

Full Stack with React and Express

Different Approaches

- Historically, building a full stack web application always meant that your front-end application would be served up by your back-end application
- It is now possible to deploy your back-end application that exposes a restful API on one platform and your front-end application on another
- Sometimes it is still appropriate to keep your back-end and front-end together.
- In this task, we will be keeping the React and Express apps together.

Set Up Proxy

- Proxy server: works by intercepting connections between a sender and receiver
- HTTP proxy: intercepts web access requests and handles them appropriately.
- From your React app, specify that the Express app is the proxy server

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Set Up Proxy

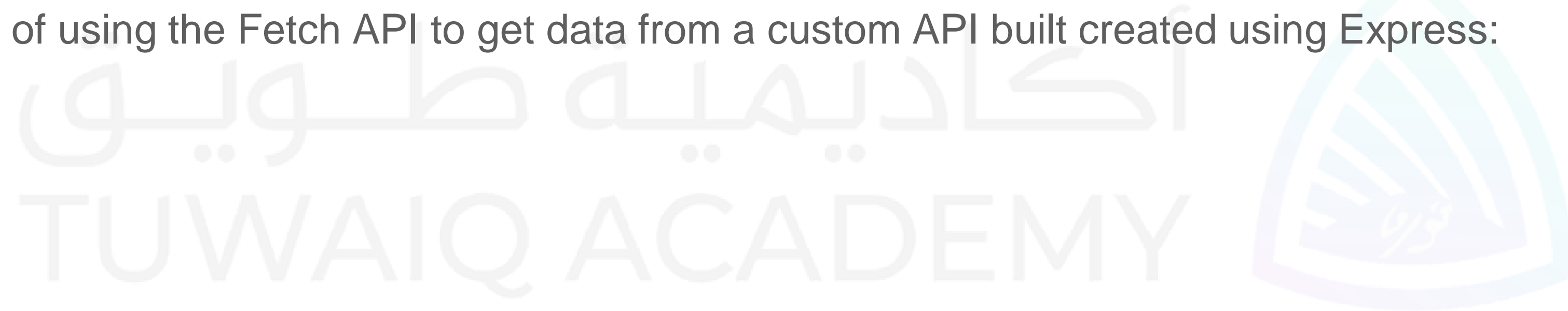
- To specify that the Express app is the proxy:
 1. Open the package.json file of your React app.
 2. Add the proxy information to the package.json file as shown below.

"proxy": "http://localhost:3001"



Use the Fetch API to get Data from Server

- `fetch()` method takes one mandatory argument, the path to the resource you want to fetch. It returns a Promise that resolves to the Response to that request, whether it is successful or not.
- Next is an example of using the Fetch API to get data from a custom API built created using Express:



Use the Fetch API to get Data from Server

Important settings that can be specified are:

- method: which can be GET, POST, PUT or DELETE
- headers: A headers object is a simple multi-map of names to values.
- Body: Both requests and responses may contain body data which can be either text, JSON, form data or an array buffer. Any data that should be passed from the front-end to the server or vice-a-versa is sent in the body.

Use the Fetch API to get Data from Server

- If we want our Express server to be able to access content that is passed in the body of the HTTP request, we need to include the body-parser middleware.

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Preparing your App for Deployment

- Specify the version of Node.js and NPM you have used to build your app:
 - Find out which version of Node.js you have been using by typing `node -v` into the command line interface.
 - Find out which version of NPM you have been using `npm -v`
 - Update your `package.json` file by specifying an 'engines' field in your `package.json`
 - file

Preparing your App for Deployment

- Dynamically bind ports:
 - Modify the code where we set up our server.
 - E.g. `app.listen(3001)` changes to

```
const PORT = process.env.PORT || 3001;
```

```
app.listen(PORT);
```

Preparing your App for Deployment

- Specify start scripts
 - Specify the file that you want to use to start your server in the scripts section of your package.json file.
 - E.g. "start": "app.js"

Preparing your App for Deployment

- Specify a heroku-postbuild script
 - Add a heroku-postbuild script to our root Express package.json file
 - E.g.: "heroku-postbuild": "NPM_CONFIG_PRODUCTION=false npm install --prefix frontend && npm run build --prefix frontend"

Preparing your App for Deployment

- Change Express' App.js file to call React build assets
 - Express needs to serve up resources that have been built from the React app by adding this to App.js of the Express application:

```
if (process.env.NODE_ENV === 'production'){  
  app.use(express.static(path.join(__dirname, 'frontend/build')));  
  app.get('*', (req, res) => {res.sendFile(path.resolve(__dirname,  
    'frontend', 'build', 'index.html'));  
});  
}
```

Preparing your App for Deployment

- Create a .gitignore file
 - Express applications you have created contained a node_modules directory. These are specified in your package.json file.
 - Heroku will automatically create a new node_modules directory for your app
 - To avoid conflicts, create a .gitignore file. This specifies which files and directories should not be committed to Git.
 - Create a file called .gitignore in the root directory of your application. Type node_modules and save.

Resources

- <https://www.section.io/engineering-education/how-to-setup-nodejs-express-for-react/>

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