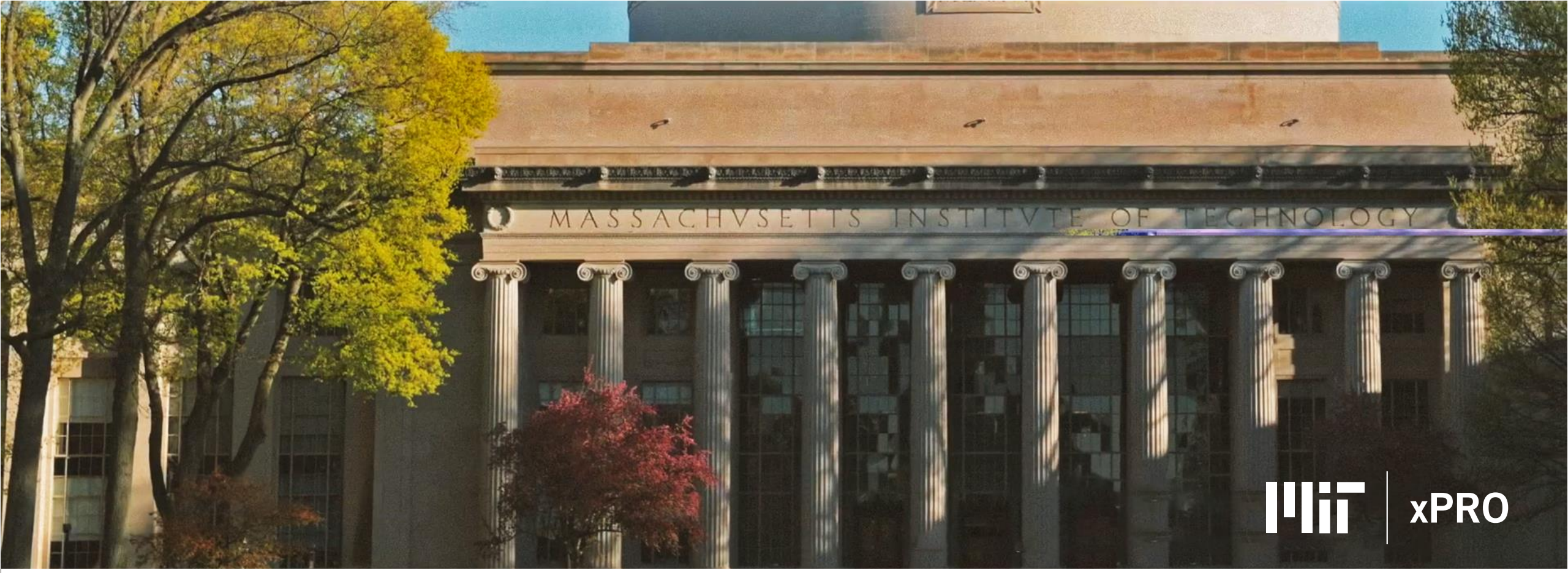
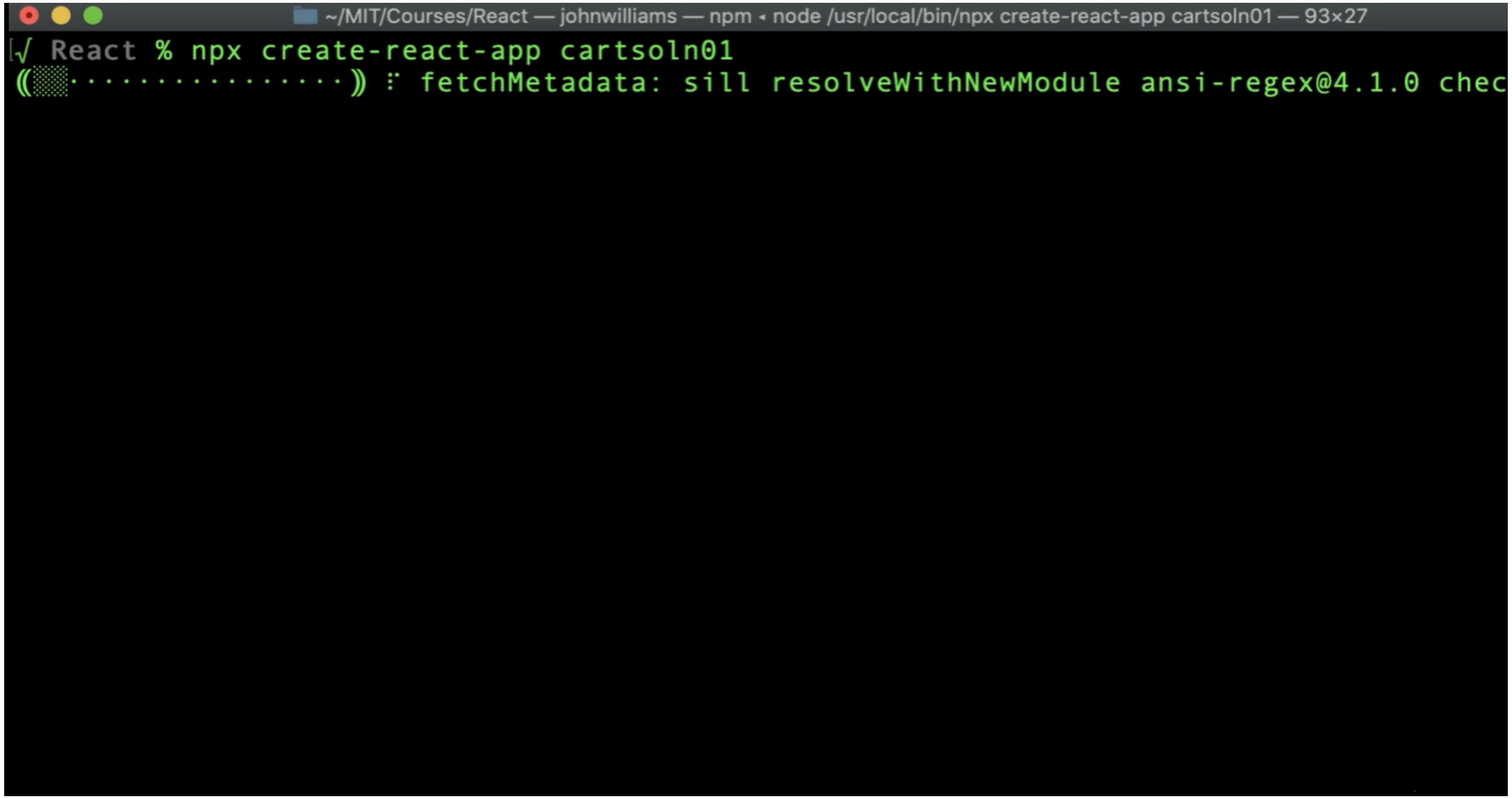


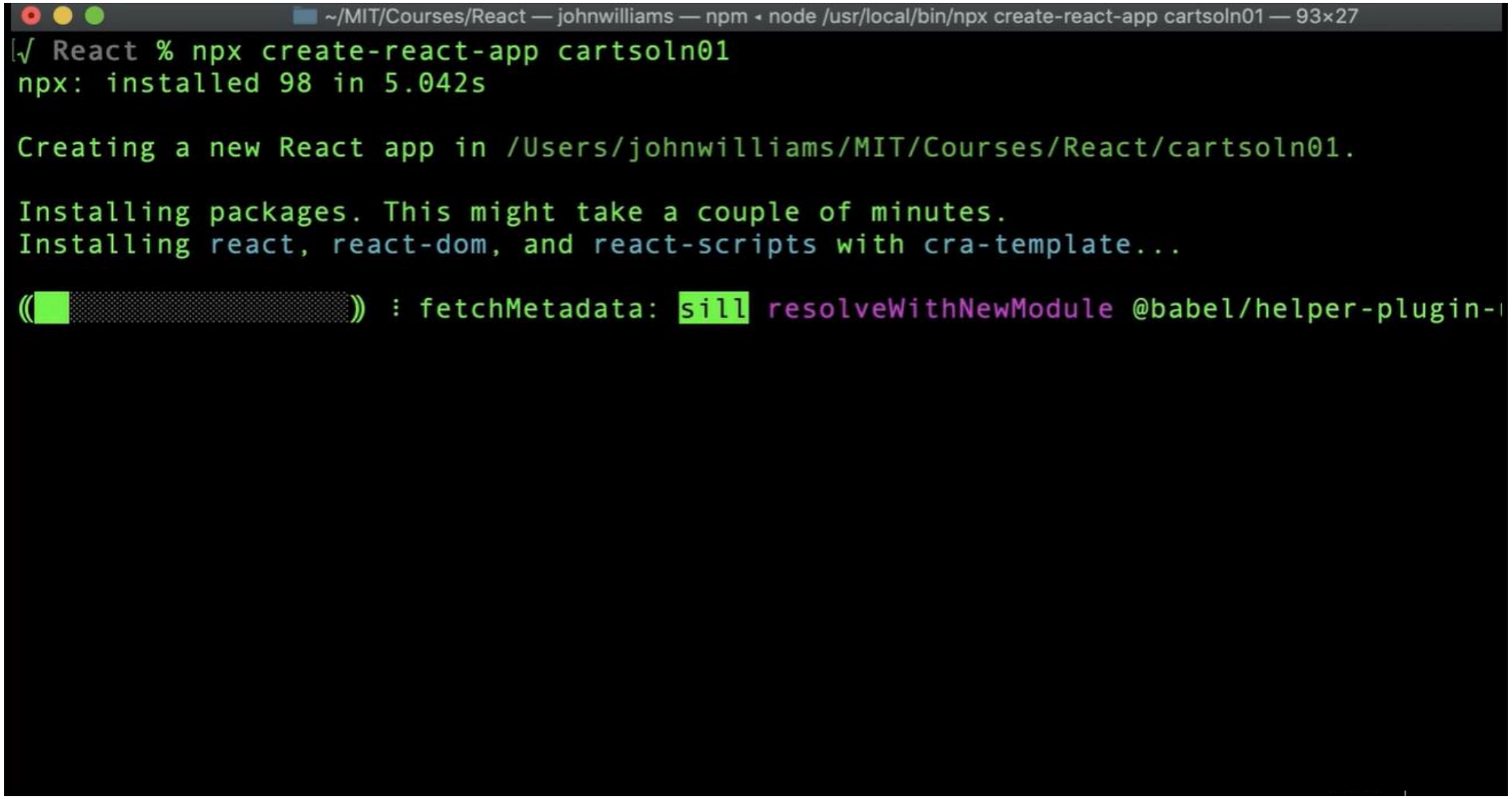
Professional Certificate in Coding: Full Stack Development with MERN: Week 20

Testing

Install Create React App (1/14)

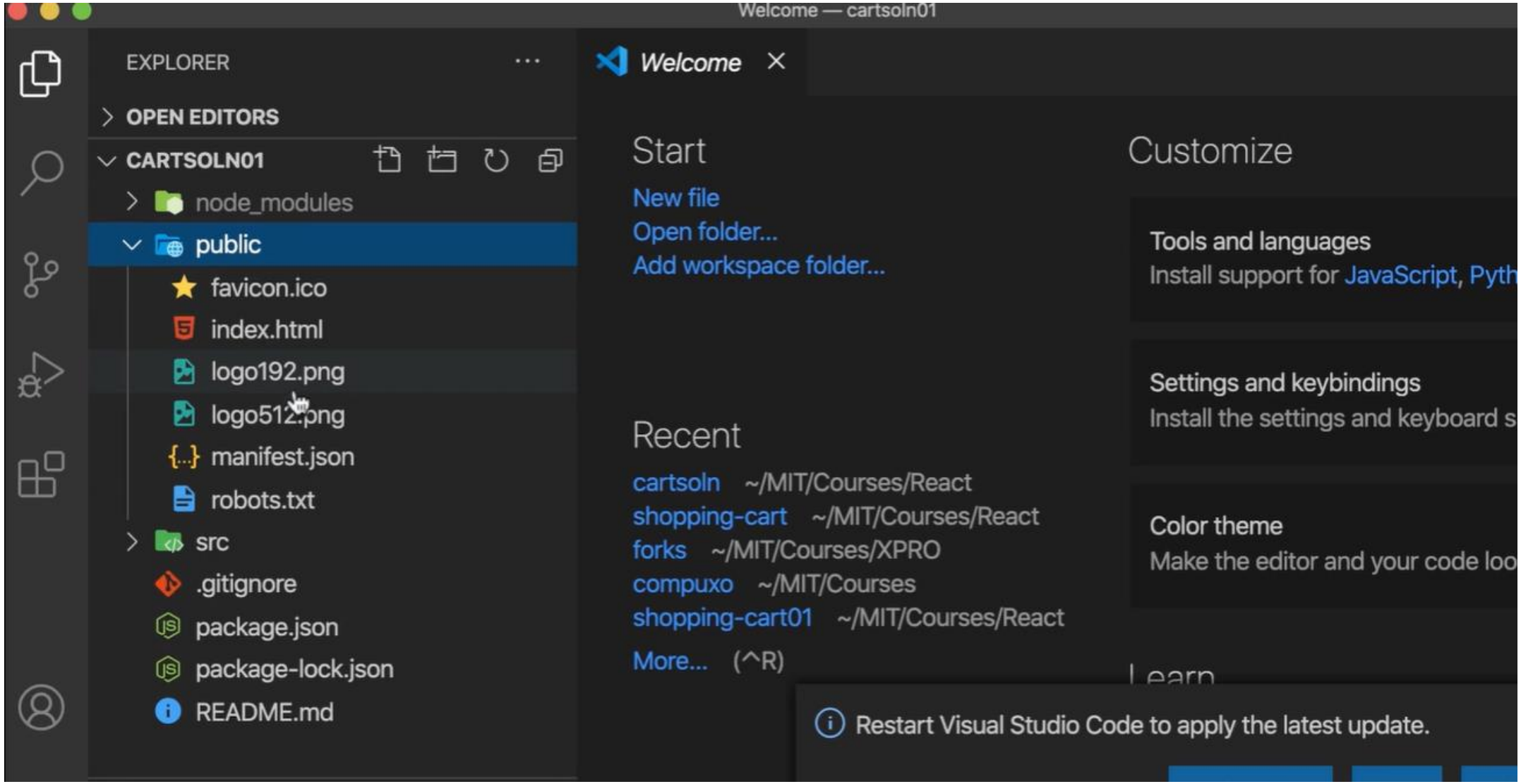


Install Create React App (2/14)

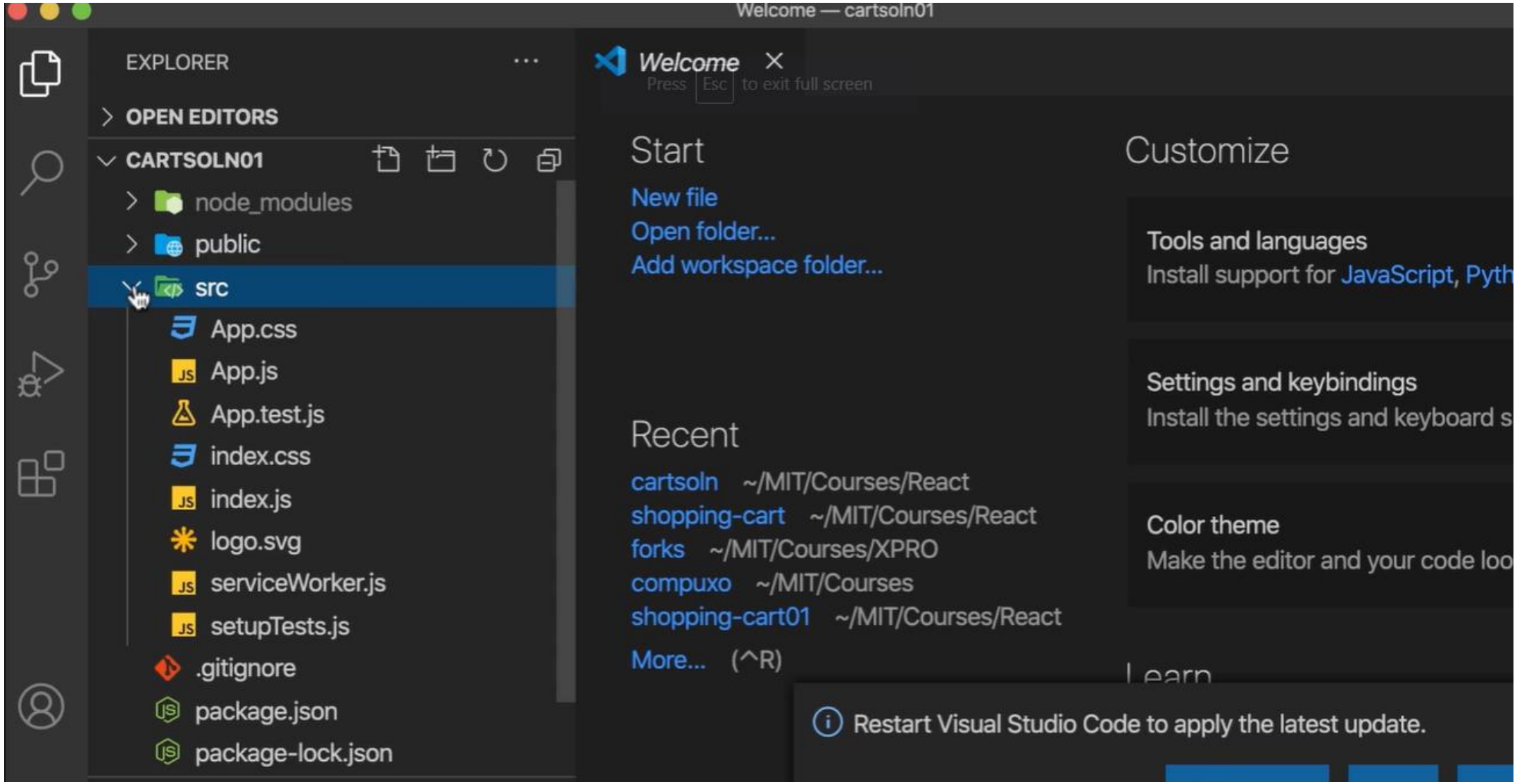


Install Create React App (3/14)

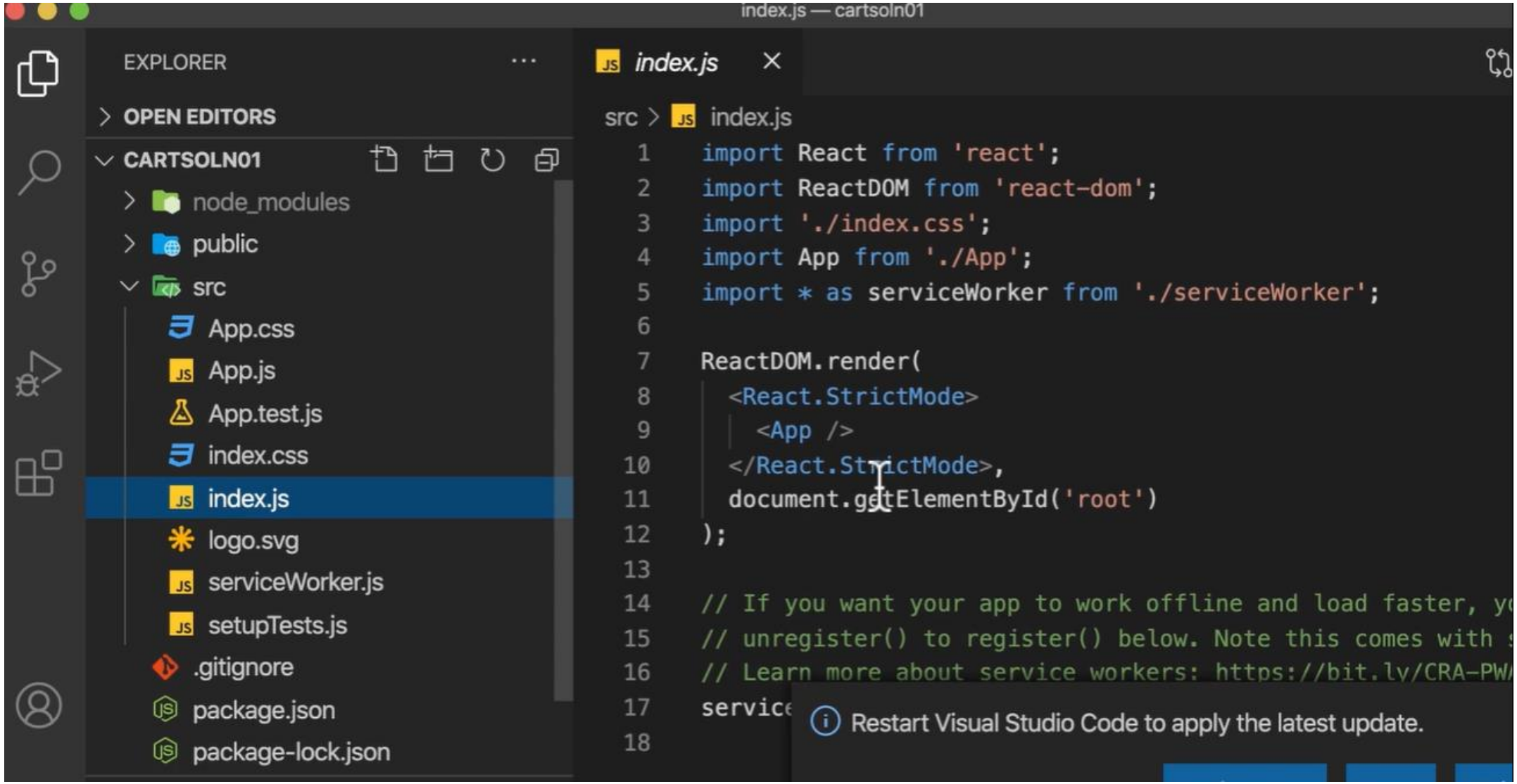
Install Create React App (4/14)



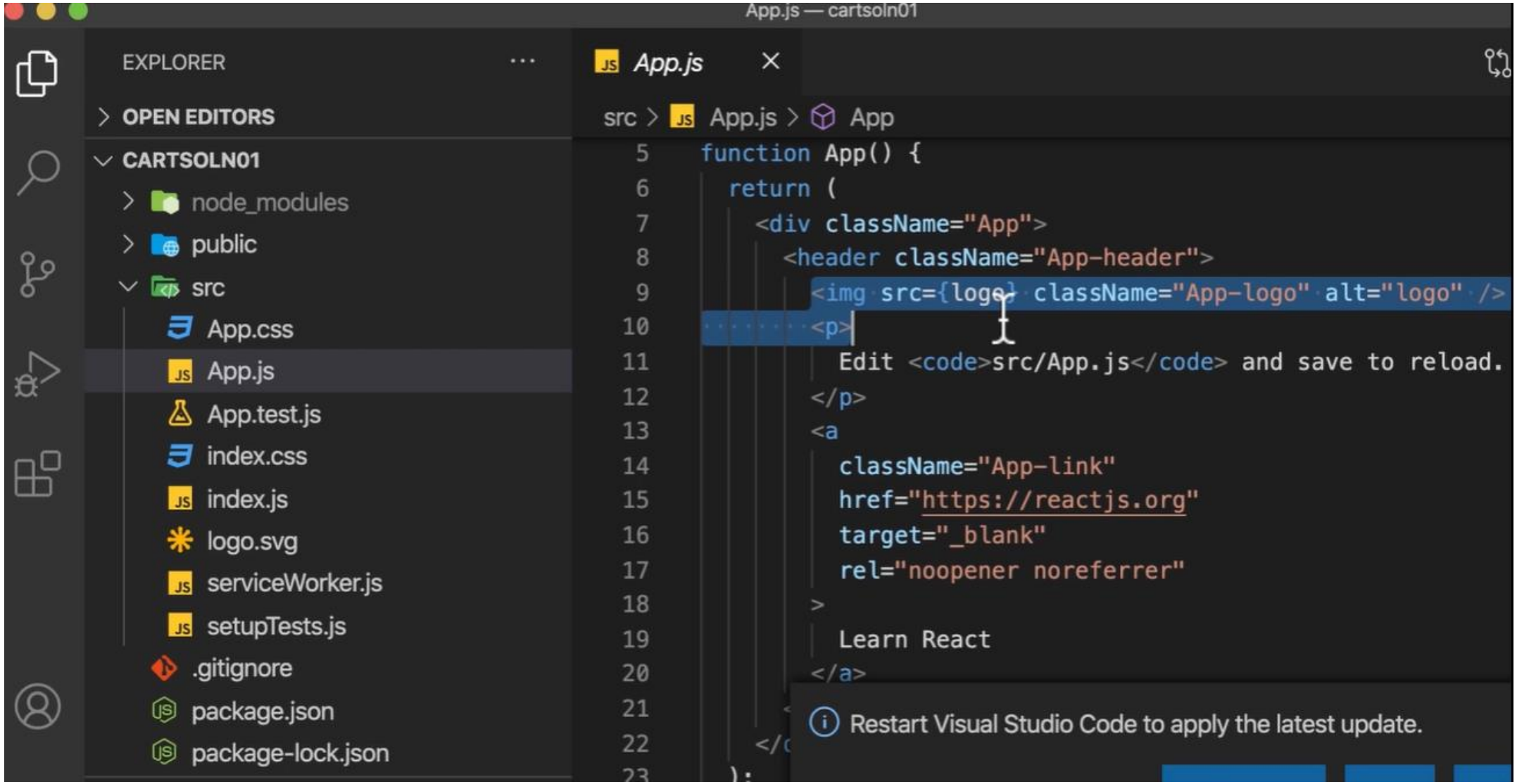
Install Create React App (5/14)



