To build a super simple back-end that securely handles the API access token, you’ll need to learn a few basic back-end concepts and tools. Since you’re just starting with the back-end, here’s a step-by-step guide on what you need to focus on:

**1. Node.js (JavaScript Runtime for Server-Side)**

Since you're already familiar with JavaScript through React, it makes sense to use **Node.js** for your back-end. Node.js allows you to run JavaScript on the server and build APIs.

* **What to learn**:
  + What Node.js is and how it works.
  + Setting up a basic Node.js server.
  + Running a Node.js app locally.
* **Resources**: The official Node.js documentation.

**2. Express.js (Web Framework for Node.js)**

Express.js is a lightweight web framework for Node.js that makes it easy to handle HTTP requests and set up routes for your API.

* **What to learn**:
  + How to set up an Express server.
  + Defining routes (like /login, /callback, etc.).
  + Handling requests and responses in Express.
* **Resources**: The official Express documentation.

**3. Environment Variables**

To keep sensitive data (like API keys and access tokens) secure, you should use environment variables in the back-end. This allows you to avoid hardcoding secrets in your source code.

* **What to learn**:
  + How to set environment variables using a .env file.
  + Using the dotenv package in Node.js to access environment variables.
* **Resources**: Learn about the [dotenv package](https://www.npmjs.com/package/dotenv).

**4. OAuth2 (Authentication Protocol)**

Since you’ll be handling API access tokens, you need a basic understanding of **OAuth2**. Reddit (and many other APIs) uses OAuth2 to allow users to authorize your app to access their data.

* **What to learn**:
  + The OAuth2 flow: authorization, tokens, and refresh tokens.
  + Handling the OAuth flow with your back-end (redirecting users to Reddit’s authorization page, getting tokens, storing tokens).
* **Resources**: The OAuth2 Playground.

**5. Handling API Requests**

Once you have the access token, your back-end will make requests to Reddit’s API on behalf of the client (React app). You’ll need to learn how to make HTTP requests from Node.js to external APIs.

* **What to learn**:
  + Using the fetch API or axios in Node.js to make requests to the Reddit API.
  + Attaching the access token to API requests (via Authorization headers).
* **Resources**: Learn about [axios](https://www.npmjs.com/package/axios) or Node.js’s built-in fetch API.

**6. Basic Security Concepts**

You’ll need to handle some basic security concerns, like not exposing access tokens to the front-end and protecting your routes.

* **What to learn**:
  + How to store access tokens securely (preferably in memory or a database if you expand the app).
  + How to validate requests (e.g., ensuring the front-end can only access allowed routes).

**Step-by-Step Learning Path:**

**Step 1: Learn Node.js Basics**

* **What to do**: Set up Node.js on your local machine and write a simple "Hello World" server.

bash

1. npm init -y

2. npm install express

js

1. const express = require('express');

2. const app = express();

3. const port = 3000;

4.

5. app.get('/', (req, res) => {

6. res.send('Hello World!');

7. });

8.

9. app.listen(port, () => {

10. console.log(`Server running at http://localhost:${port}`);

11. });

12.

**Step 2: Set Up Express Routes**

* **What to do**: Learn how to create routes in Express. For example, set up routes like /login (to start the Reddit OAuth flow) and /callback (to handle the Reddit redirect).

js

1. app.get('/login', (req, res) => {

2. // Redirect to Reddit for authorization

3. res.redirect(`https://www.reddit.com/api/v1/authorize?...`);

4. });

5.

6. app.get('/callback', (req, res) => {

7. // Handle Reddit's callback with access token

8. res.send('Callback route');

9. });

10.

**Step 3: Manage Environment Variables**

* **What to do**: Store sensitive data like CLIENT\_ID and CLIENT\_SECRET in a .env file.
  1. Install dotenv:

bash

1. npm install dotenv

* 1. Create a .env file:

makefile

1. CLIENT\_ID=your\_reddit\_client\_id

2. CLIENT\_SECRET=your\_reddit\_client\_secret

* 1. Use environment variables in your app:

js

1. require('dotenv').config();

2.

3. const clientId = process.env.CLIENT\_ID;

4. const clientSecret = process.env.CLIENT\_SECRET;

**Step 4: Handle the OAuth2 Flow**

* **What to do**: Learn the OAuth2 flow for Reddit and redirect users to Reddit for authorization. After the user grants access, Reddit will send an authorization code to your callback route. You’ll then exchange this code for an access token.
  1. Redirect to Reddit for login:

js

1. const redditAuthUrl = `https://www.reddit.com/api/v1/authorize?client\_id=${clientId}&response\_type=code&state=random\_string&redirect\_uri=${redirectUri}&duration=temporary&scope=read`;

2. res.redirect(redditAuthUrl);

* 1. Handle the callback and exchange the authorization code for an access token using axios:

js

1. const axios = require('axios');

2.

3. app.get('/callback', async (req, res) => {

4. const code = req.query.code;

5. try {

6. const response = await axios.post('https://www.reddit.com/api/v1/access\_token', {

7. code,

8. client\_id: clientId,

9. client\_secret: clientSecret,

10. redirect\_uri: redirectUri,

11. grant\_type: 'authorization\_code',

12. });

13. const accessToken = response.data.access\_token;

14. // Store access token and make Reddit API requests

15. } catch (error) {

16. console.error(error);

17. }

18. });

**Step 5: Make API Requests Using the Access Token**

* **What to do**: Once you have the access token, use it to make requests to Reddit’s API from your back-end and send the data back to your React front-end.

js

1. app.get('/reddit-data', async (req, res) => {

2. const accessToken = 'your\_access\_token';

3. const response = await axios.get('https://oauth.reddit.com/r/malaysia/hot', {

4. headers: {

5. 'Authorization': `Bearer ${accessToken}`

6. }

7. });

8. res.json(response.data);

9. });

**Recommended Learning Resources:**

1. **Node.js Basics**:
   * Node.js official docs
   * FreeCodeCamp's Node.js Tutorial
2. **Express.js**:
   * Express.js official guide
   * [Traversy Media's Express Crash Course](https://www.youtube.com/watch?v=L72fhGm1tfE)
3. **OAuth2**:
   * OAuth.net guide
   * Reddit’s [OAuth documentation](https://github.com/reddit-archive/reddit/wiki/OAuth2)

Once you’ve covered these basics, you’ll be able to build a simple back-end to securely handle the API access token and integrate it with your React front-end.