTop: "30px" }}>
                                                                                                                 <Col xs={24} md={16} lg={8}>
                                                                                             44
 9
     const LoginPage = () => {
                                                                                                                     <fieldset style={{
                                                                                             45
         const navigate = useNavigate();
10
                                                                                                                         padding: "15px",
                                                                                             46
11
         const { setAuth } = useContext(AuthContext);
                                                                                                                         margin: "5px",
                                                                                             47
12
                                                                                                                         border: "1px solid #ccc",
                                                                                             48
         const onFinish = async (values) => {
13
                                                                                             49
                                                                                                                         borderRadius: "5px"
              const { email, password } = values;
14
                                                                                             50
                                                                                                                     }}>
15
                                                                                             51
                                                                                                                         <legend>Đăng Nhập</legend>
             const res = await loginApi(email, password);
16
                                                                                             52
17
                                                                                                                              name="basic"
                                                                                             53
             if (res && res.EC === 0) {
18
                                                                                                                              onFinish={onFinish}
                 localStorage.setItem("access token", res.access token)
                                                                                             54
19
                                                                                                                              autoComplete="off"
                 notification.success({
                                                                                             55
20
                     message: "LOGIN USER",
                                                                                                                              layout='vertical'
21
                                                                                             56
22
                     description: "Success"
                                                                                             57
23
                 });
                                                                                             58
                                                                                                                              <Form.Item
                 setAuth({
24
                                                                                             59
                                                                                                                                   label="Email"
                     isAuthenticated: true,
25
                                                                                                                                   name="email"
                                                                                             60
26
                     user: {
                                                                                                                                   rules={[
                                                                                             61
                         email: res?.user?.email ?? "",
27
                                                                                             62
                         name: res?.user?.name ?? ""
28
                                                                                                                                            required: true,
                                                                                             63
29
                                                                                                                                            message: 'Please input your email!',
                                                                                             64
30
                                                                                             65
31
                 navigate("/");
                                                                                             66
32
                                                                                             67
33
               else {
                                                                                             68
                                                                                                                                   <Input />
                 notification.error({
34
                                                                                                                              </Form.Item>
                                                                                             69
                     message: "LOGIN USER",
35
                                                                                             70
36
                     description: res?.EM ?? "error"
```

pages

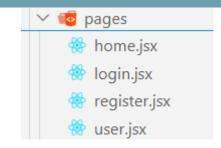
home.jsx

Bước 17: Tạo thư mục src\pages và tạo các file sau:

```
71
                                <Form.Item
 72
                                    label="Password"
                                    name="password"
 73
                                    rules={[
 74
 75
                                            required: true,
 76
                                            message: 'Please input your password!',
 77
 78
 79
 80
                                    <Input.Password />
 81
                                </Form.Item>
 82
 83
                                <Form.Item
 84
 85
                                    <Button type="primary" htmlType="submit">
 86
                                        Login
 87
                                    </Button>
 88
                                </Form.Item>
 89
 90
                           <Link to={"/"}><ArrowLeftOutlined /> Quay lai trang chuk/Link>
 91
                            <Divider />
 92
                           <div style={{ textAlign: "center" }}>
 93
                                Chưa có tài khoản? <Link to={"/register"}>Đăng ký tại đây</Link>
 94
                            </div>
                       </fieldset>
 96
 97
                   </Col>
               </Row>
 98
 99
100
```

export default LoginPage;

101



Bước 18: Cấu hình main.jsx:

```
🌞 main.jsx
ReactJS01 > src > 🛞 main.jsx > ...
      import React from 'react'
       import ReactDOM from 'react-dom/client'
       import App from './App.jsx'
       import './styles/global.css';
   5
   6
       import {
        createBrowserRouter,
         RouterProvider,
   8
       } from "react-router-dom";
  9
       import RegisterPage from './pages/register.jsx';
 10
       import UserPage from './pages/user.jsx';
 11
       import HomePage from './pages/home.jsx';
 12
       import LoginPage from './pages/login.jsx';
 13
       import { AuthWrapper } from './components/context/auth.context.jsx';
 14
 15
       const router = createBrowserRouter([
 16
 17
                                                           path: "login",
                                               36
           path: "/",
 18
                                                           element: <LoginPage />
                                               37
           element: <App />,
 19
                                               38
           children: [
  20
                                                      1);
                                               39
  21
                                              40
              index: true,
  22
              element: <HomePage />
                                              41
  23

    ReactDOM.createRoot(document.getElementById('root')).render(
  24
                                              42
  25
                                                        <React.StrictMode>
                                              43
              path: "user",
  26
                                                           <AuthWrapper>
                                              44
              element: <UserPage />
  27
                                                             <RouterProvider router={router} />
                                              45
  28
                                                           </AuthWrapper>
                                              46
  29
                                                        </React.StrictMode>,
                                              47
  30
                                              48
  31
           path: "register",
  32
           element: <RegisterPage />
  33
  34
```

```
assets
components
  context
👨 layout
pages
styles
App.jsx
main.jsx
```

Bước 18: Cấu hình App.jsx:

```
♠ App.jsx 1 X

                                                                              33
                                                                                        return (
                                                                                           <div>
ReactJS01 > src > 
App.jsx > ...
                                                                              34
      import { Outlet } from "react-router-dom";
                                                                              35
                                                                                               {appLoading === true ?
      import Header from "./components/layout/header";
                                                                                                 <div style={{
                                                                              36
      import axios from "./util/axios.customize"
                                                                                                    position: "fixed",
      import { useContext, useEffect } from "react"
                                                                              37
      import { AuthContext } from "./components/context/auth.context";
                                                                                                    top: "50%",
                                                                              38
      import { Spin } from "antd";
                                                                                                    left: "50%",
                                                                              39
                                                                                                    transform: "translate(-50%, -50%)"
       function App() {
  8
                                                                              40
  9
                                                                                                 }}>
                                                                              41
        const { setAuth, appLoading, setAppLoading } = useContext(AuthContext);
 10
                                                                              42
 11
        useEffect(() => {
 12
                                                                                                    <Spin />
                                                                              43
          const fetchAccount = async () => {
 13
                                                                              44
 14
            setAppLoading(true);
                                                                                                 </div>
                                                                              45
            const res = await axios.get(\( \)/u/api/user\( \);
 15
            if (res && !res.message) {
 16
                                                                              46
              setAuth({
 17
                                                                              47
                                                                                                 <>
                isAuthenticated: true,
 18
                                                                                                    <Header />
                                                                              48
  19
                user: {
 20
                  email: res.email,
                                                                                                    <Outlet />
                                                                              49
 21
                  name: res.name
                                                                              50
 22
                                                                              51
  23
  24
                                                                              52
            setAppLoading(false);
  25
                                                                                           </div>
                                                                              53
  26
                                                                              54
 27
          fetchAccount()
 28
                                                                              55
 29
         }, [])
                                                                              56
                                                                                      export default App
                                                                              57
```

- Thực hiện các bước tương tự như bài tập hướng dẫn nhưng áp dụng cho database MySql.
- Thực hiện chức năng Register và ForgotPassword