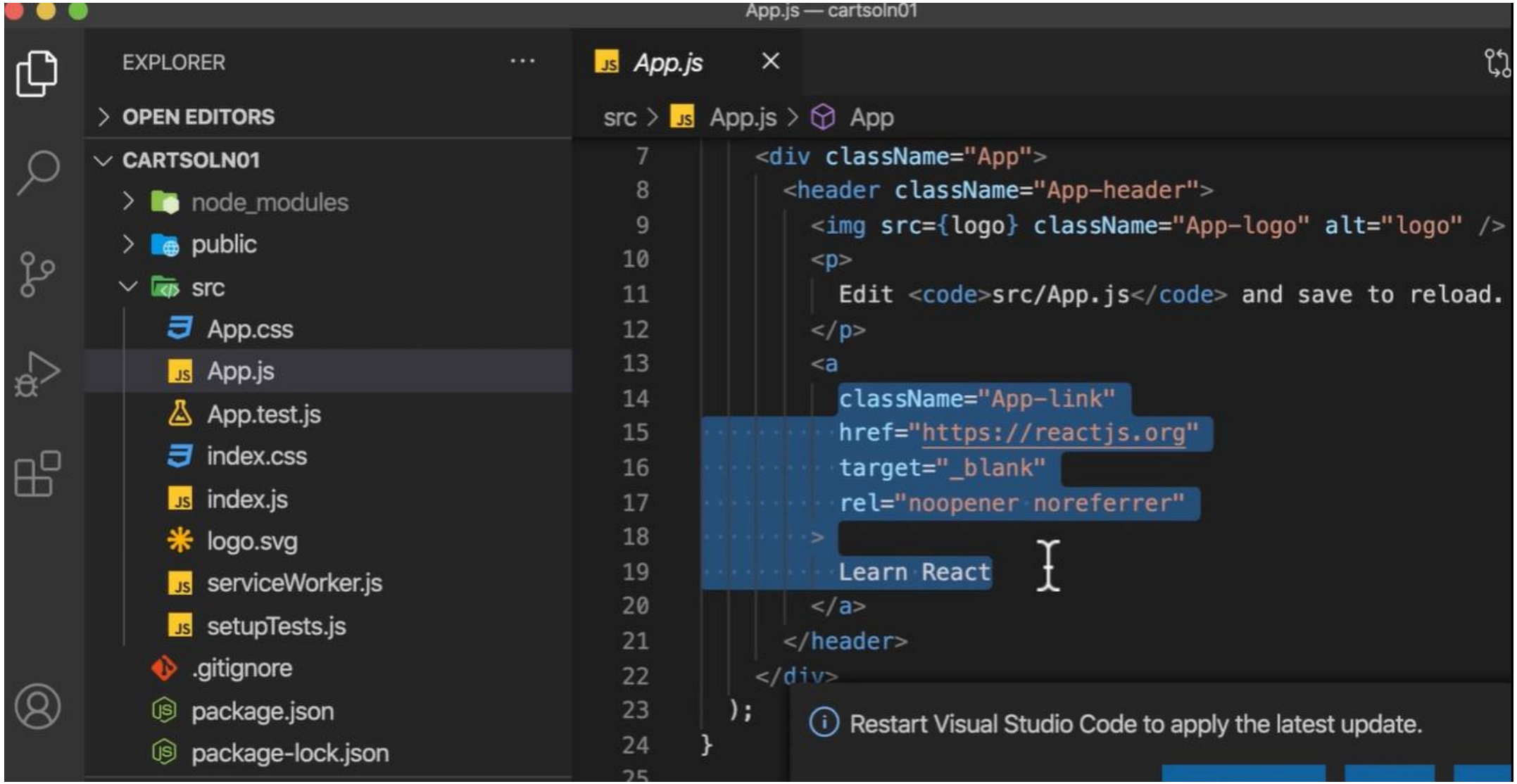
Install Create React App (6/14)



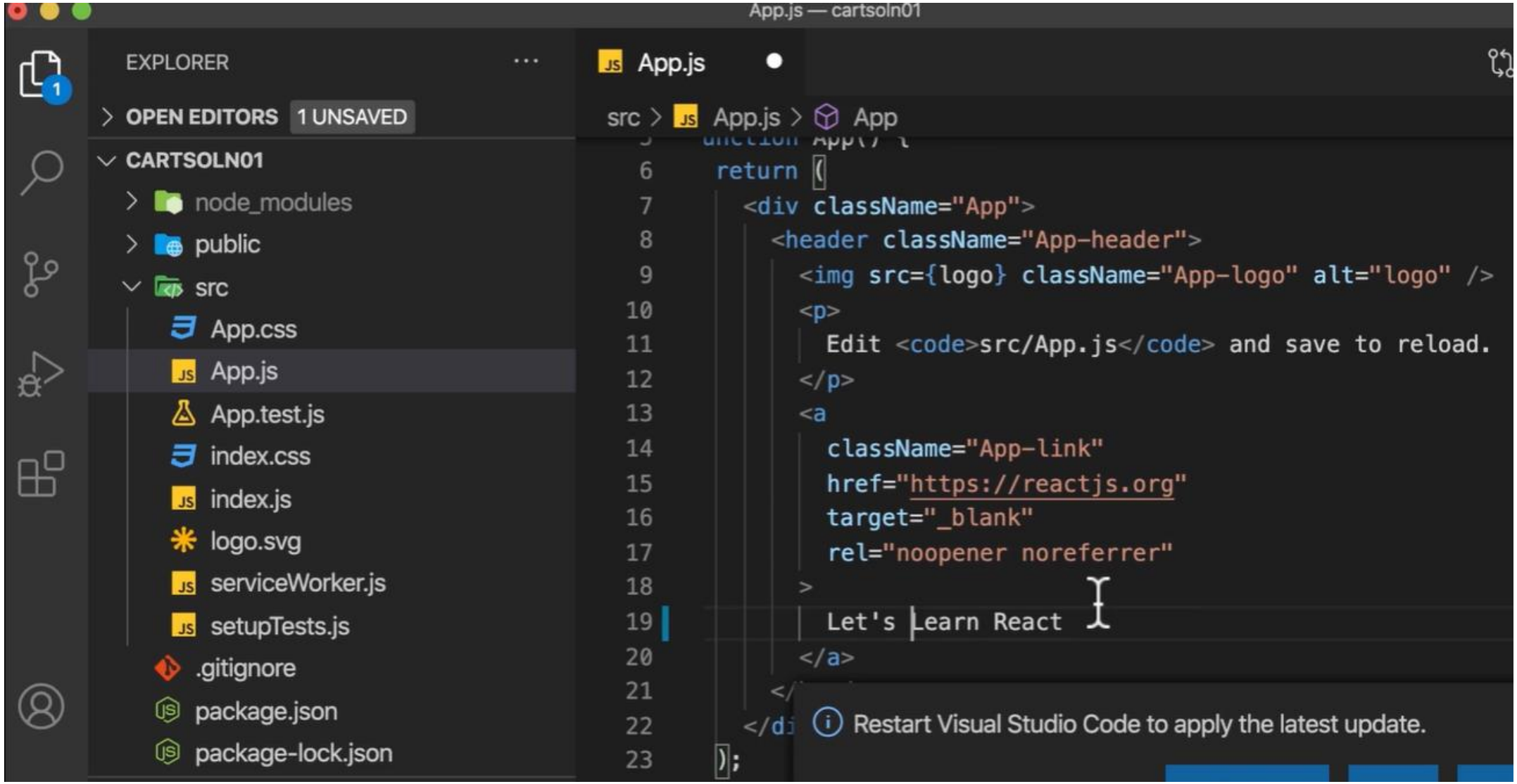
Install Create React App (7/14)



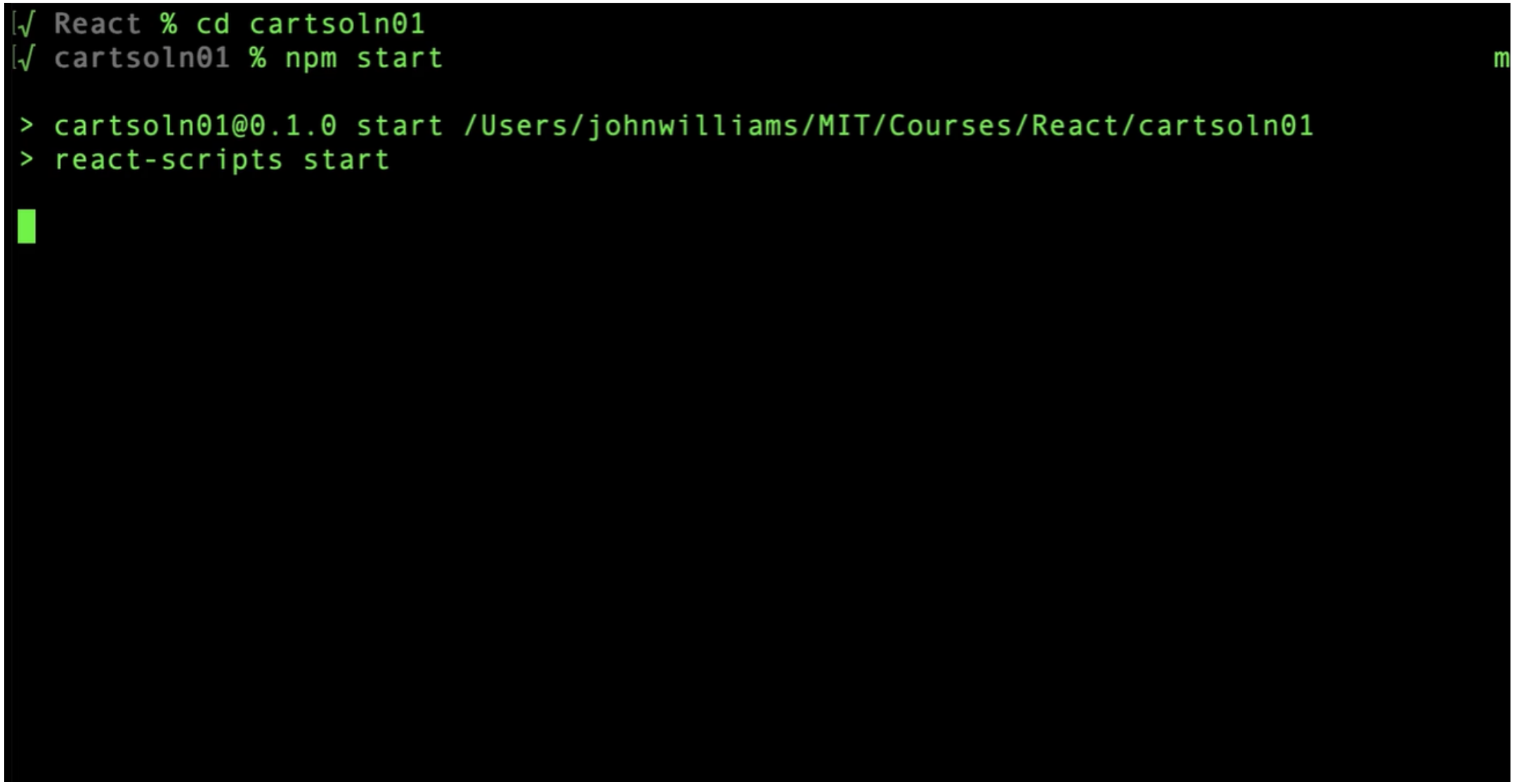
Install Create React App (8/14)



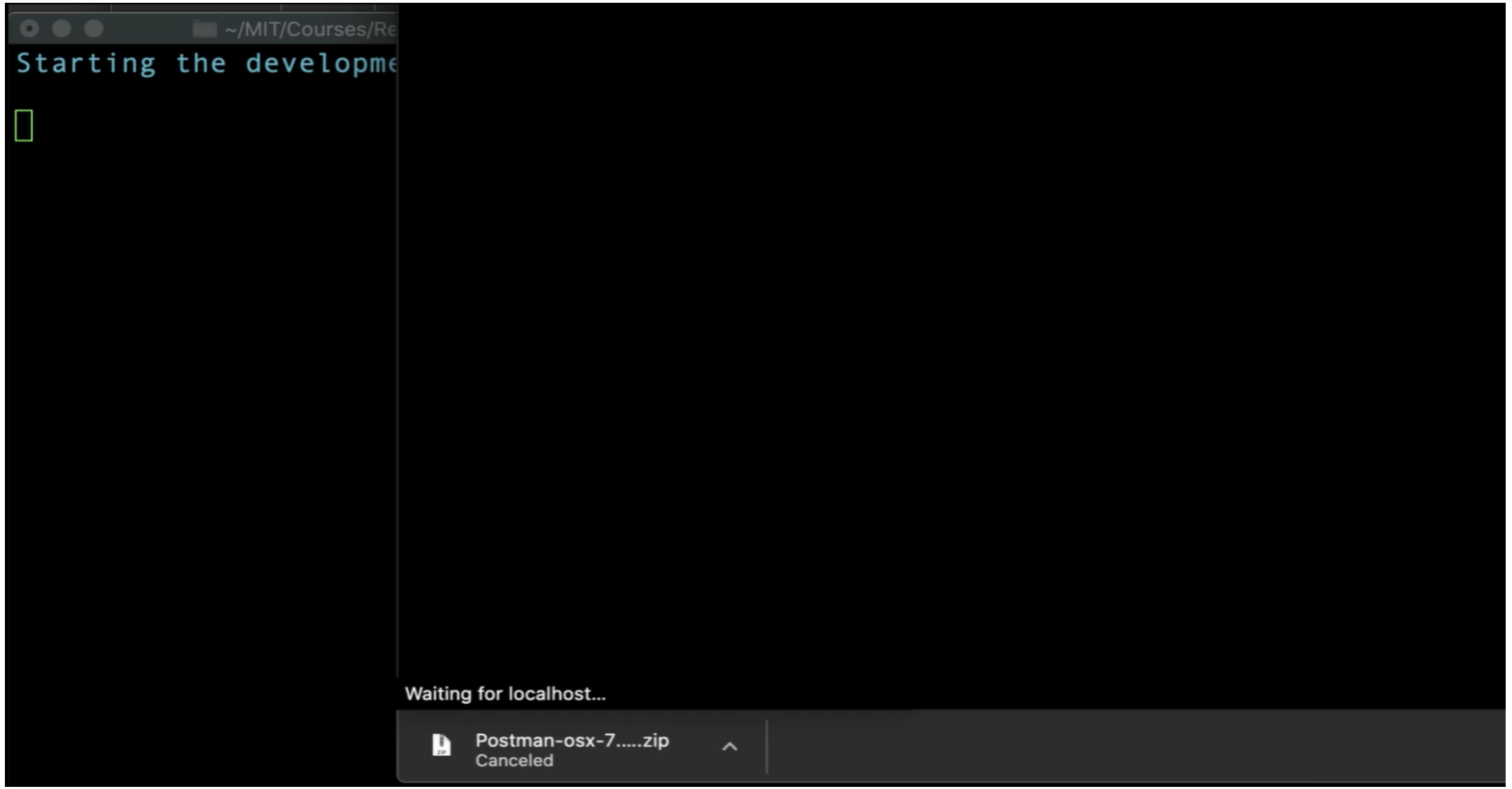
Install Create React App (9/14)



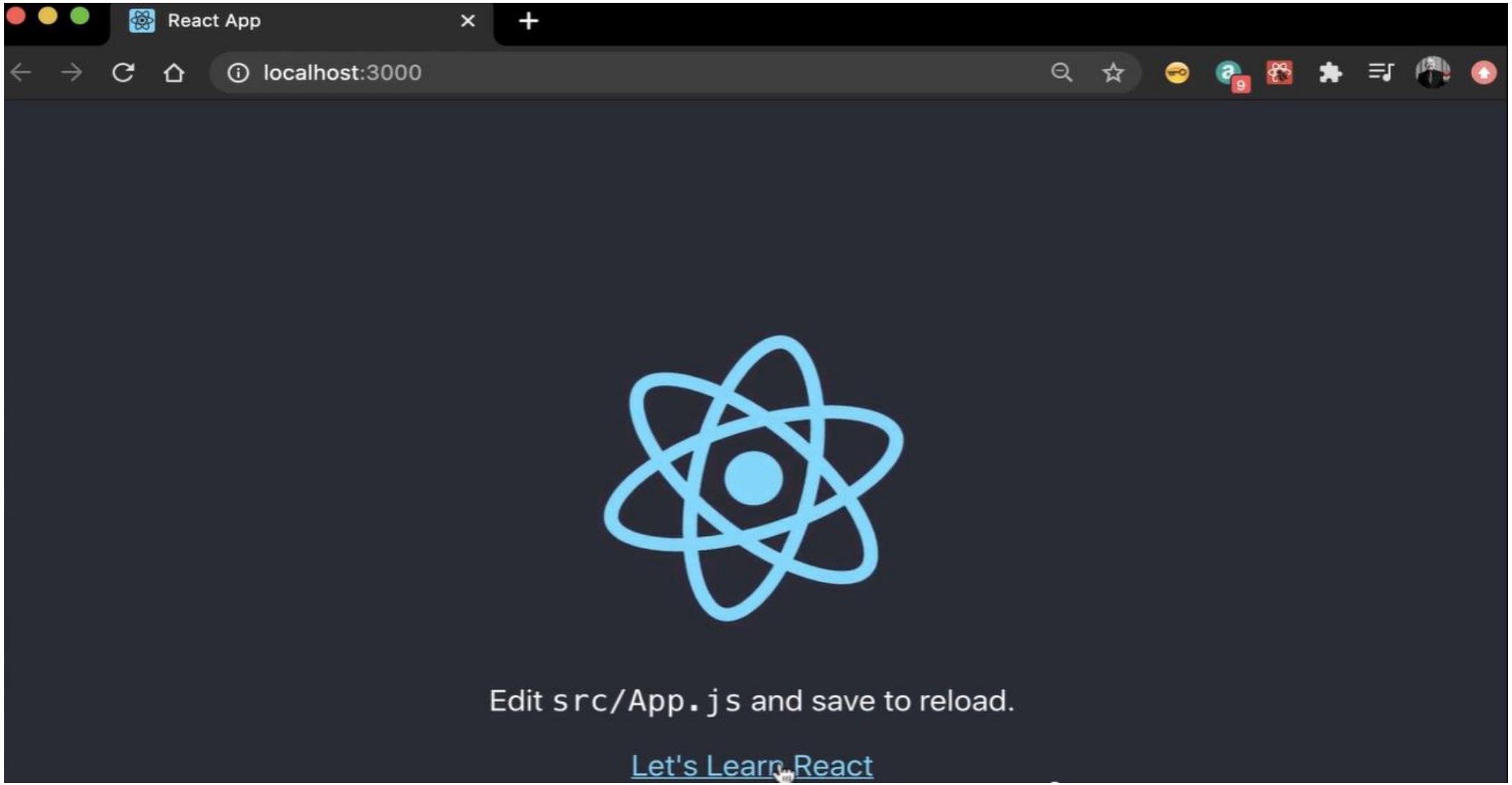
Install Create React App (10/14)



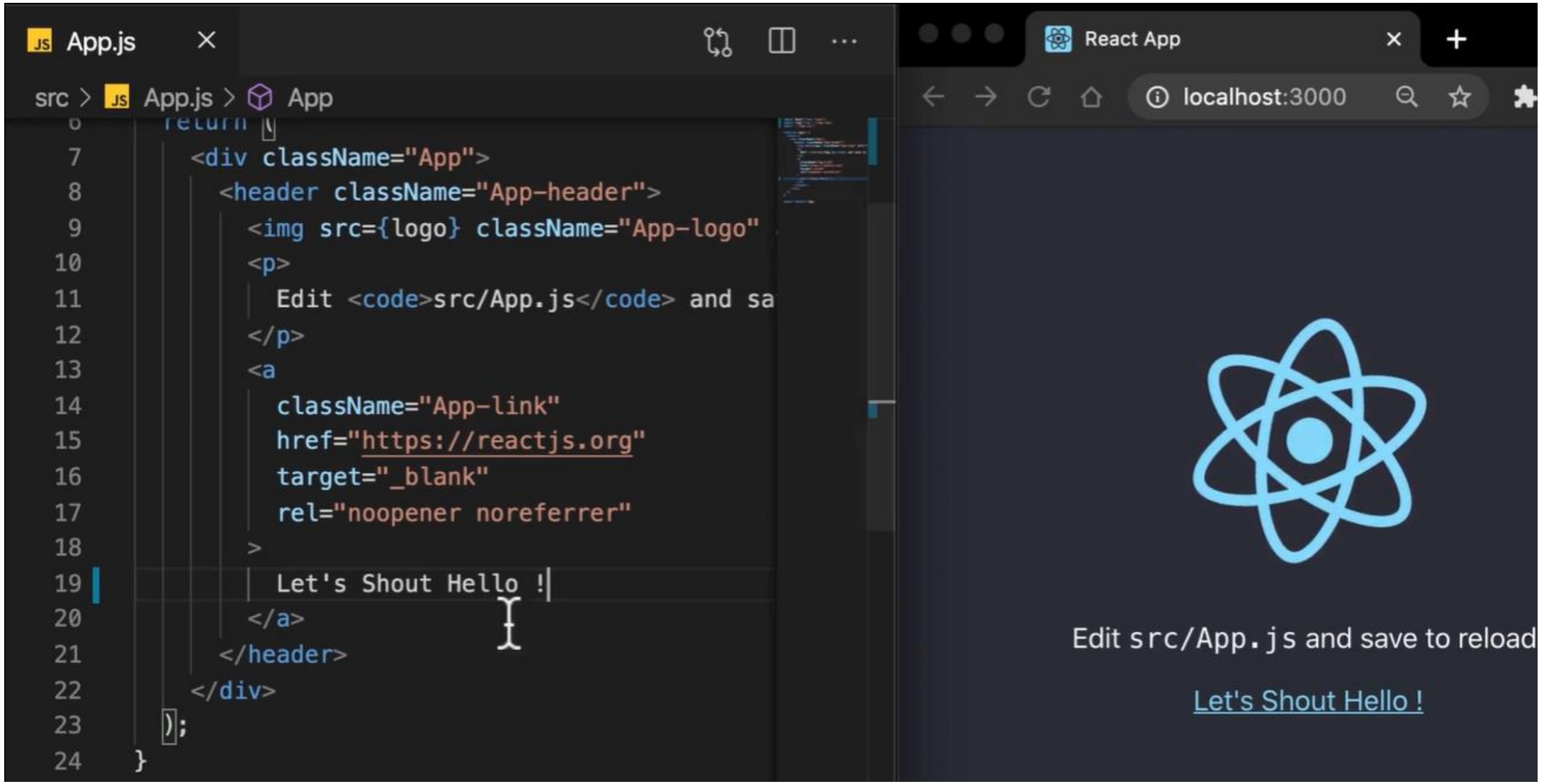
Install Create React App (11/14)



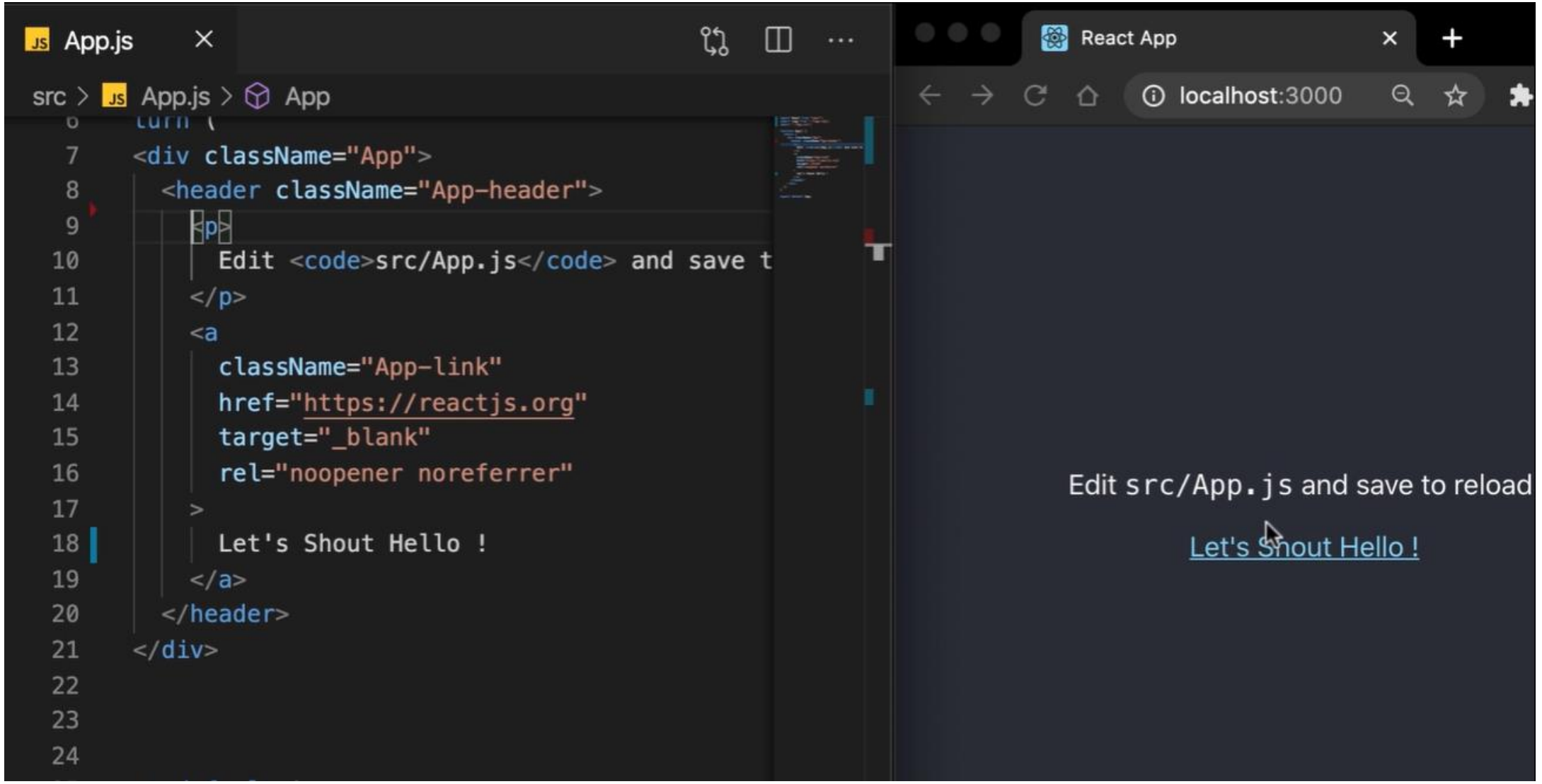
Install Create React App (12/14)



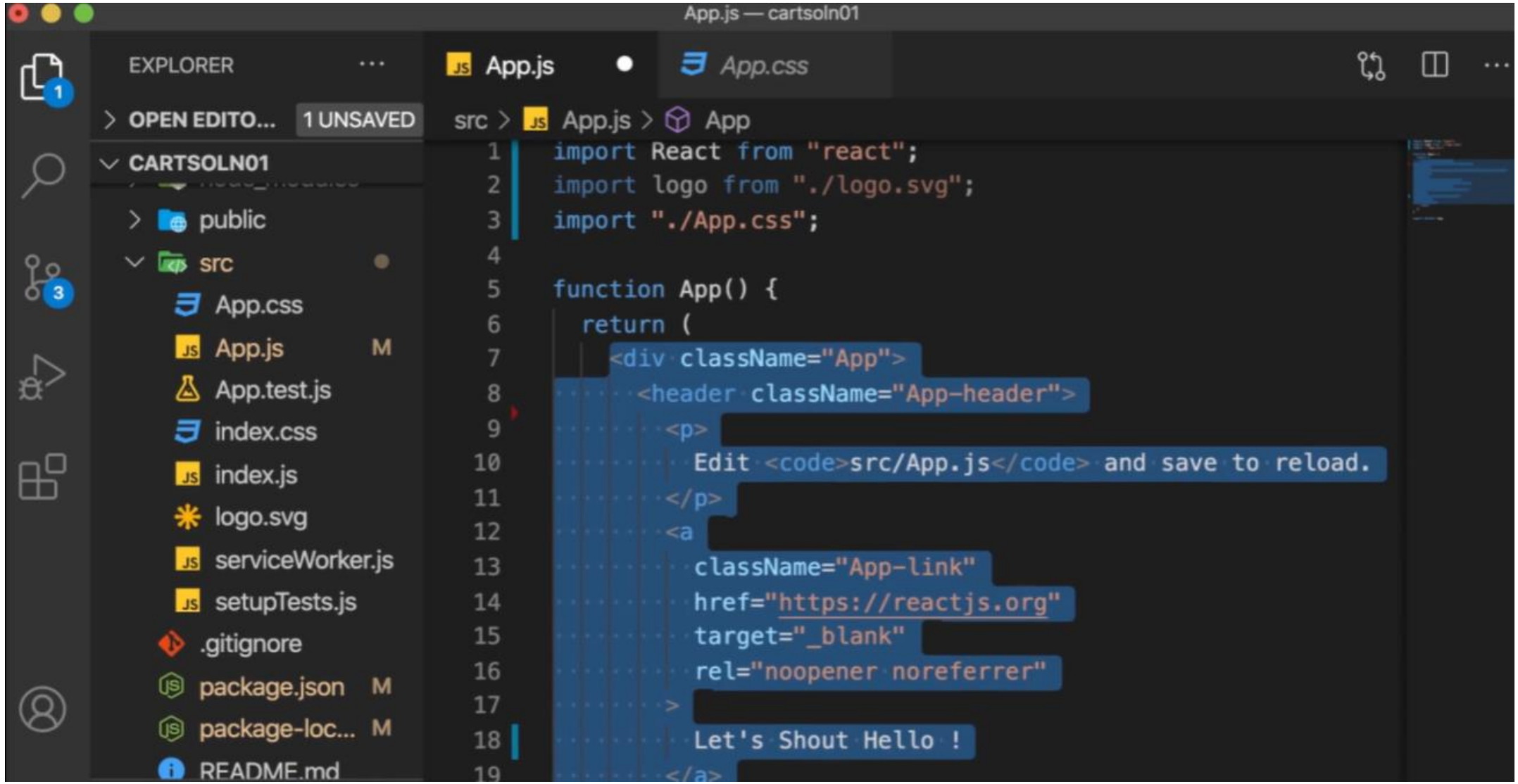
Install Create React App (13/14)



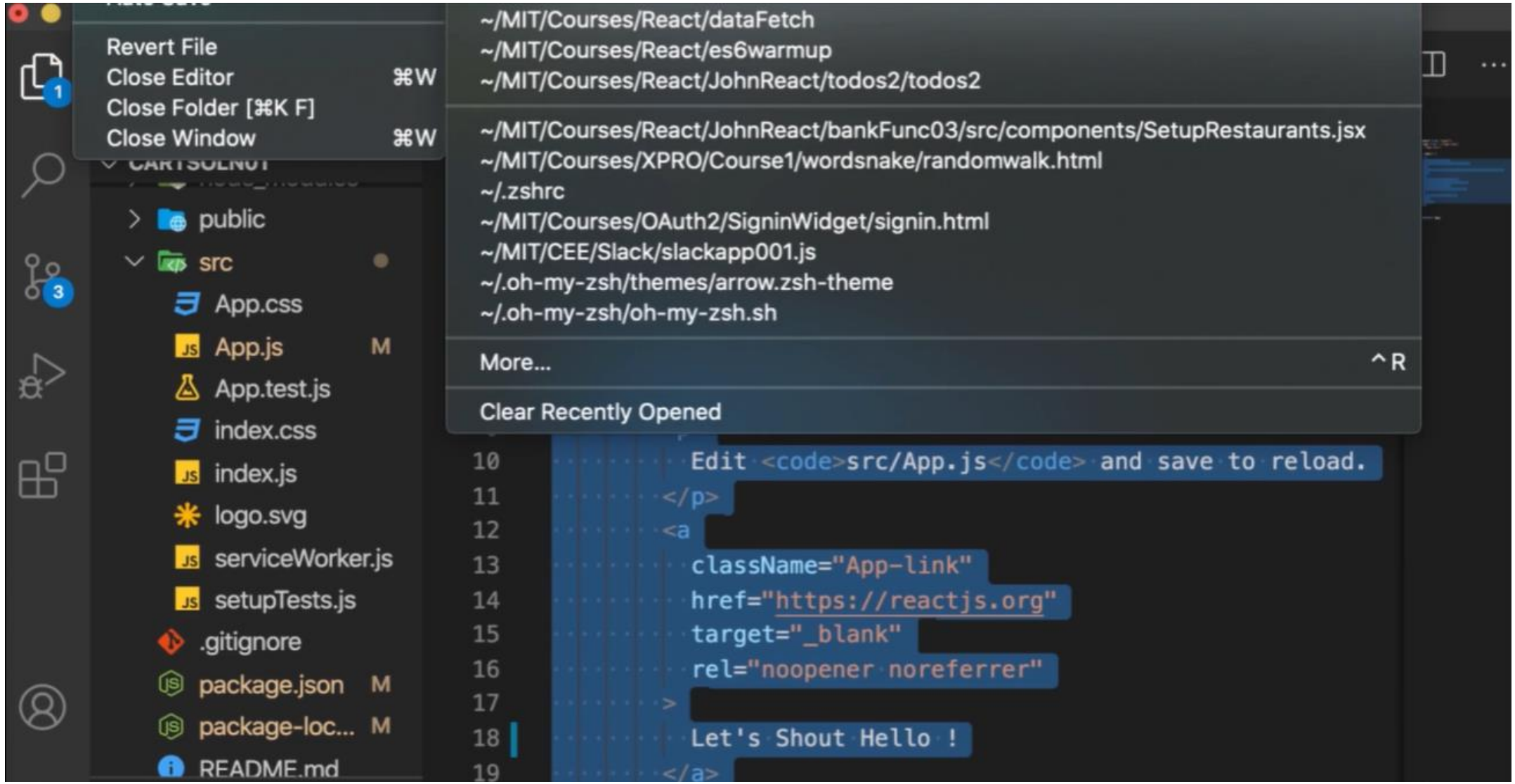
Install Create React App (14/14)



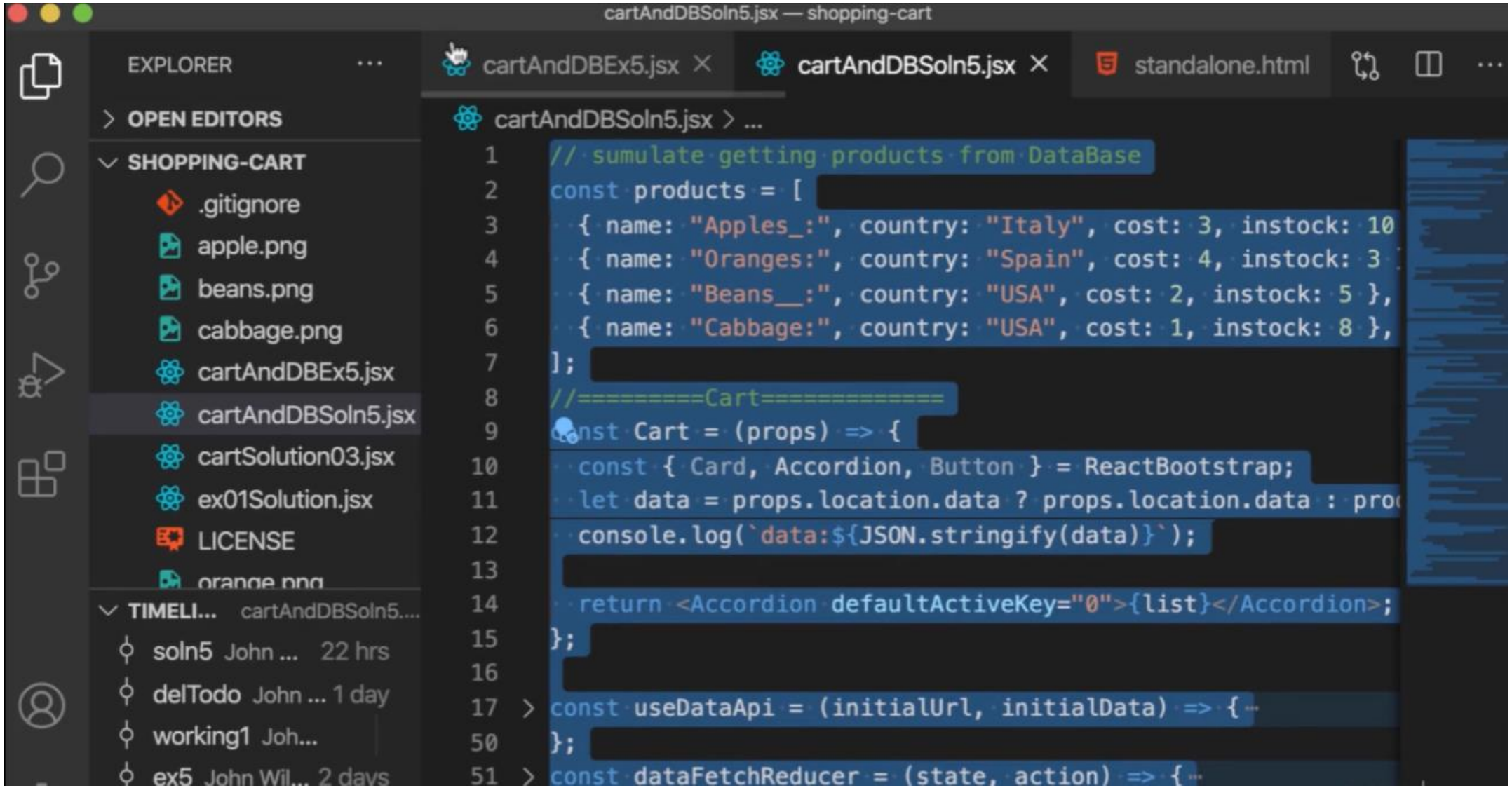
Create React App – Shopping Cart Example (1/25)



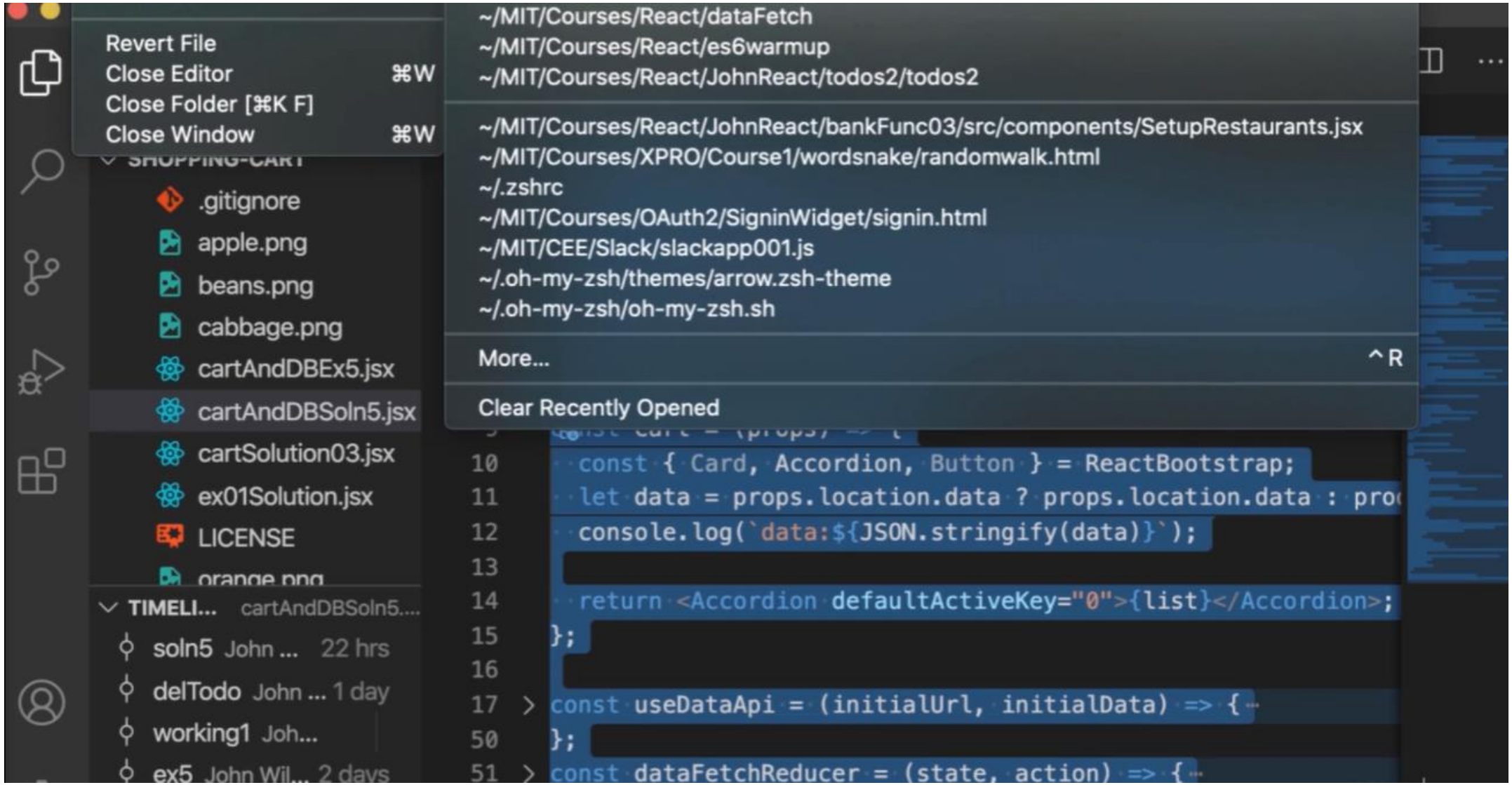
Create React App – Shopping Cart Example (2/25)



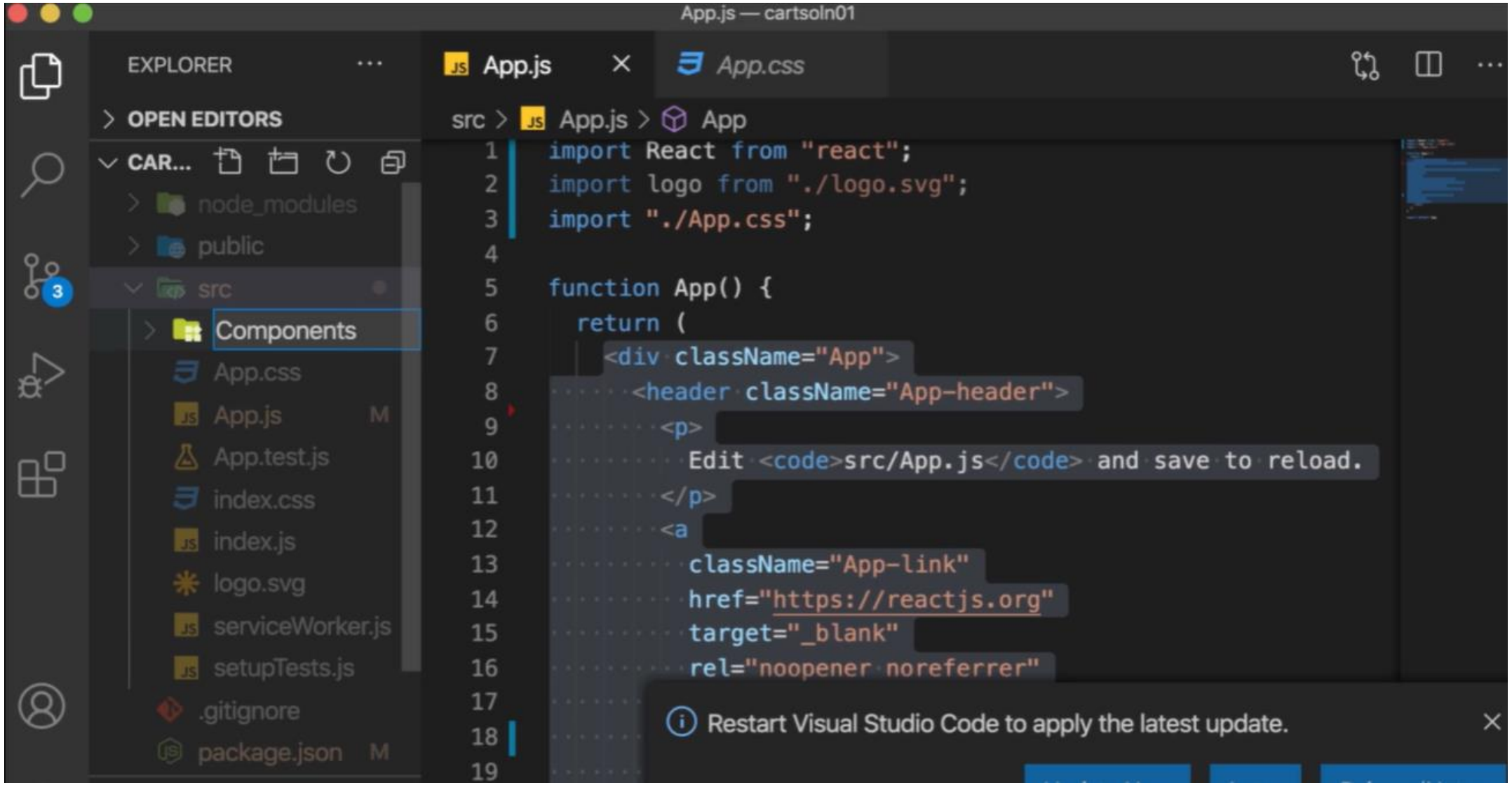
Create React App – Shopping Cart Example (3/25)



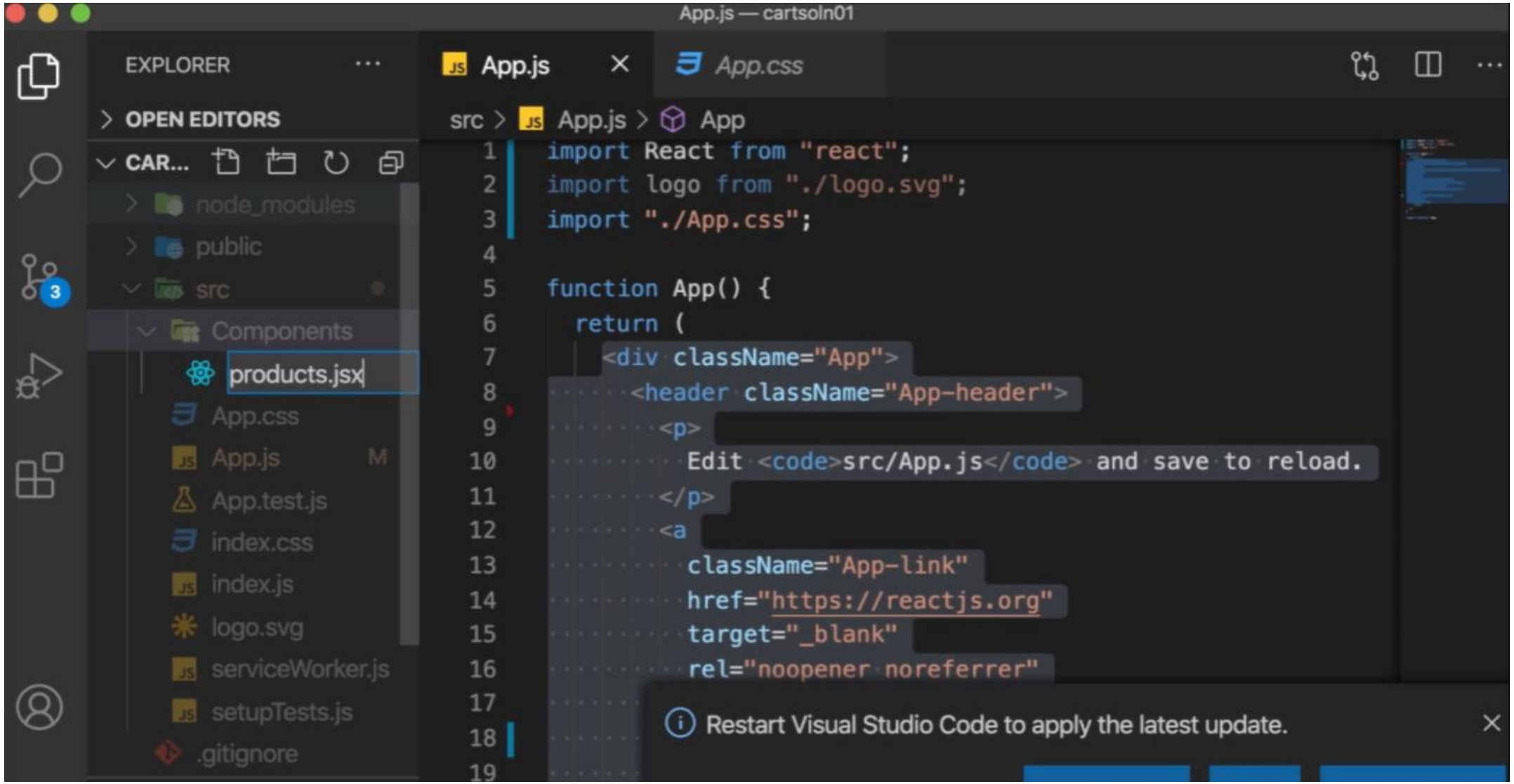
Create React App – Shopping Cart Example (4/25)



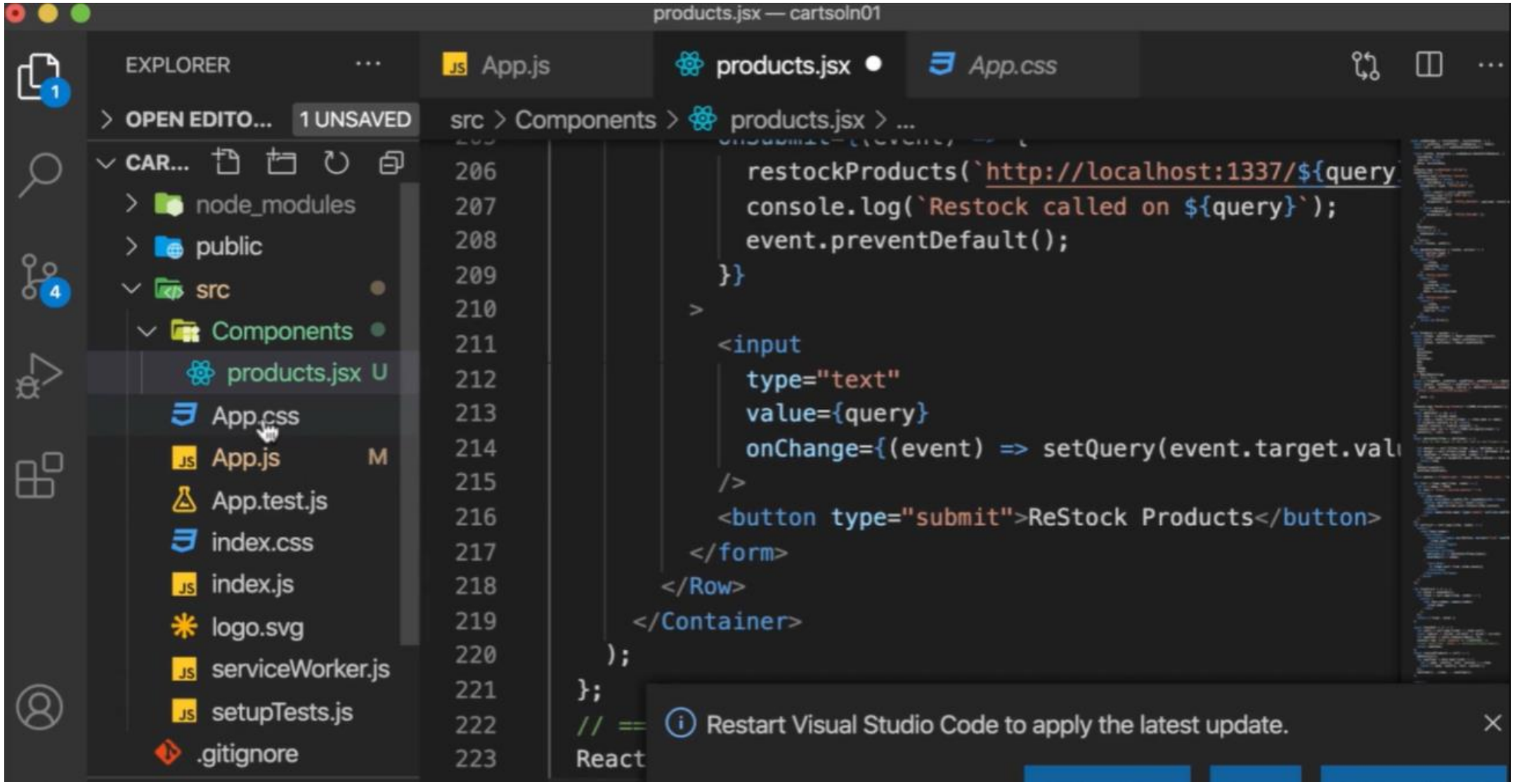
Create React App – Shopping Cart Example (5/25)



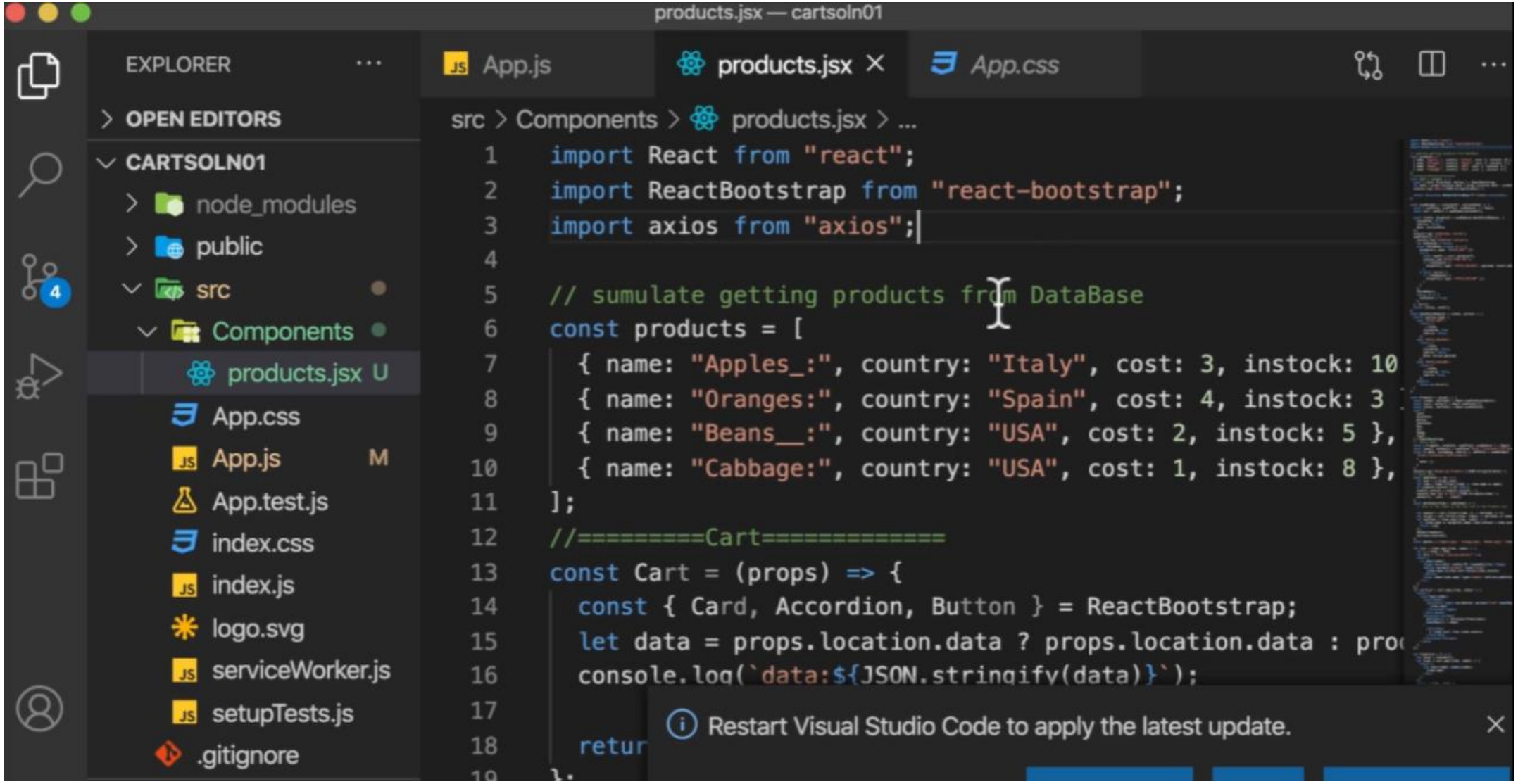
Create React App – Shopping Cart Example (6/25)



Create React App – Shopping Cart Example (7/25)



Create React App – Shopping Cart Example (8/25)



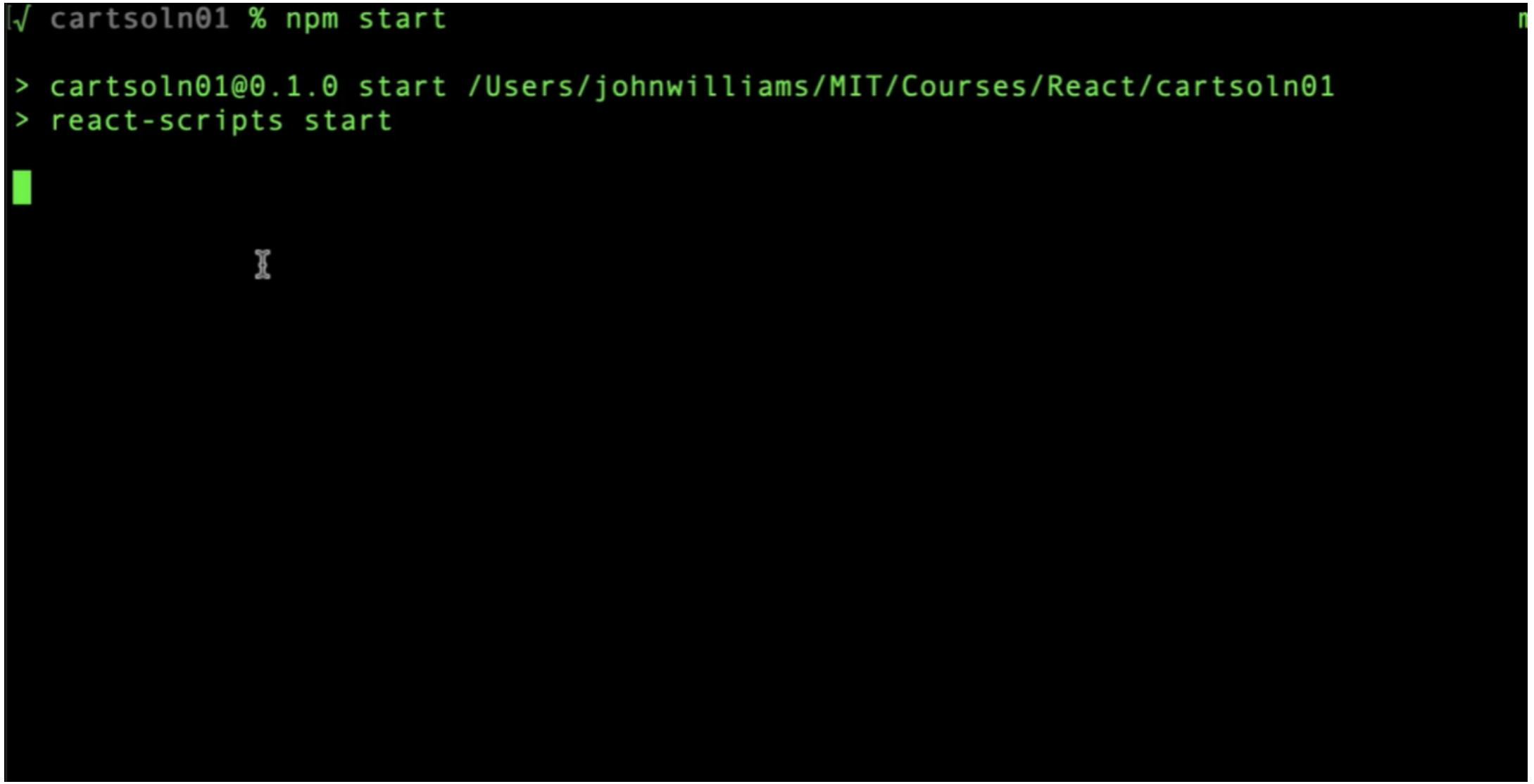
Create React App – Shopping Cart Example (9/25)

```
Compiled with warnings.

./src/App.js
  Line 2:8:  'logo' is defined but never used  no-unused-vars

Search for the keywords to learn more about each warning.
To ignore, add // eslint-disable-next-line to the line before.

^C
[?130 cartsoln01 % npm install react-bootstrap                              n
npm WARN tsutils@3.17.1 requires a peer of typescript@>=2.8.0 || >= 3.2.0-dev || >=
dev || >= 3.4.0-dev || >= 3.5.0-dev || >= 3.6.0-dev || >= 3.6.0-beta || >= 3.7.0-dev
 3.7.0-beta but none is installed. You must install peer dependencies yourself.

+ react-bootstrap@1.3.0
updated 1 package and audited 1645 packages in 10.98s

67 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities

√ cartsoln01 %                                                              n
```

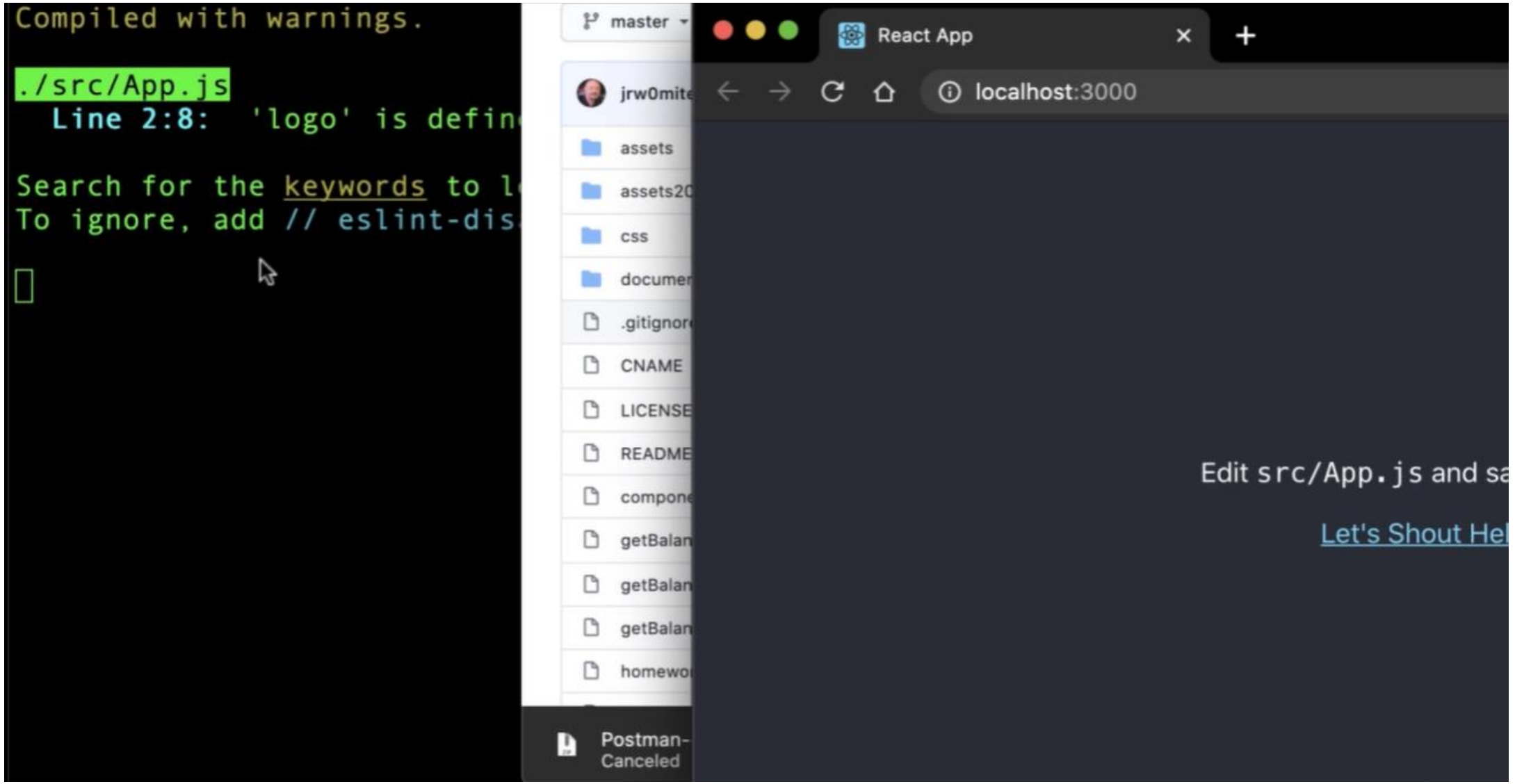
Create React App – Shopping Cart Example (10/25)

```
dev || >= 3.4.0-dev || >= 3.5.0-dev || >= 3.6.0-dev || >= 3.6.0-beta || >= 3.7.0-dev
 3.7.0-beta but none is installed. You must install peer dependencies yourself.

+ react-bootstrap@1.3.0
updated 1 package and audited 1645 packages in 10.98s

67 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities

[√ cartsoln01 % npm install axios                                              n
npm WARN tsutils@3.17.1 requires a peer of typescript@>=2.8.0 || >= 3.2.0-dev || >=
dev || >= 3.4.0-dev || >= 3.5.0-dev || >= 3.6.0-dev || >= 3.6.0-beta || >= 3.7.0-dev
 3.7.0-beta but none is installed. You must install peer dependencies yourself.

+ axios@0.20.0
updated 1 package and audited 1645 packages in 9.649s

68 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
```

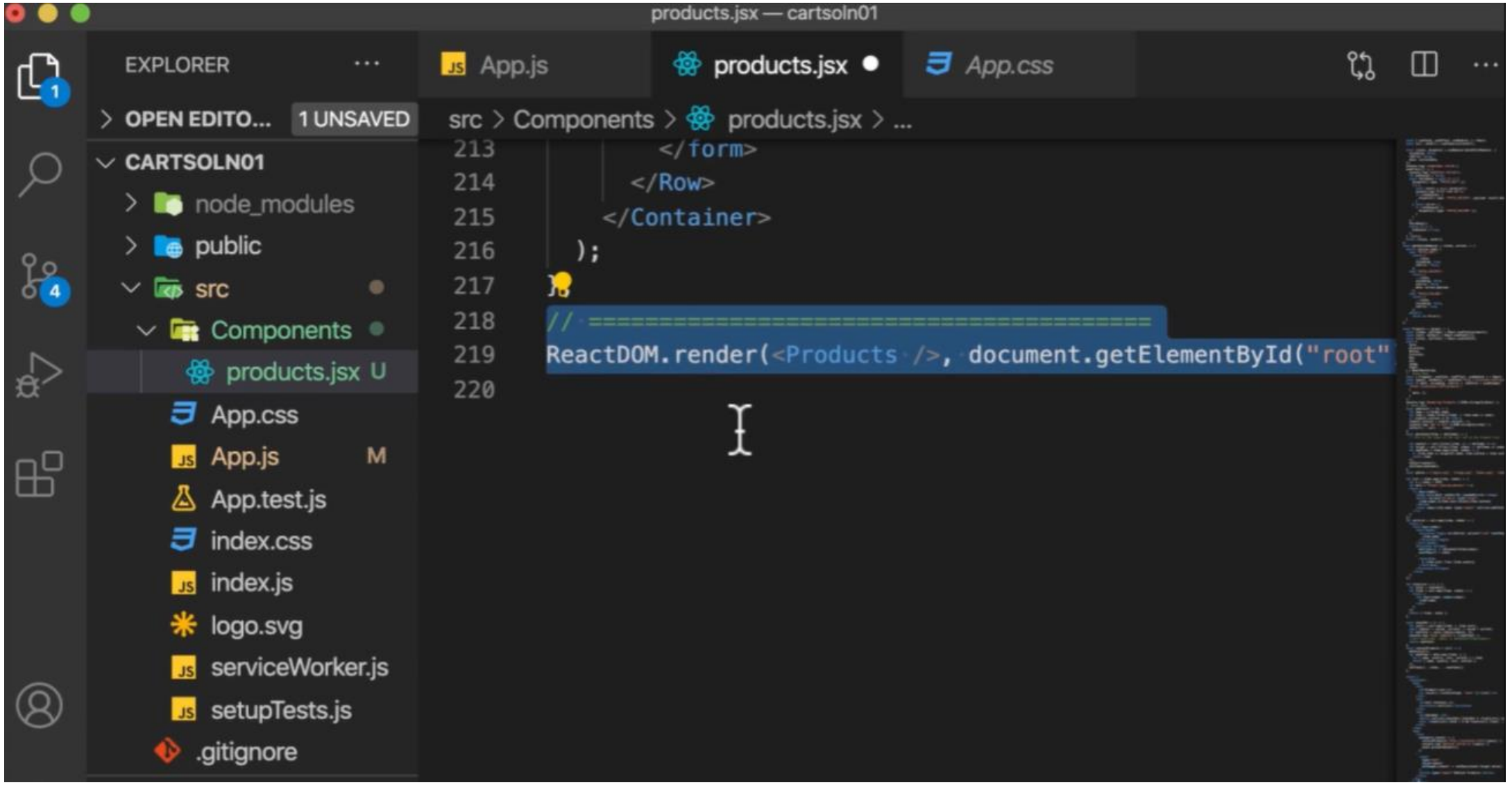
Create React App – Shopping Cart Example (11/25)



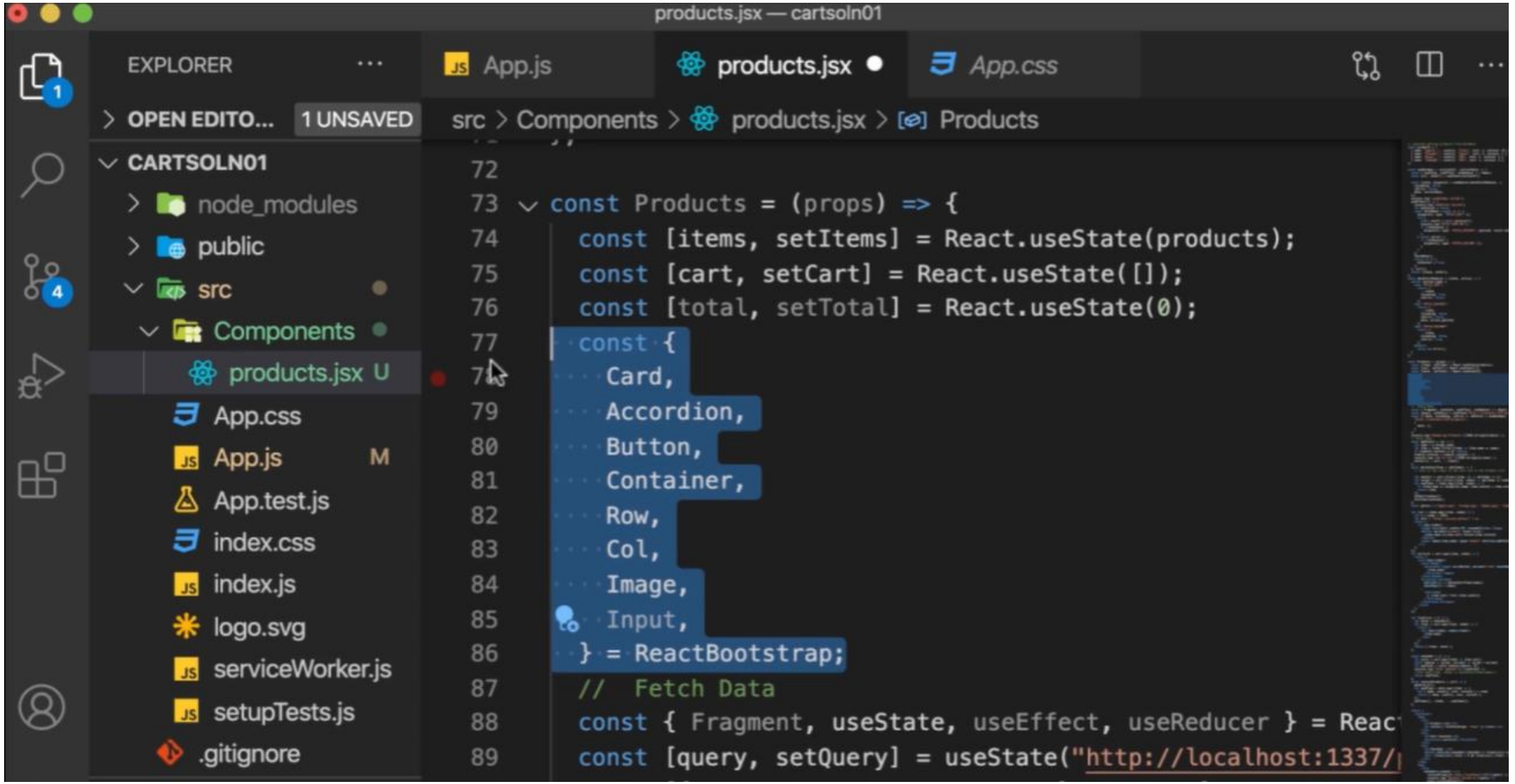
Create React App – Shopping Cart Example (12/25)



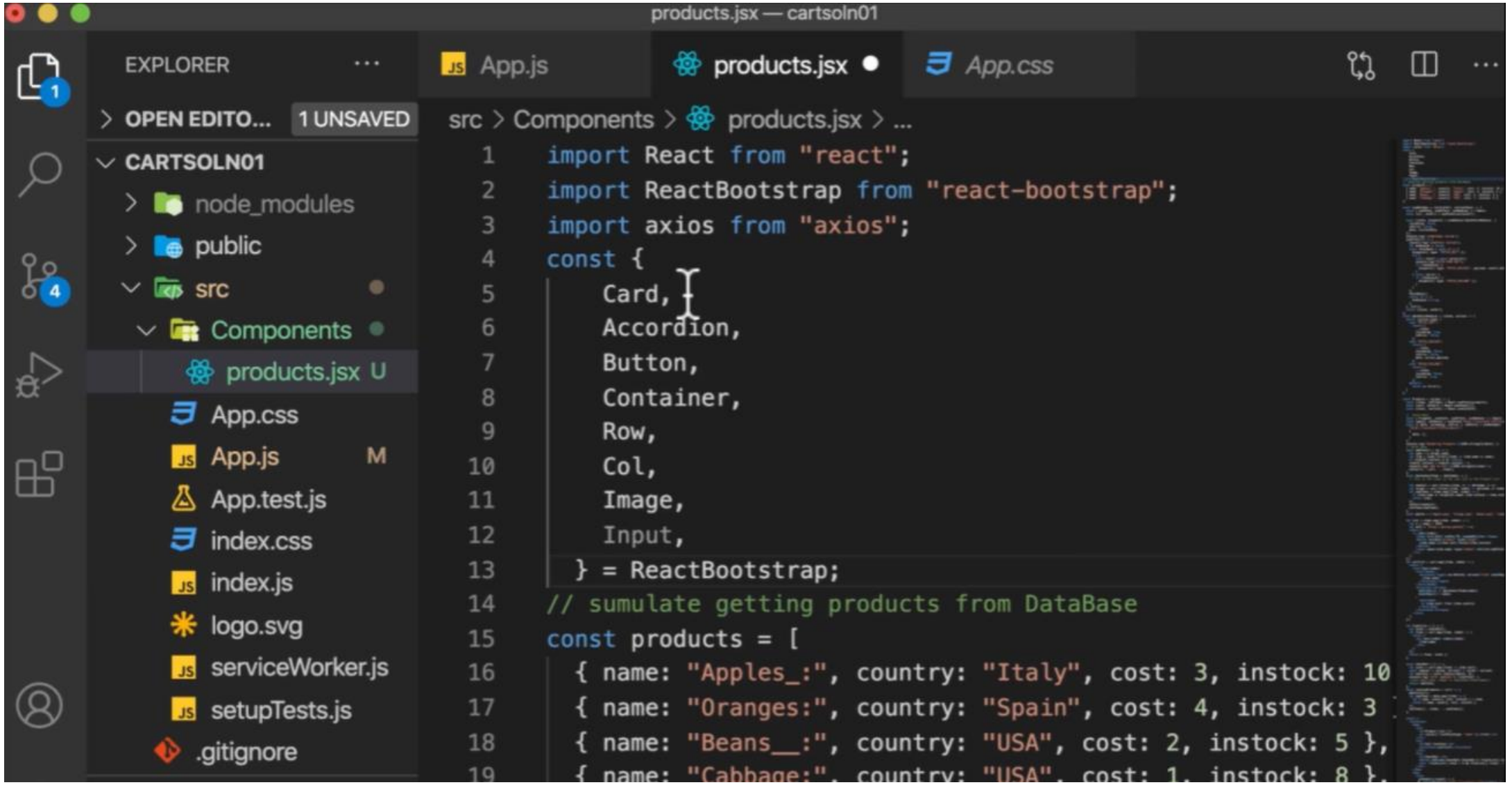
Create React App – Shopping Cart Example (13/25)



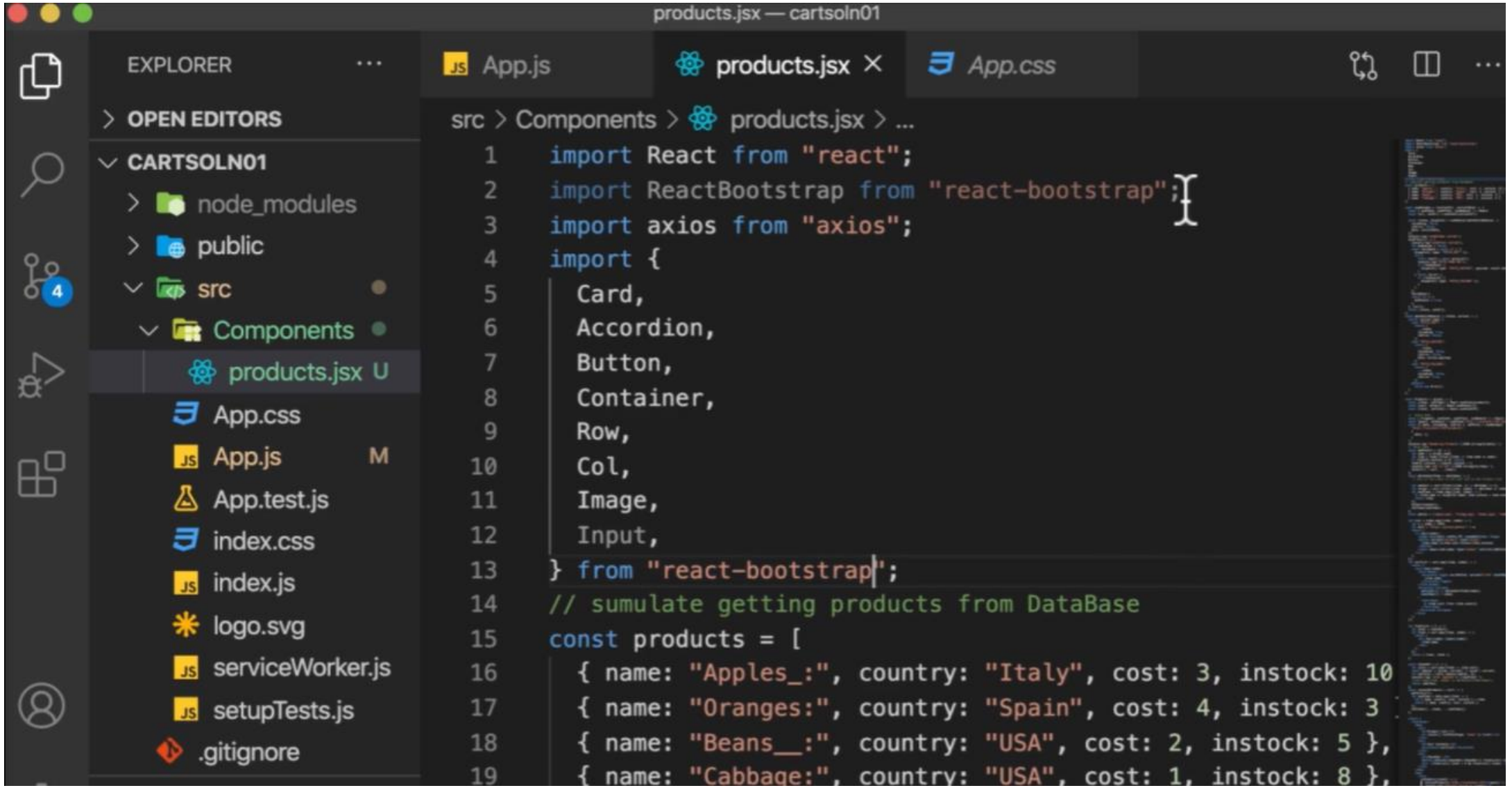
Create React App – Shopping Cart Example (14/25)



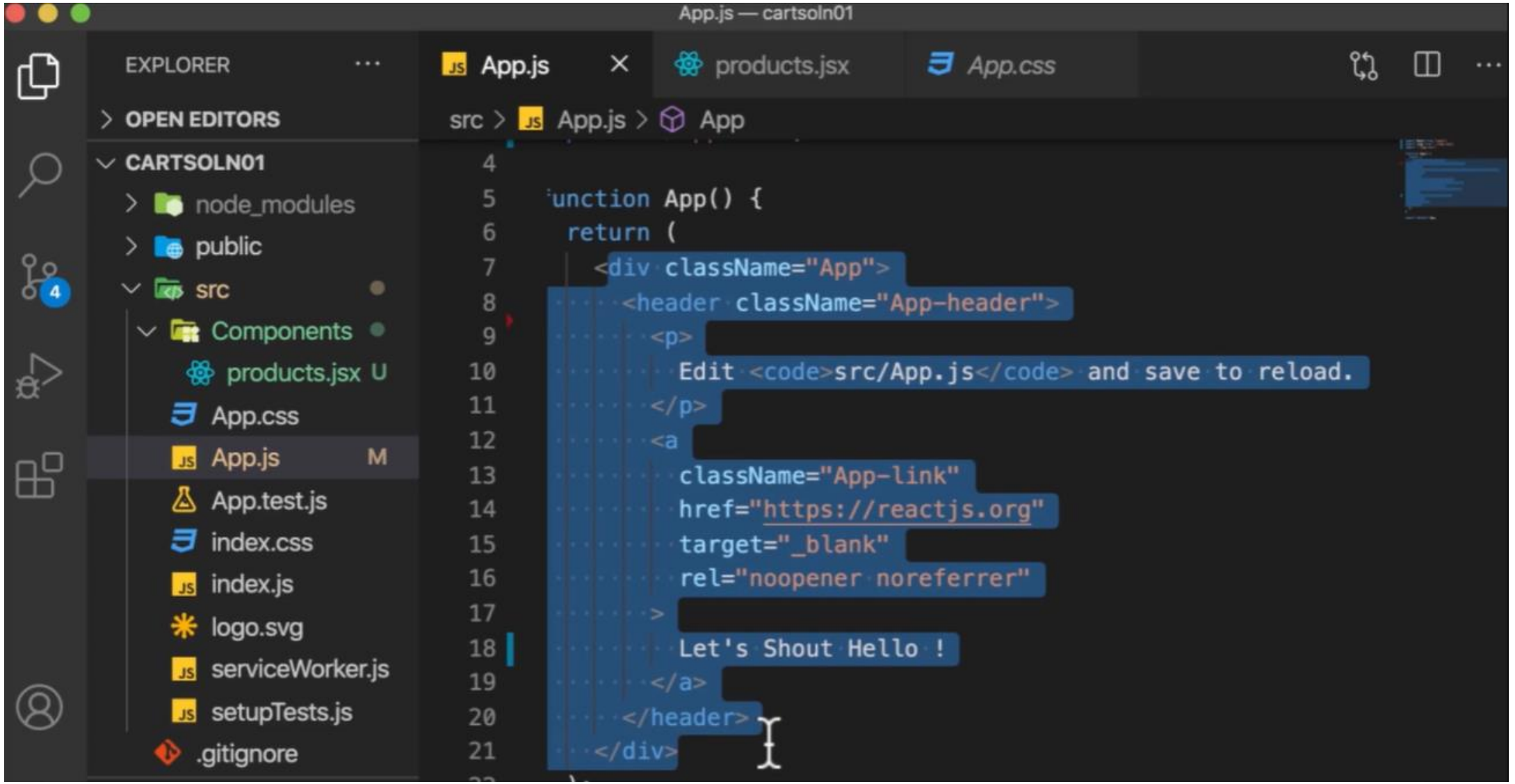
Create React App – Shopping Cart Example (15/25)



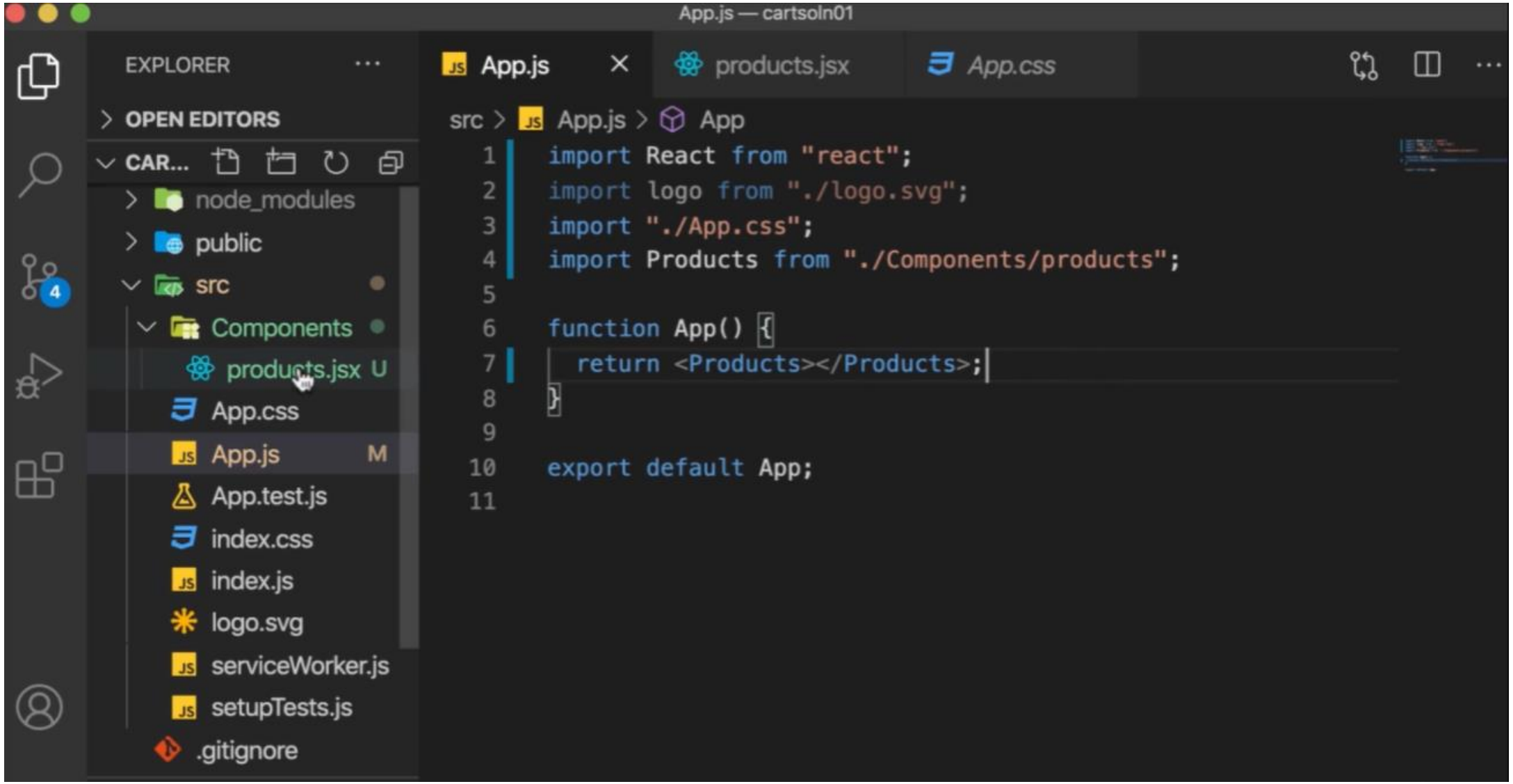
Create React App – Shopping Cart Example (16/25)



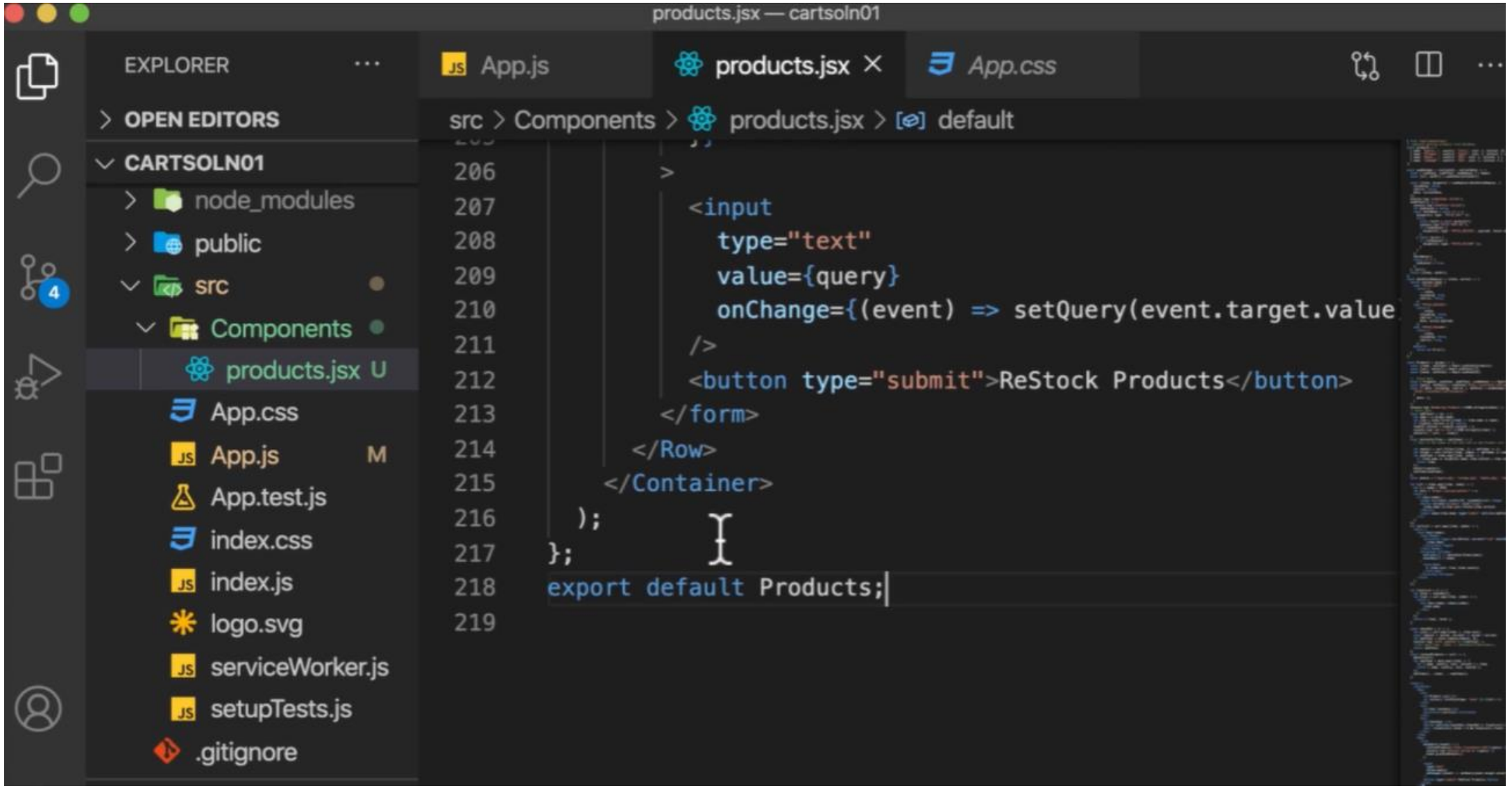
Create React App – Shopping Cart Example (17/25)



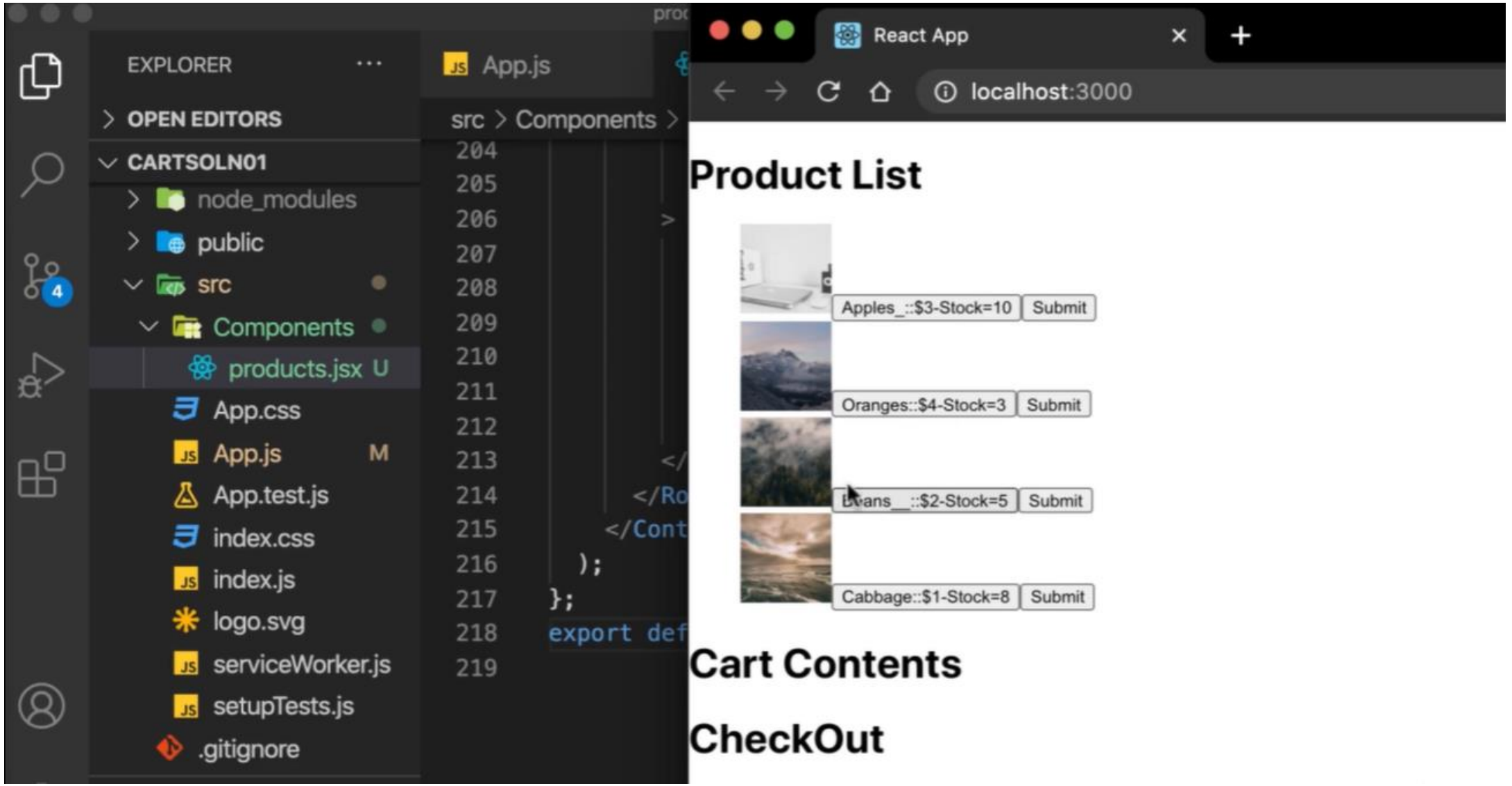
Create React App – Shopping Cart Example (18/25)



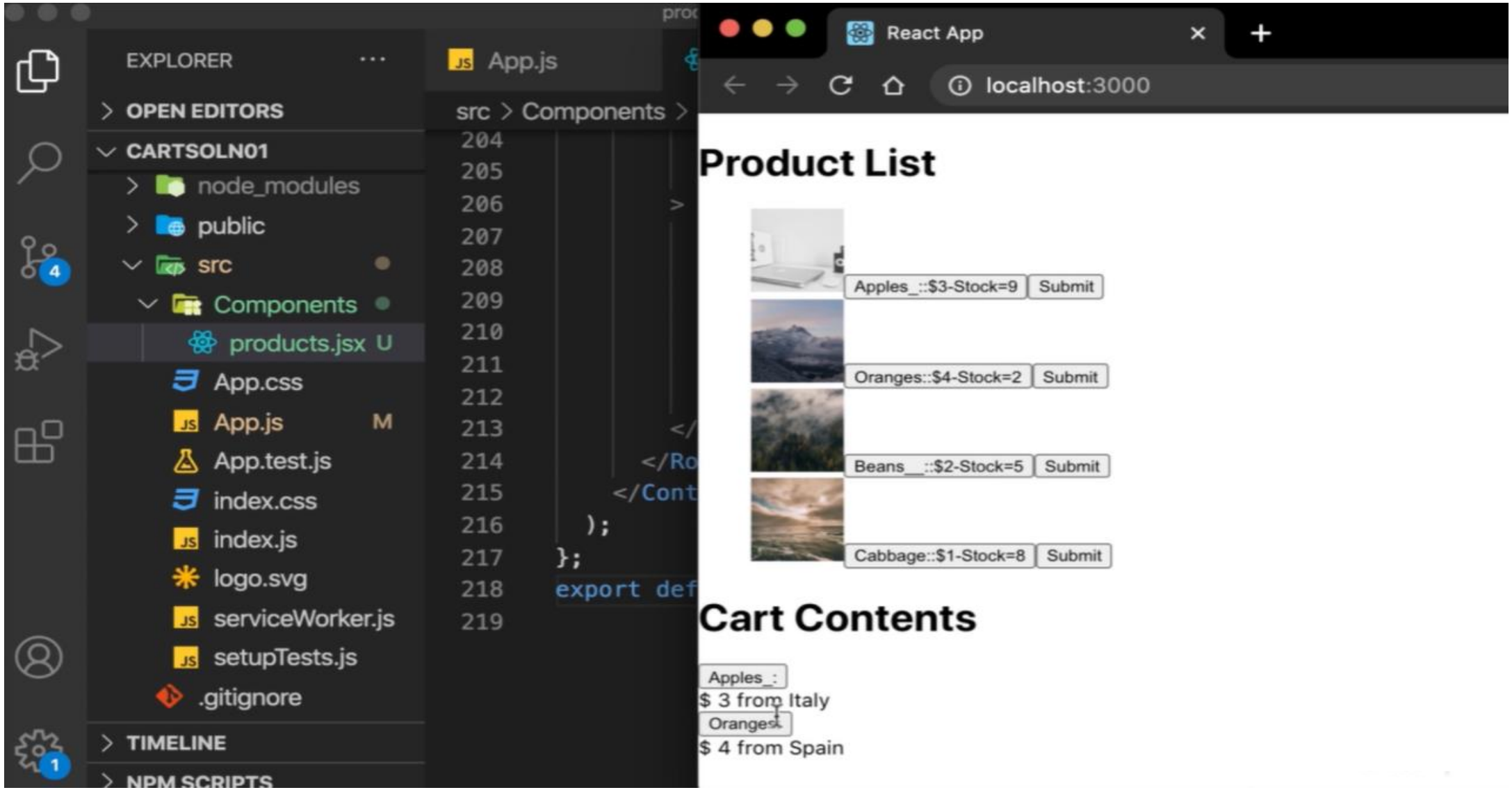
Create React App – Shopping Cart Example (19/25)



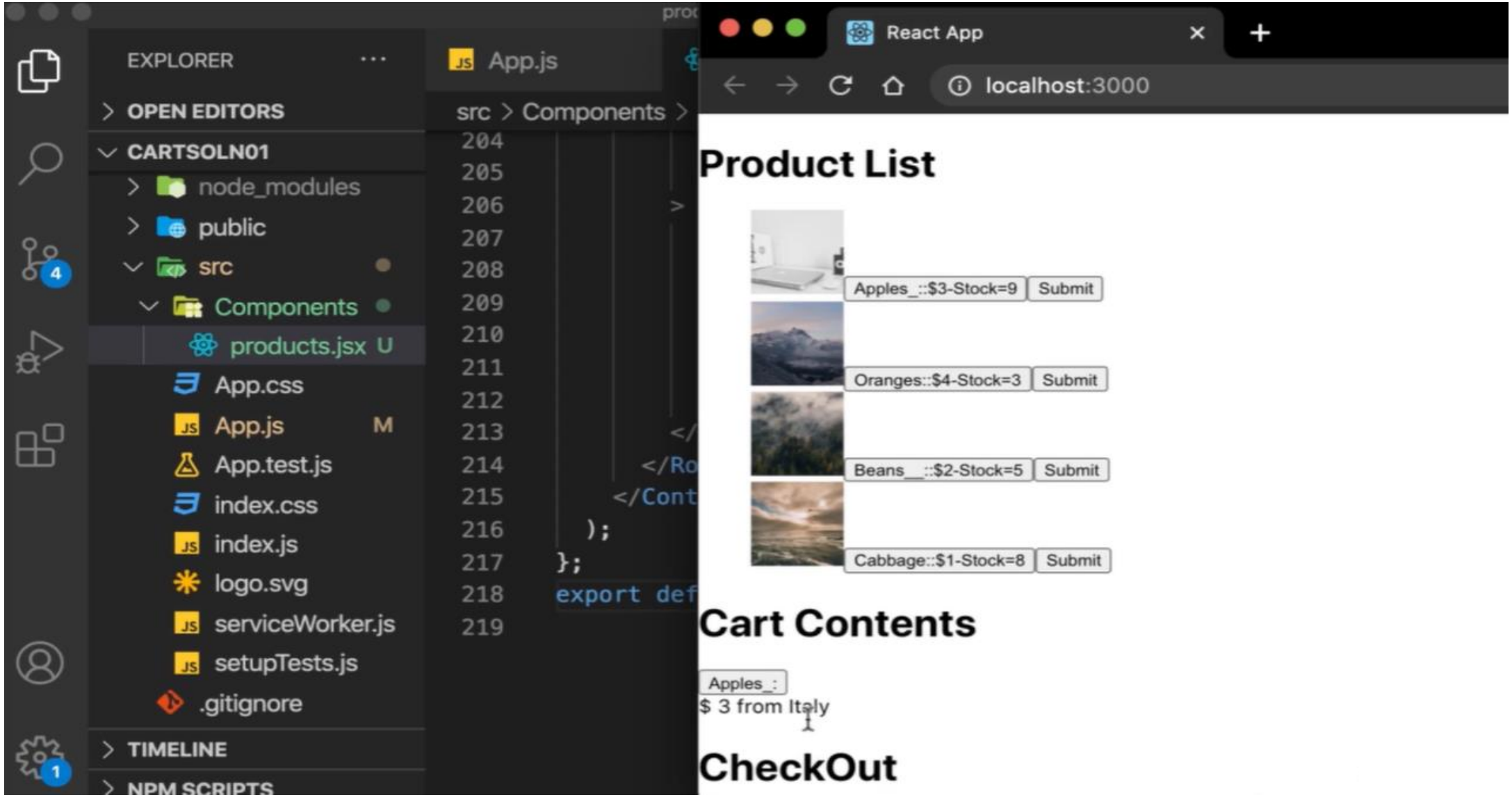
Create React App – Shopping Cart Example (20/25)



Create React App – Shopping Cart Example (21/25)



Create React App – Shopping Cart Example (22/25)



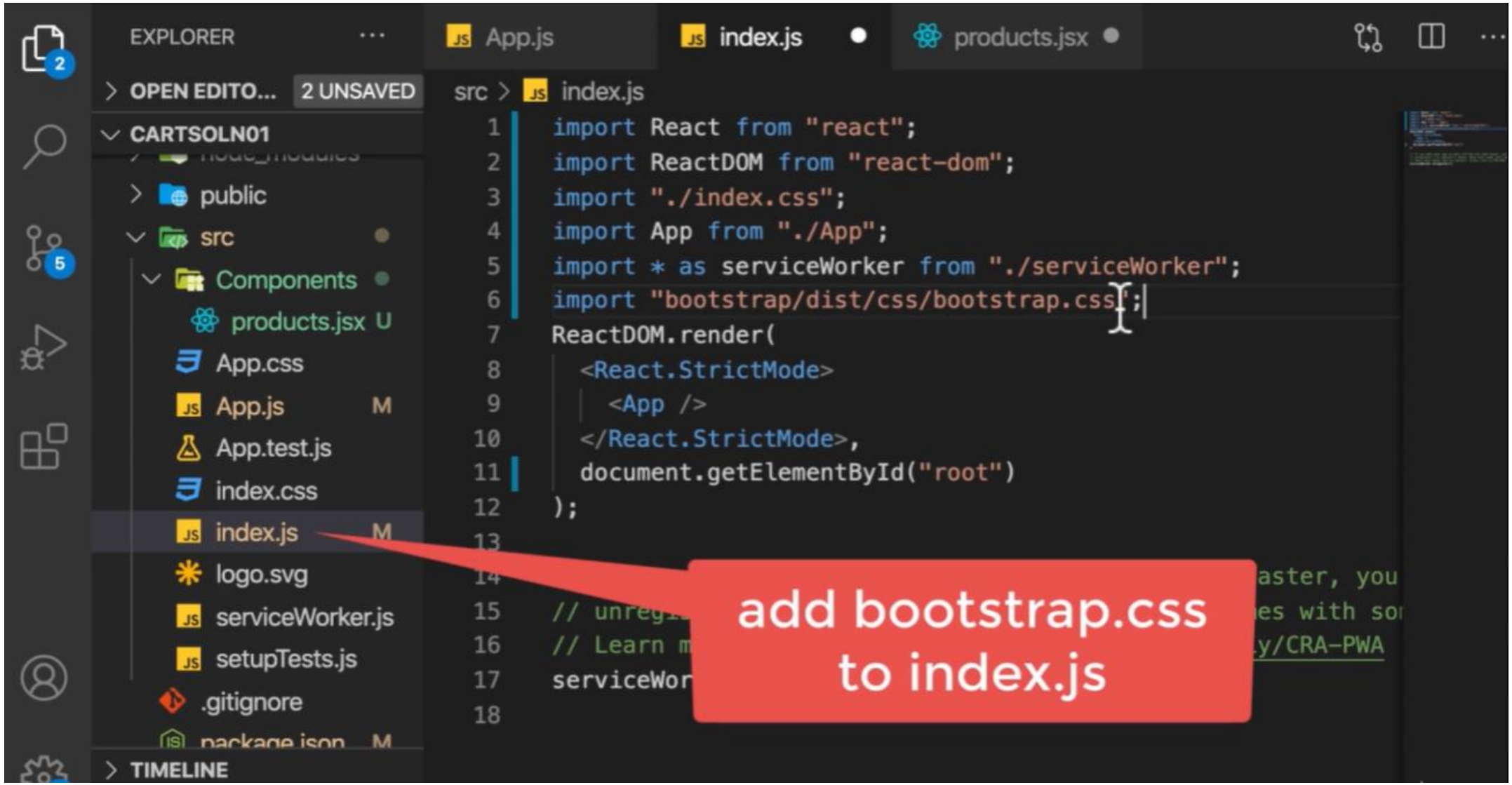
Create React App – Shopping Cart Example (23/25)

```
  Line 109:53:  Expected '!==' and instead saw '!='          eqeqeq
  Line 110:56:  Expected '===' and instead saw '=='          eqeqeq
  Line 112:21:  Expected '===' and instead saw '=='          eqeqeq
  Line 118:9:   'photos' is assigned a value but never used  no-unused-vars

./src/App.js
  Line 2:8:  'logo' is defined but never used  no-unused-vars

Search for the keywords to learn more about each warning.
To ignore, add // eslint-disable-next-line to the line before.

^C
?130 cartsoln01 % npm install bootstrap                                    m
⸨                    ⸩ ⁝ rollbackFailedOptional: verb npm-session 1488a0bb3a9dbcbc
npm WARN tsutils@3.17.1 requires a peer of typescript@>=2.8.0 || >= 3.2.0-dev || >=
dev || >= 3.4.0-dev || >= 3.5.0-dev || >= 3.6.0-dev || >= 3.6.0-beta || >= 3.7.0-dev
 3.7.0-beta but none is installed. You must install peer dependencies yourself.
npm WARN bootstrap@4.5.2 requires a peer of jquery@1.9.1 - 3 but none is installed.
st install peer dependencies yourself.
npm WARN bootstrap@4.5.2 requires a peer of popper.js@^1.16.1 but none is installed.
ust install peer dependencies yourself.

+ bootstrap@4.5.2
updated 1 package and audited 1646 packages in 9.39s
```

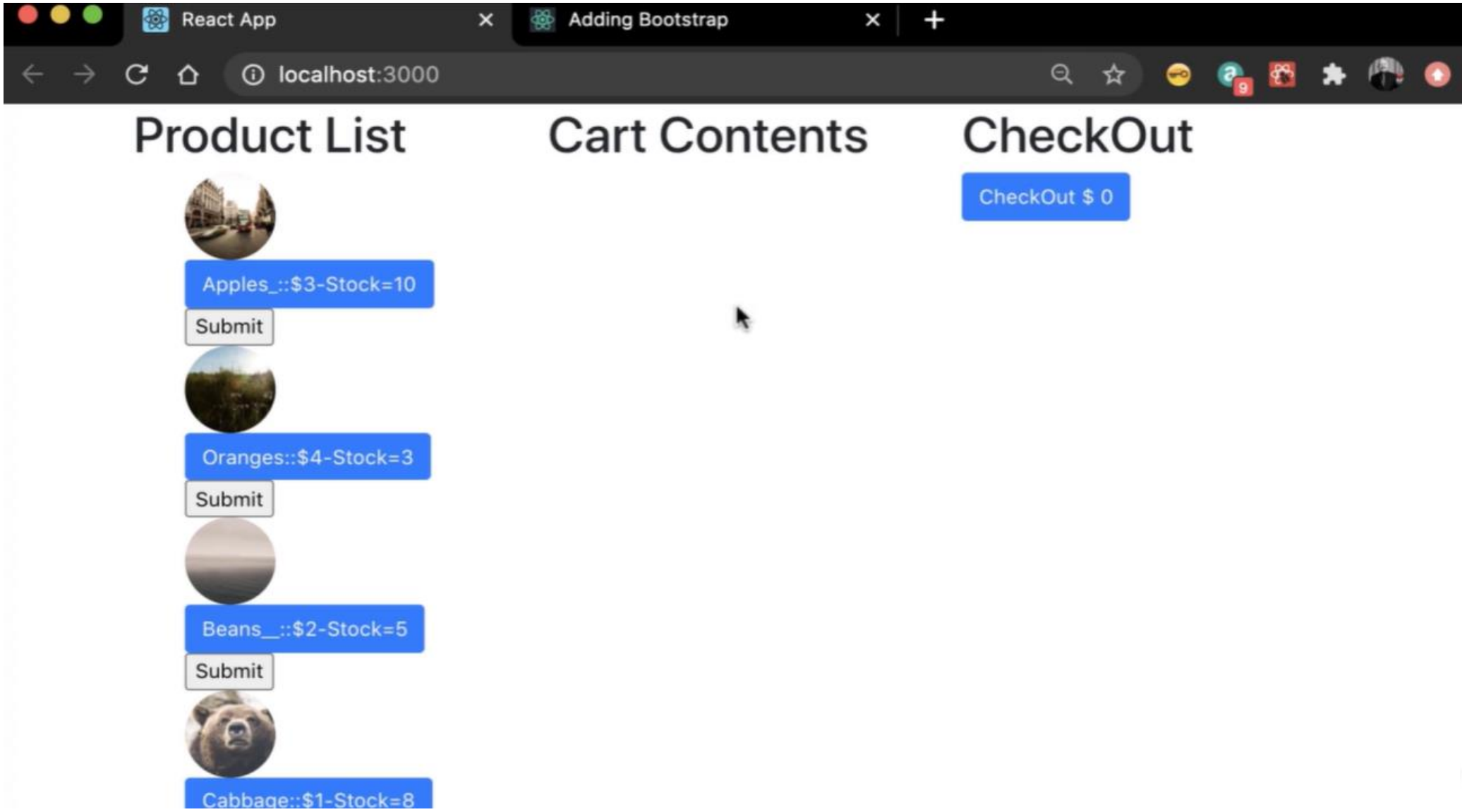
Create React App – Shopping Cart Example (24/25)

```
?130 cartsoln01 % npm install bootstrap                                    m
⸨                        ⸩ ⁝ rollbackFailedOptional: verb npm-session 1488a0bb3a9dbcbc
npm WARN tsutils@3.17.1 requires a peer of typescript@>=2.8.0 || >= 3.2.0-dev || >=
dev || >= 3.4.0-dev || >= 3.5.0-dev || >= 3.6.0-dev || >= 3.6.0-beta || >= 3.7.0-dev
 3.7.0-beta but none is installed. You must install peer dependencies yourself.
npm WARN bootstrap@4.5.2 requires a peer of jquery@1.9.1 - 3 but none is installed.
st install peer dependencies yourself.
npm WARN bootstrap@4.5.2 requires a peer of popper.js@^1.16.1 but none is installed.
ust install peer dependencies yourself.

+ bootstrap@4.5.2
updated 1 package and audited 1646 packages in 9.39s

69 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities

√ cartsoln01 %                                                             m
√ cartsoln01 % npm start                                                   m

> cartsoln01@0.1.0 start /Users/johnwilliams/MIT/Courses/React/cartsoln01
> react-scripts start
```

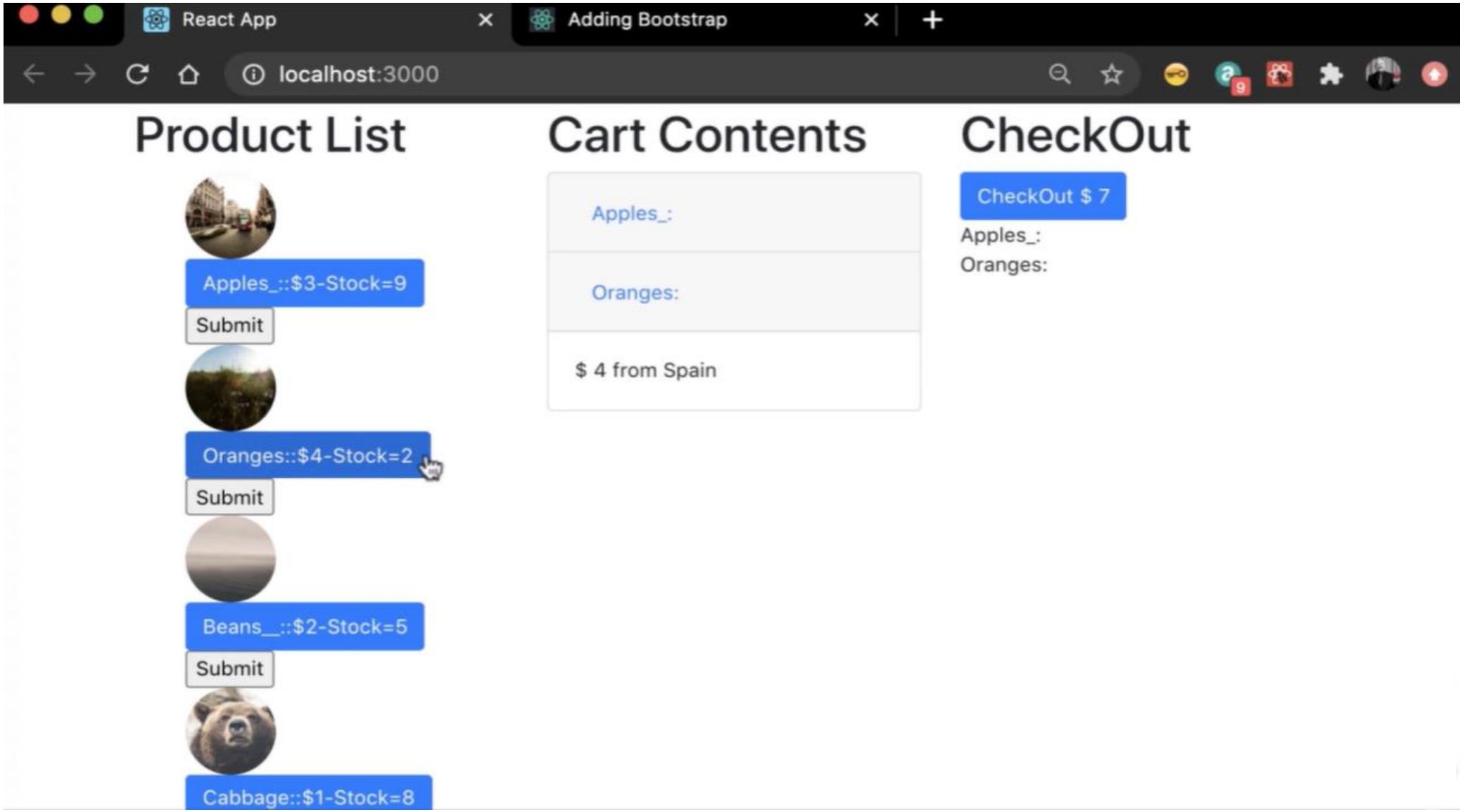
Create React App – Shopping Cart Example (25/25)



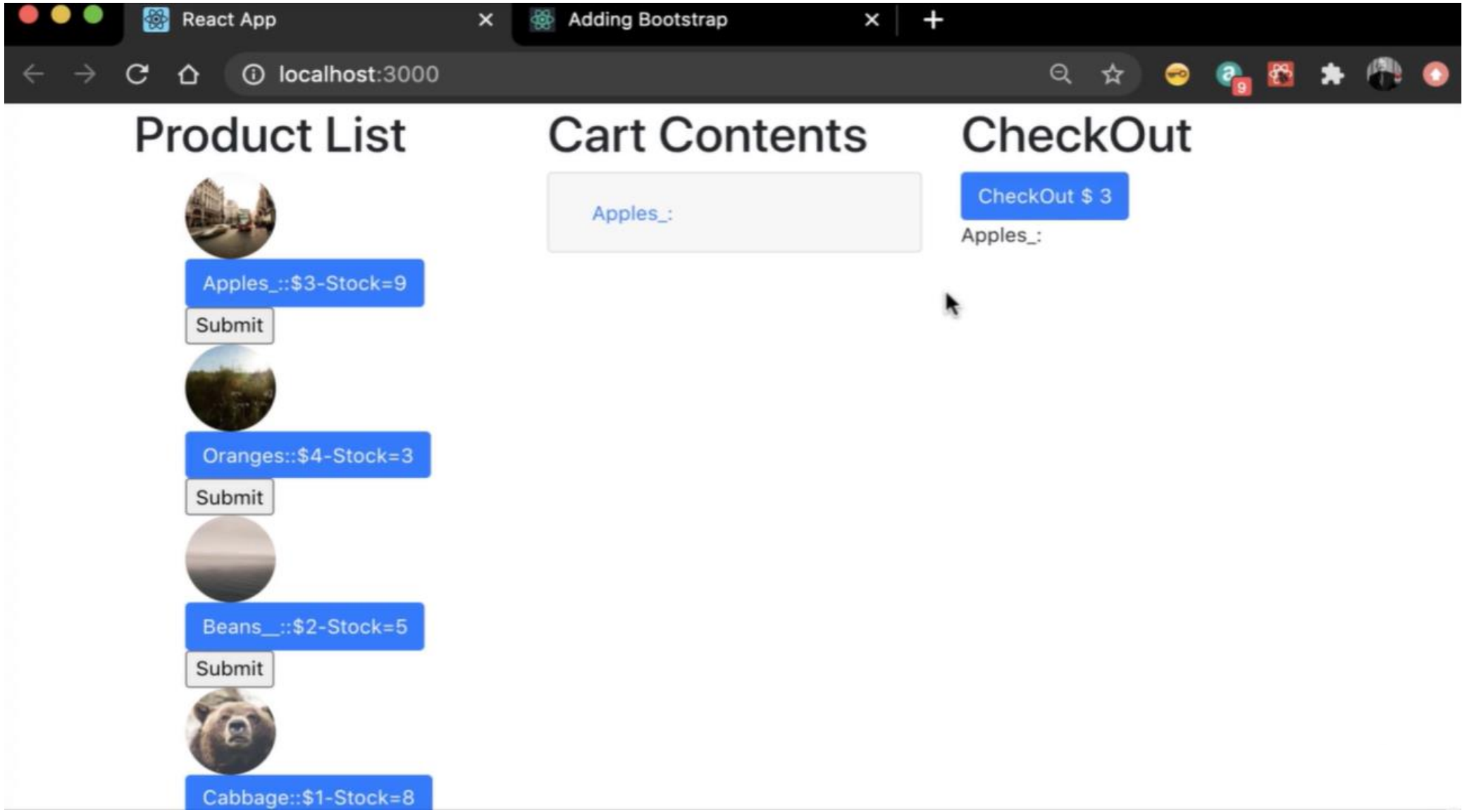
Create React App – Shopping Cart Example: Output (1/3)



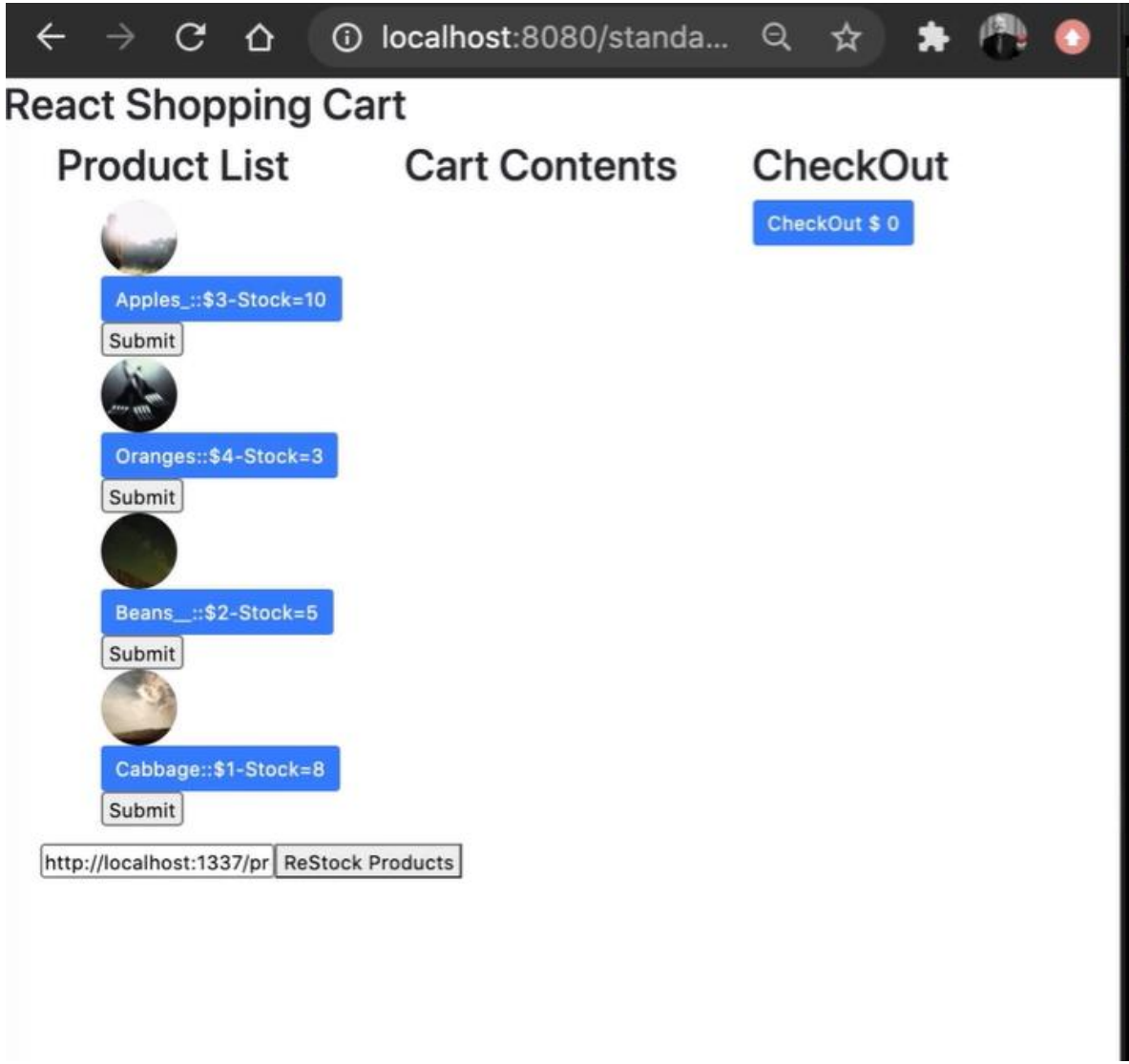
Create React App – Shopping Cart Example: Output (2/3)

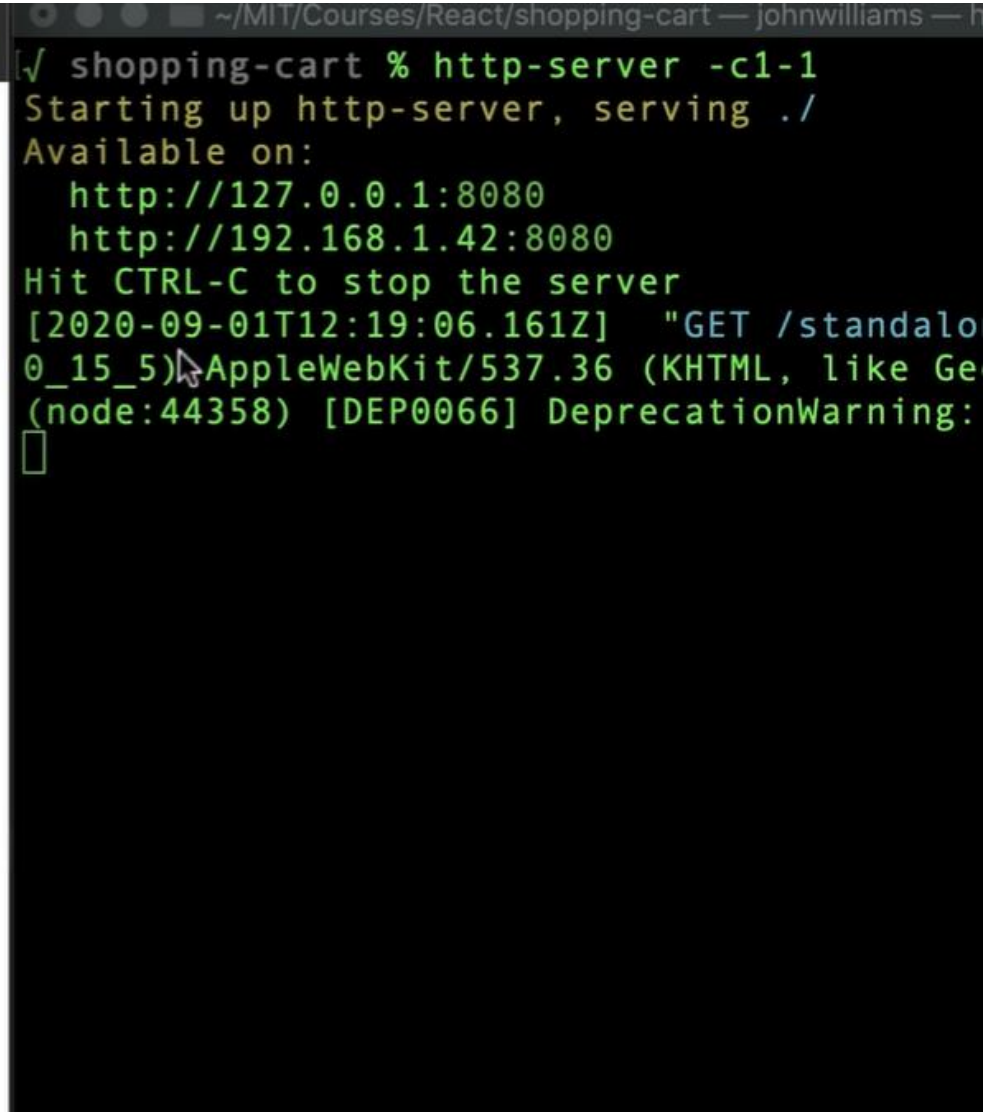


Create React App – Shopping Cart Example: Output (3/3)

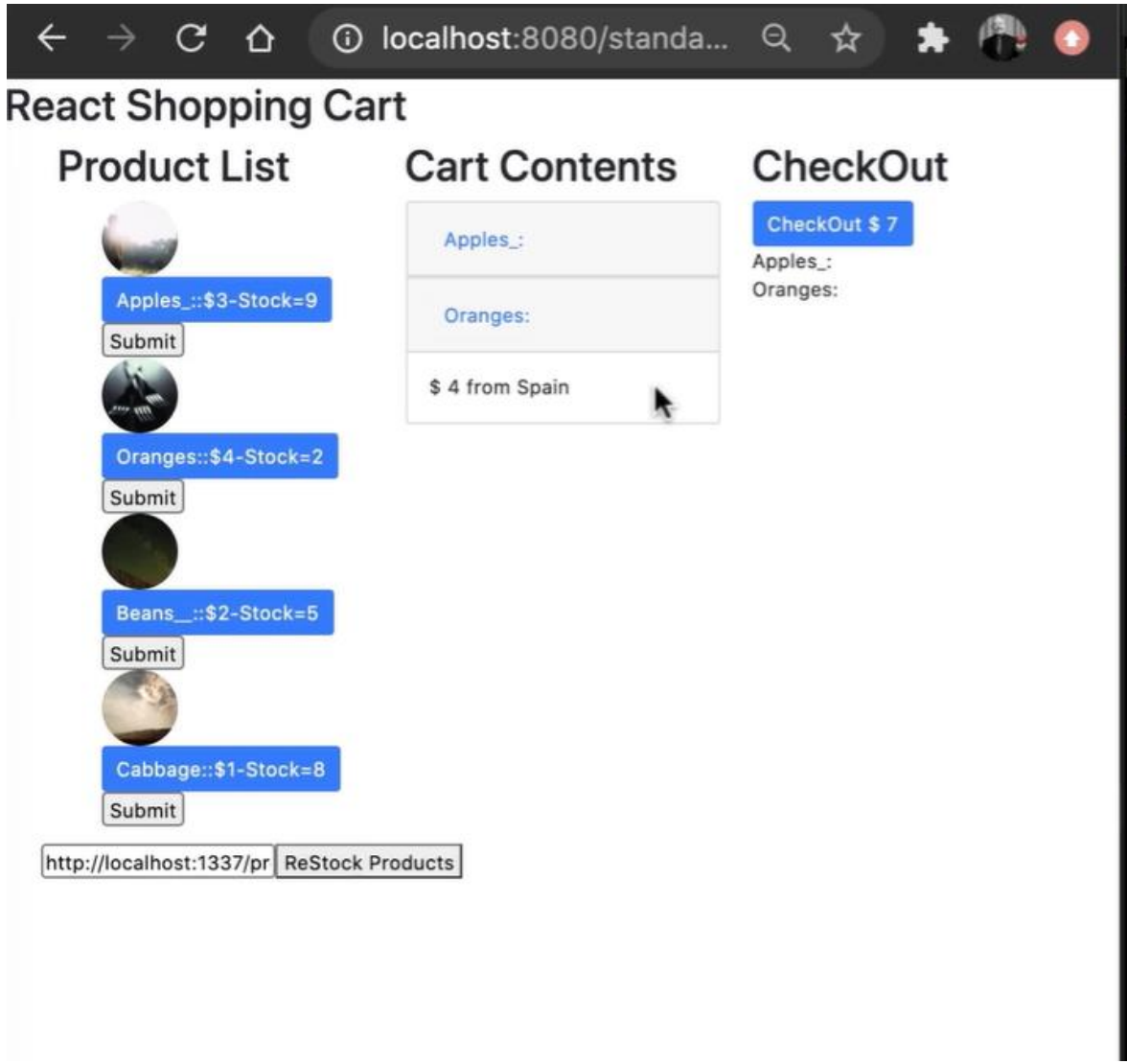


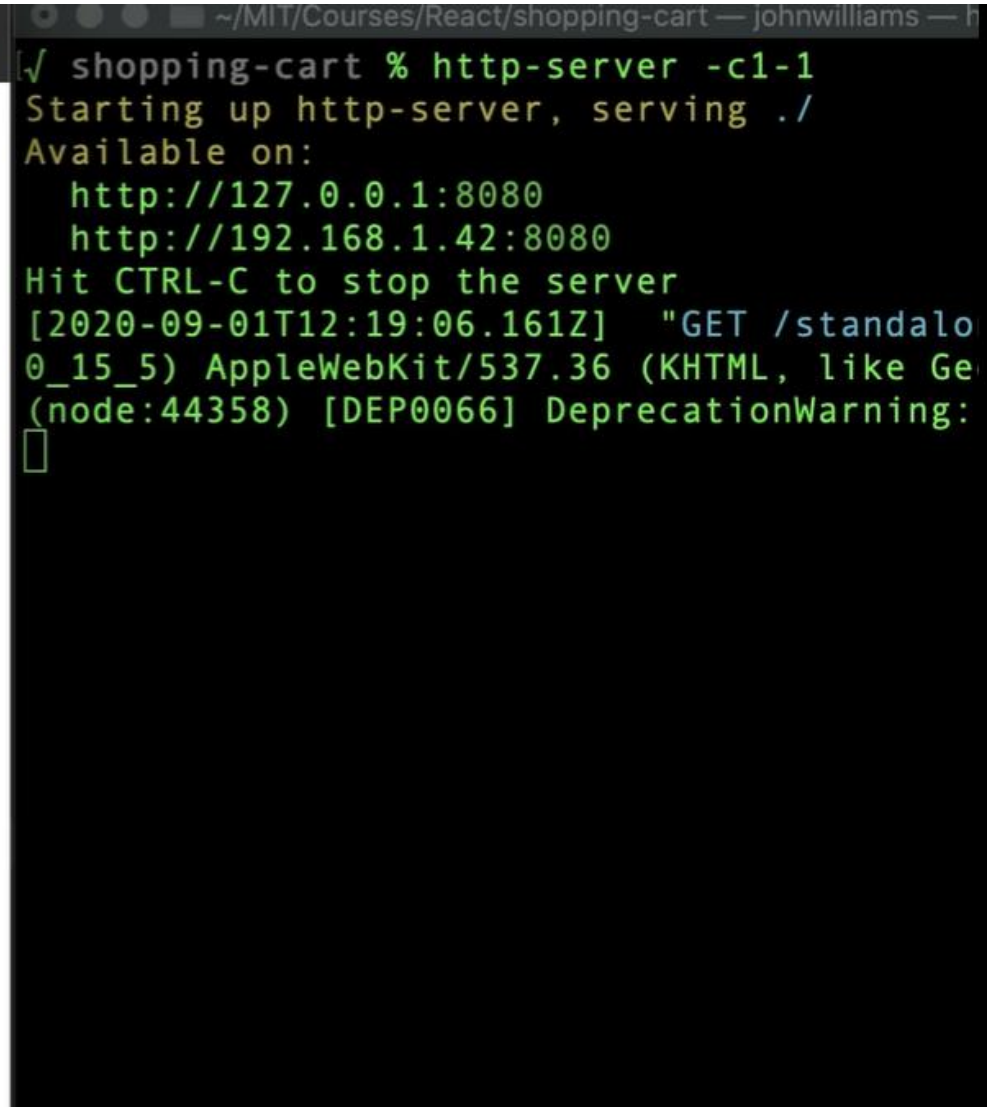
Interacting With Static Website (1/8)



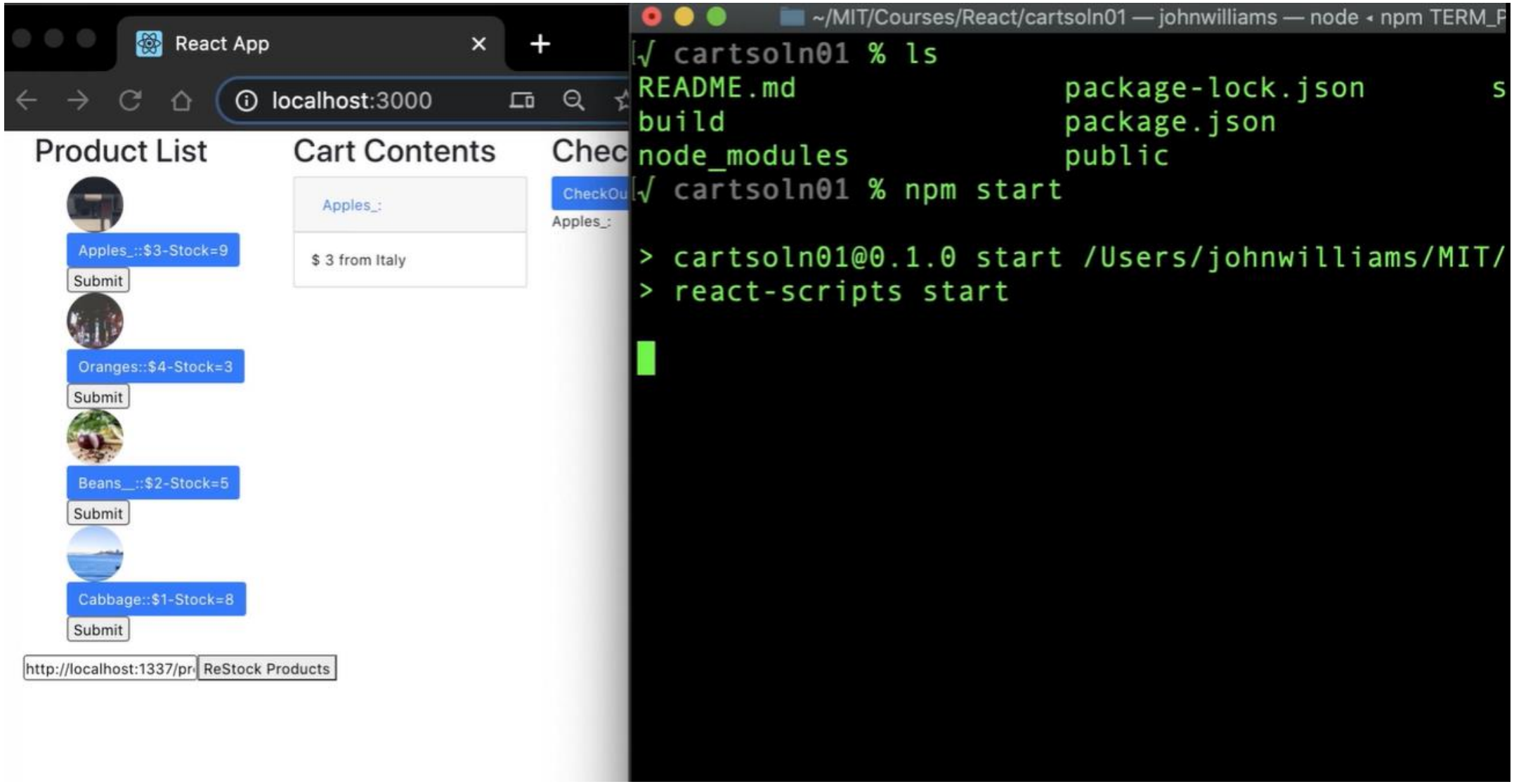


Interacting With Static Website (2/8)

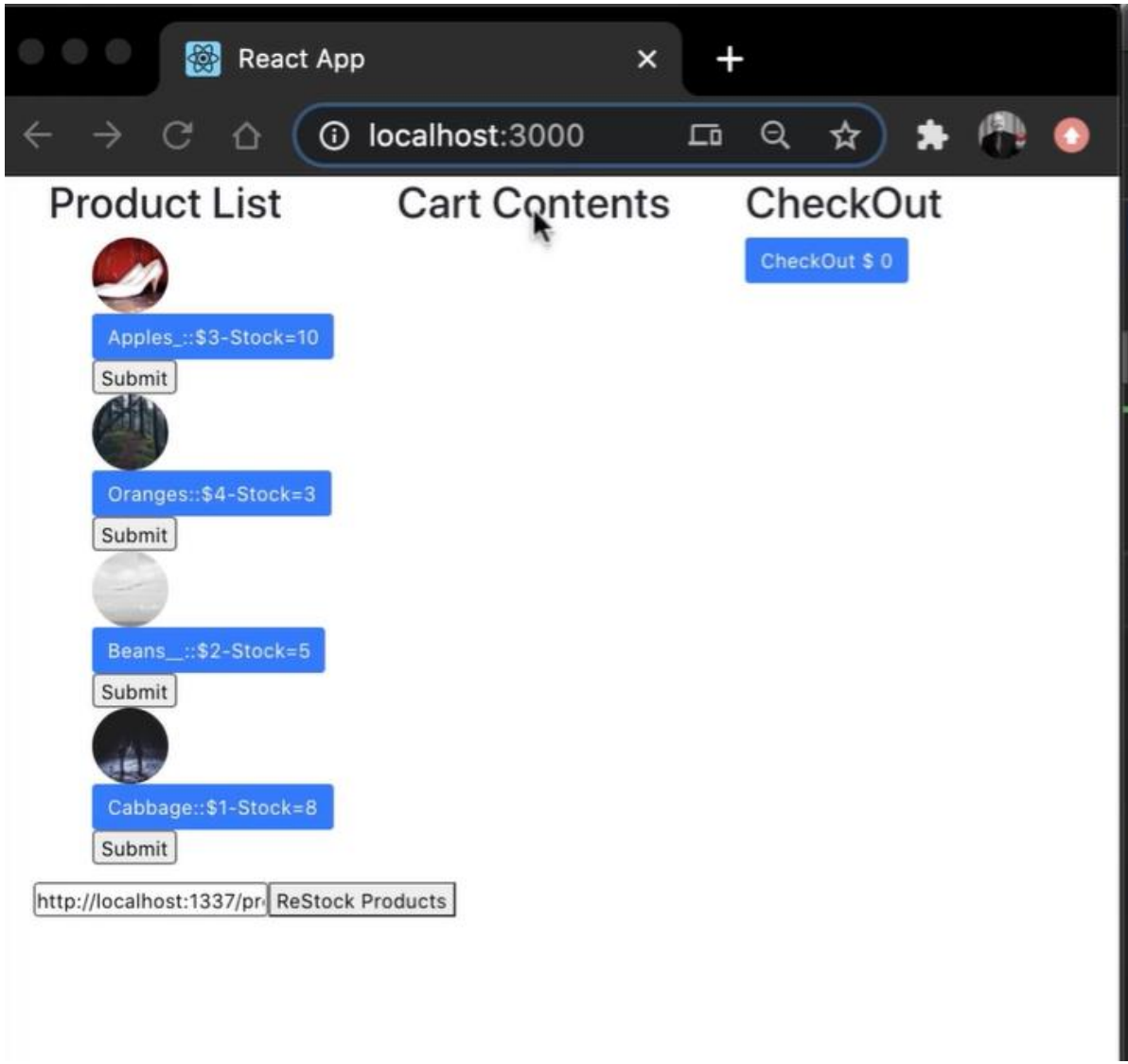


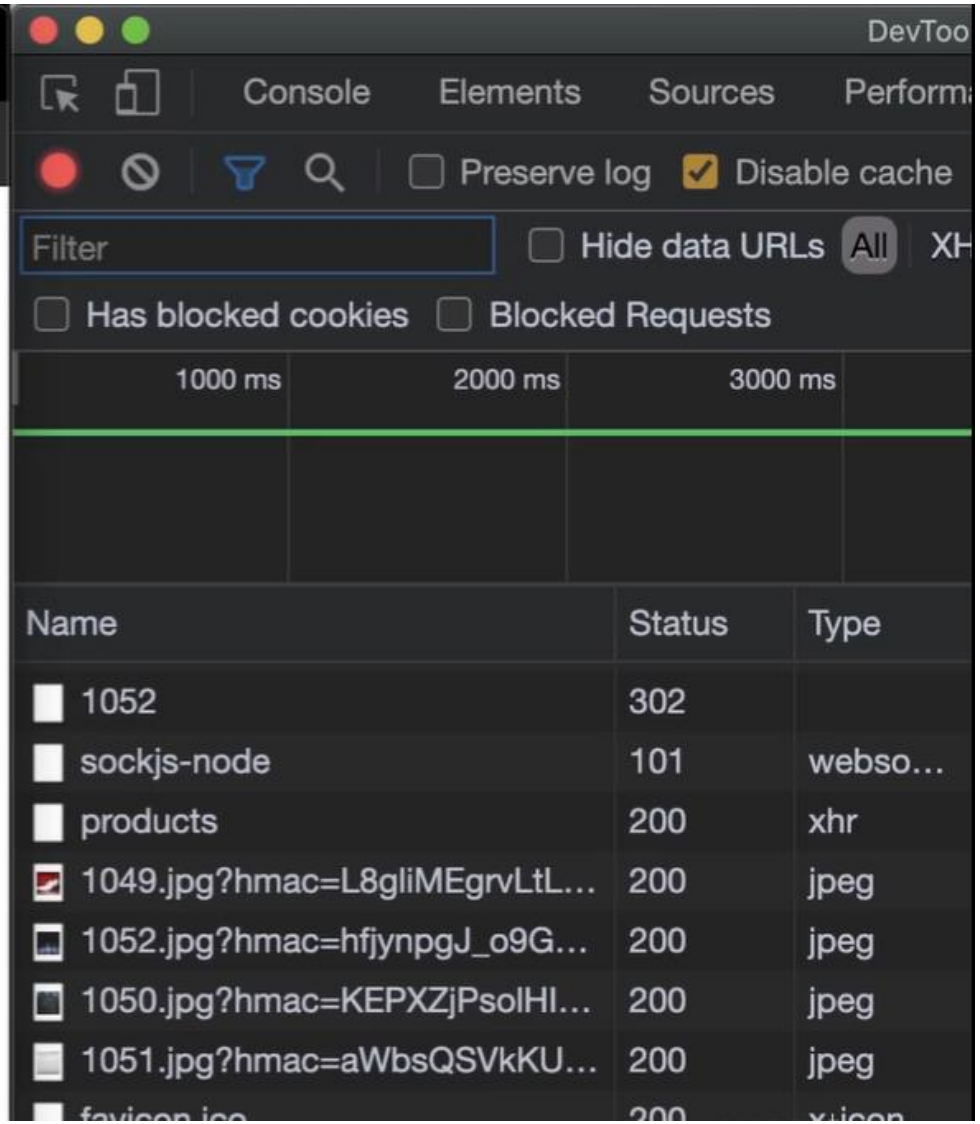


Interacting With Static Website (3/8)

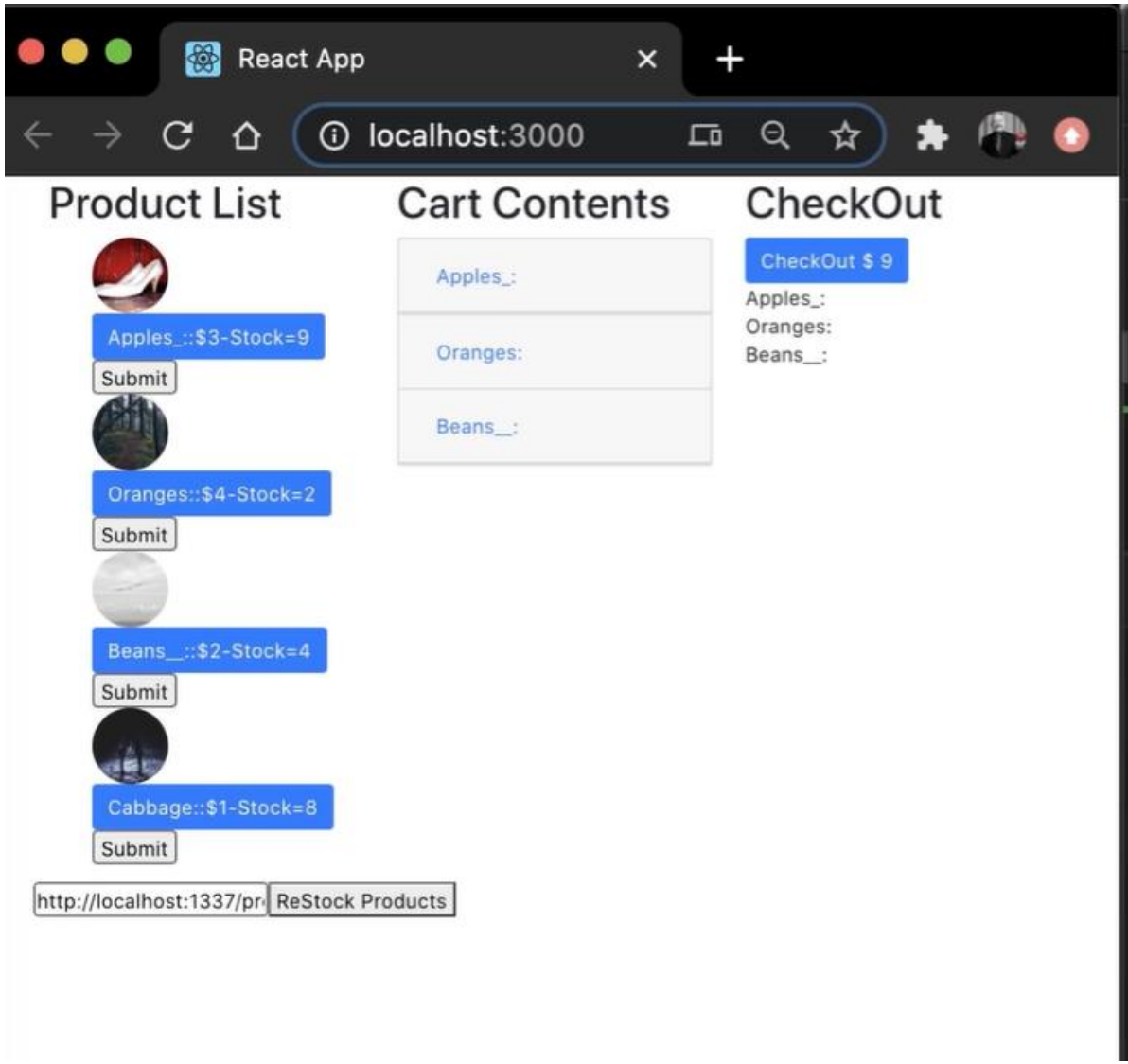


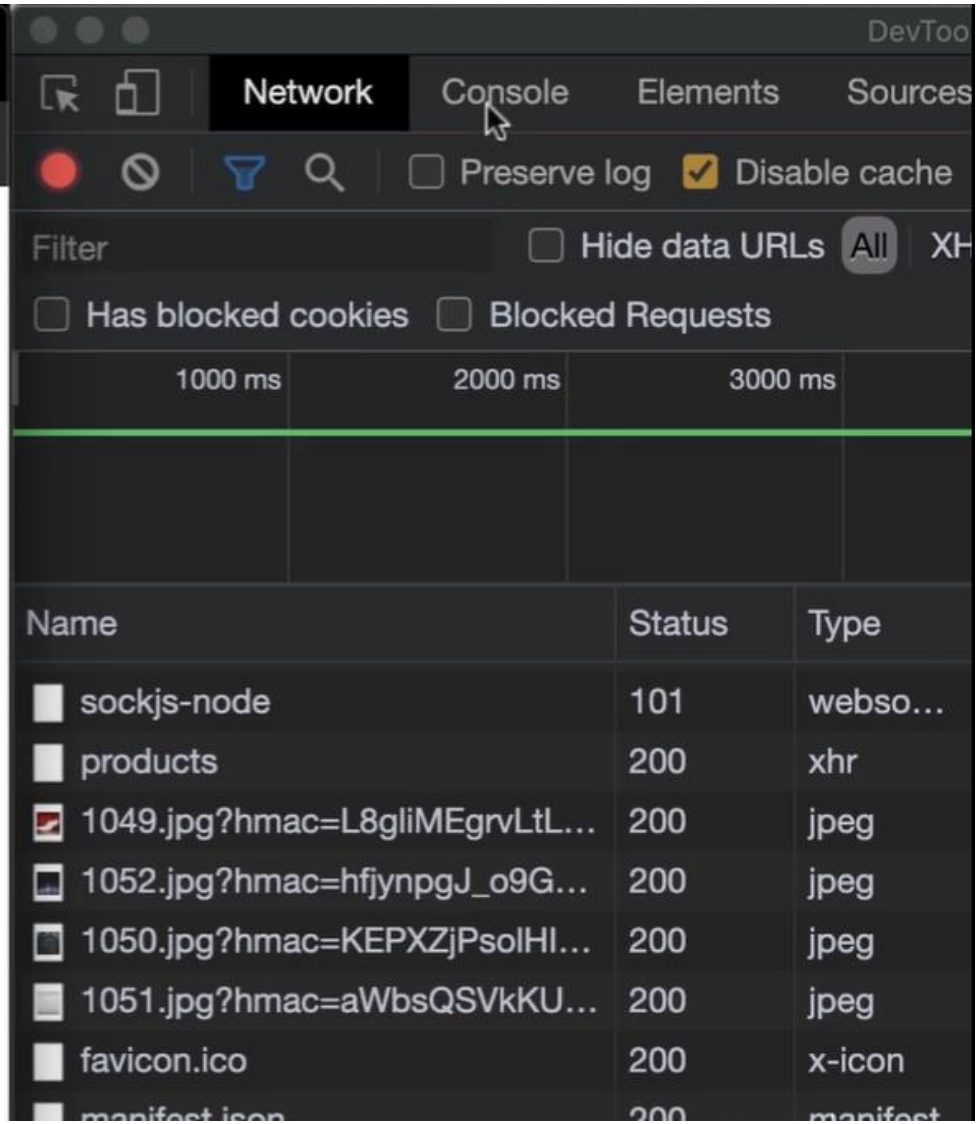
Interacting With Static Website (4/8)



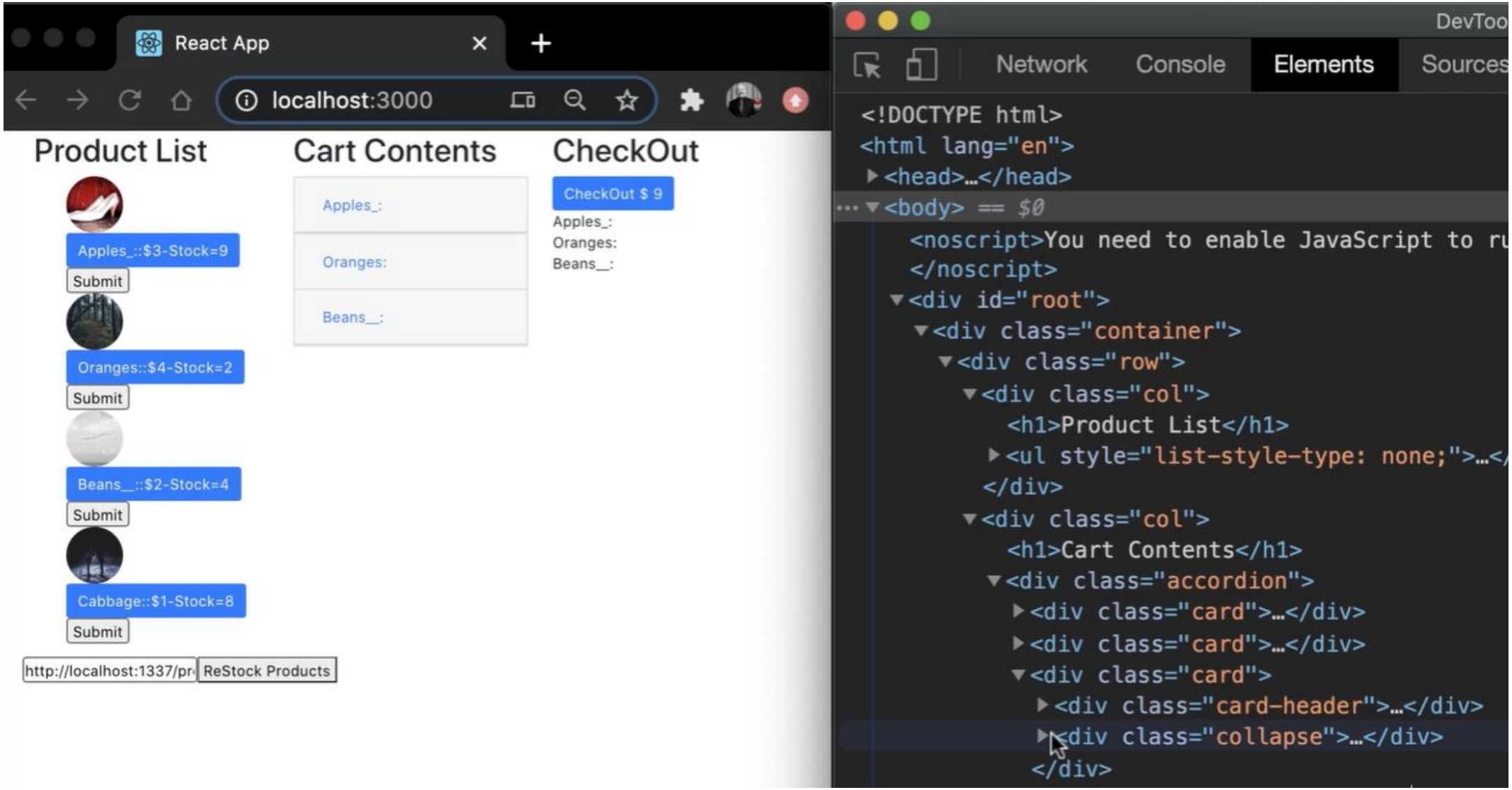


Interacting With Static Website (5/8)

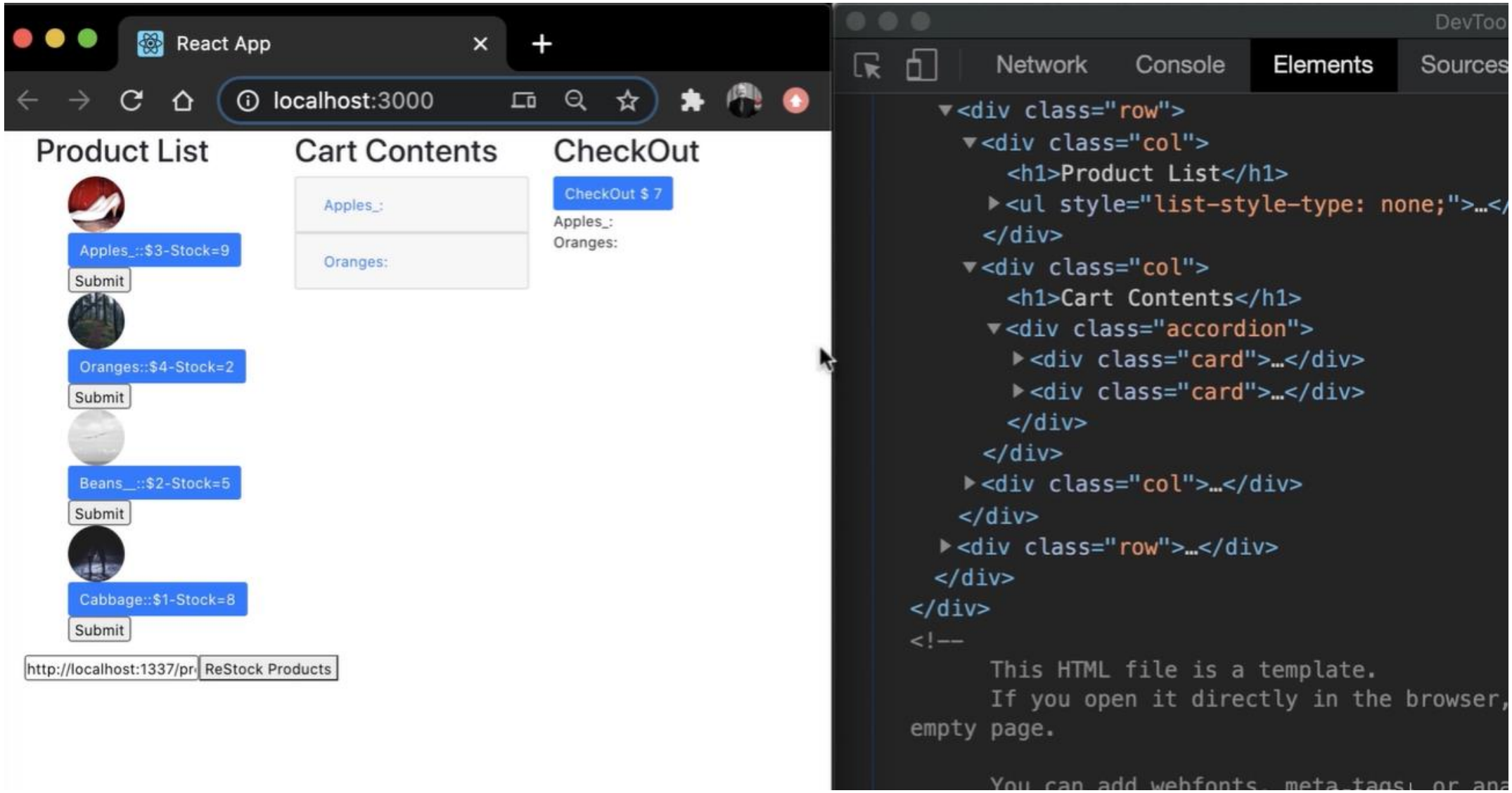




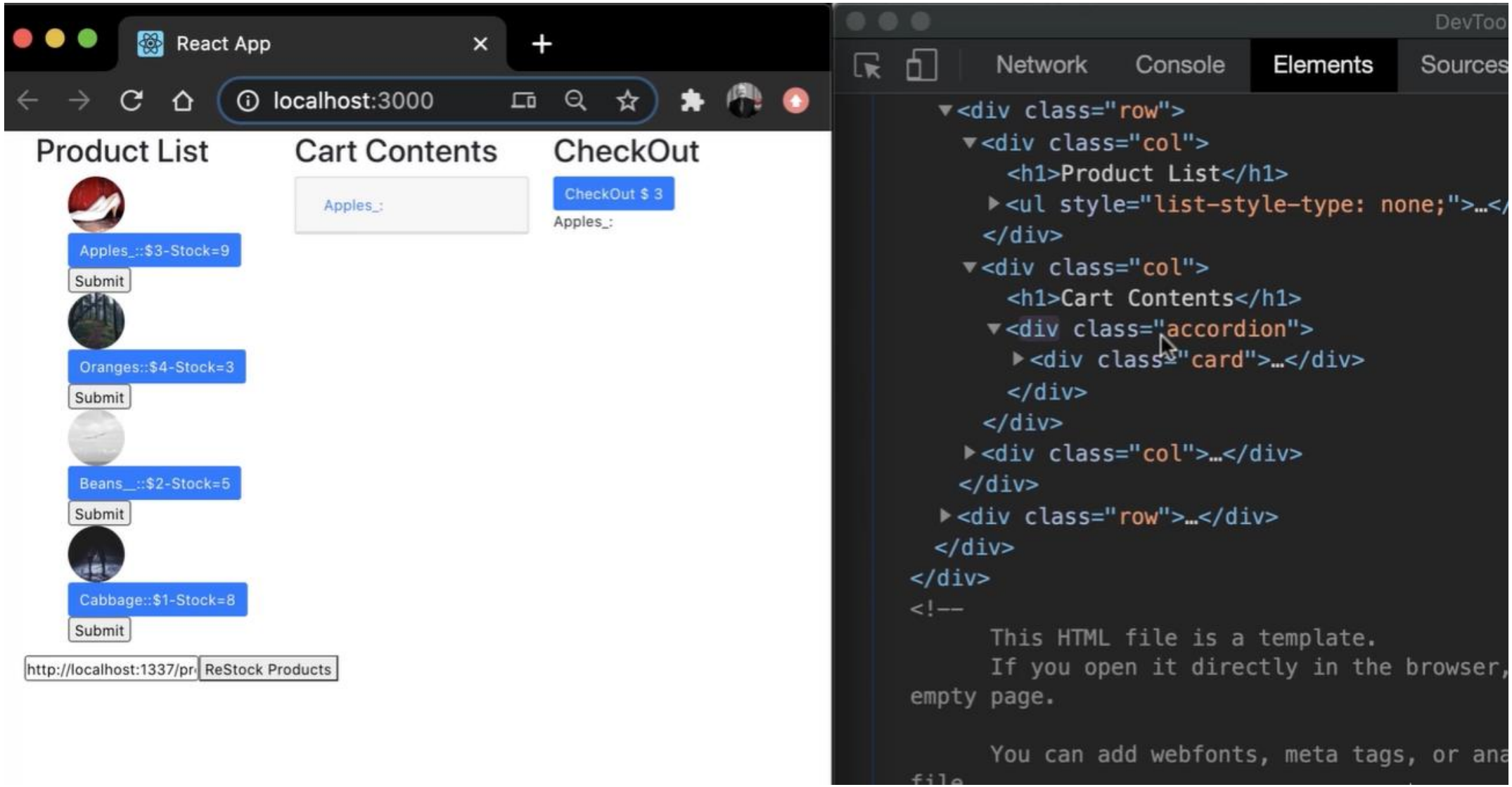
Interacting With Static Website (6/8)



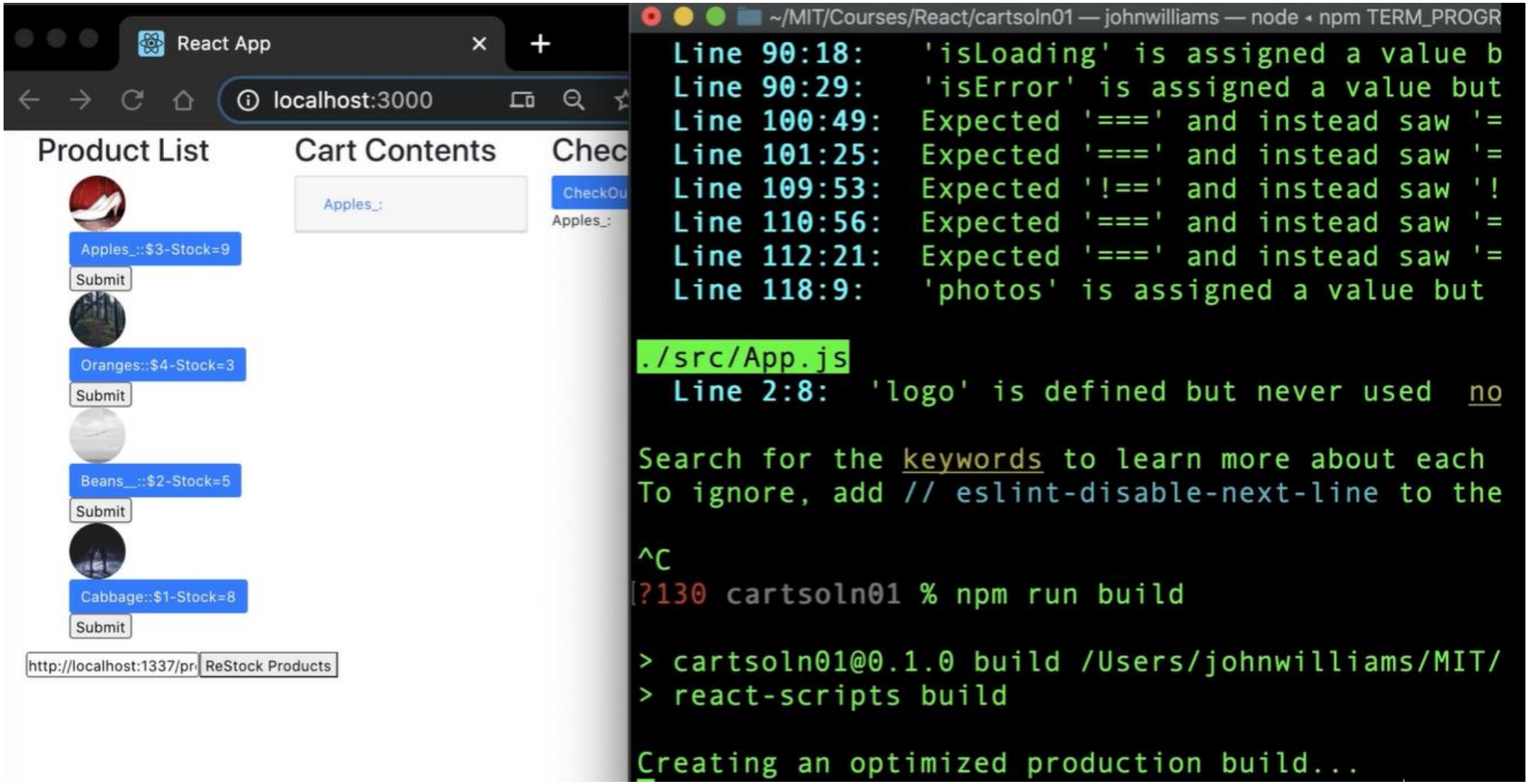
Interacting With Static Website (7/8)



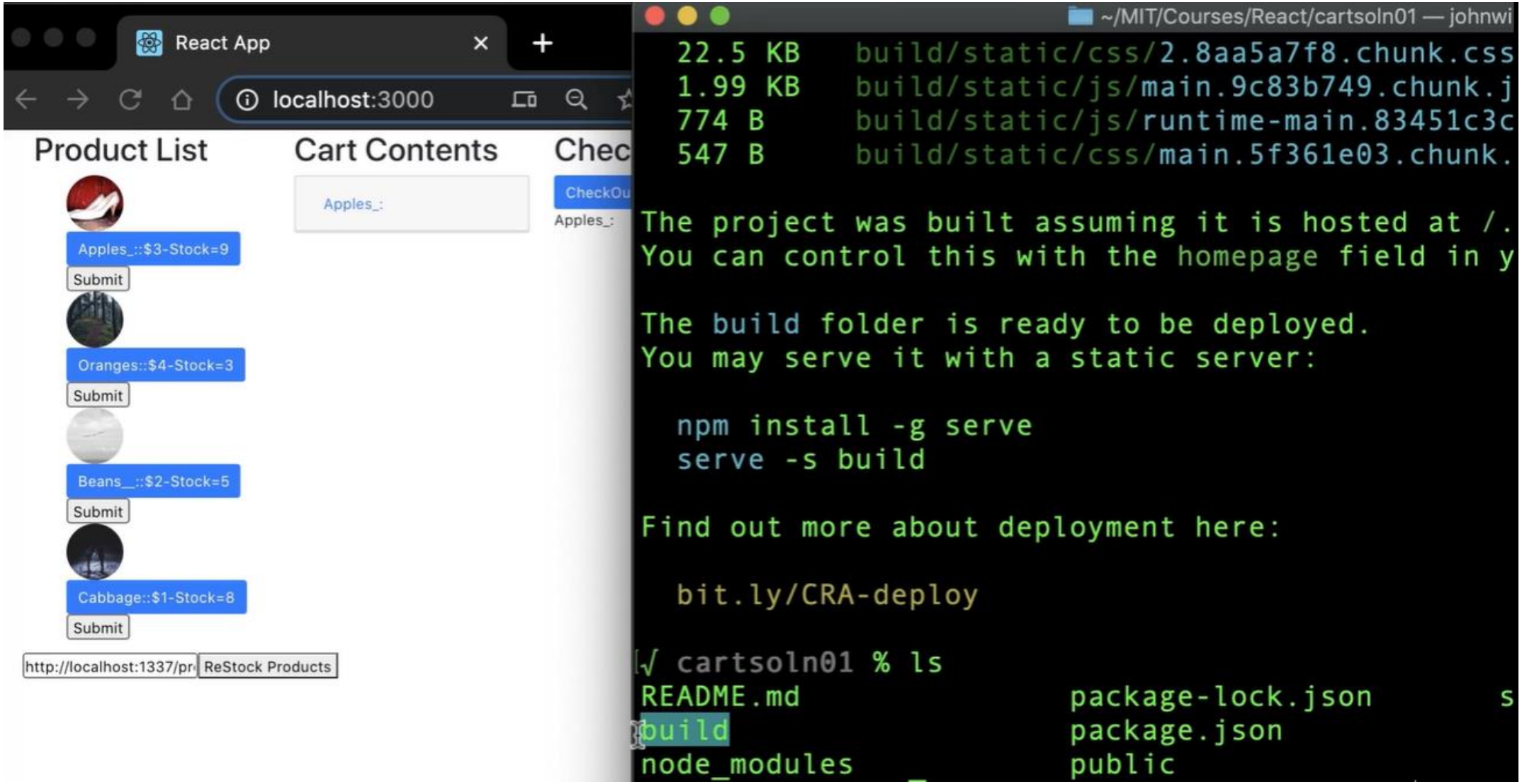
Interacting With Static Website (8/8)



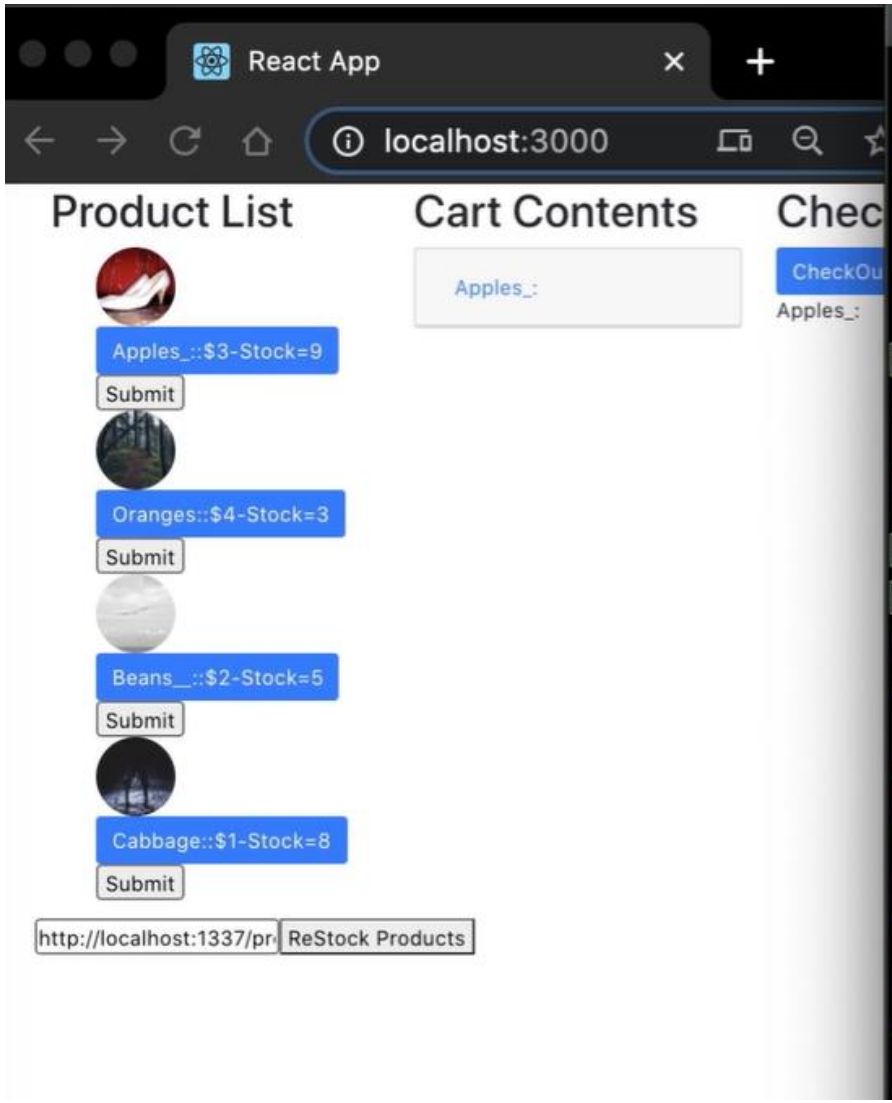
Building Static Website (1/7)

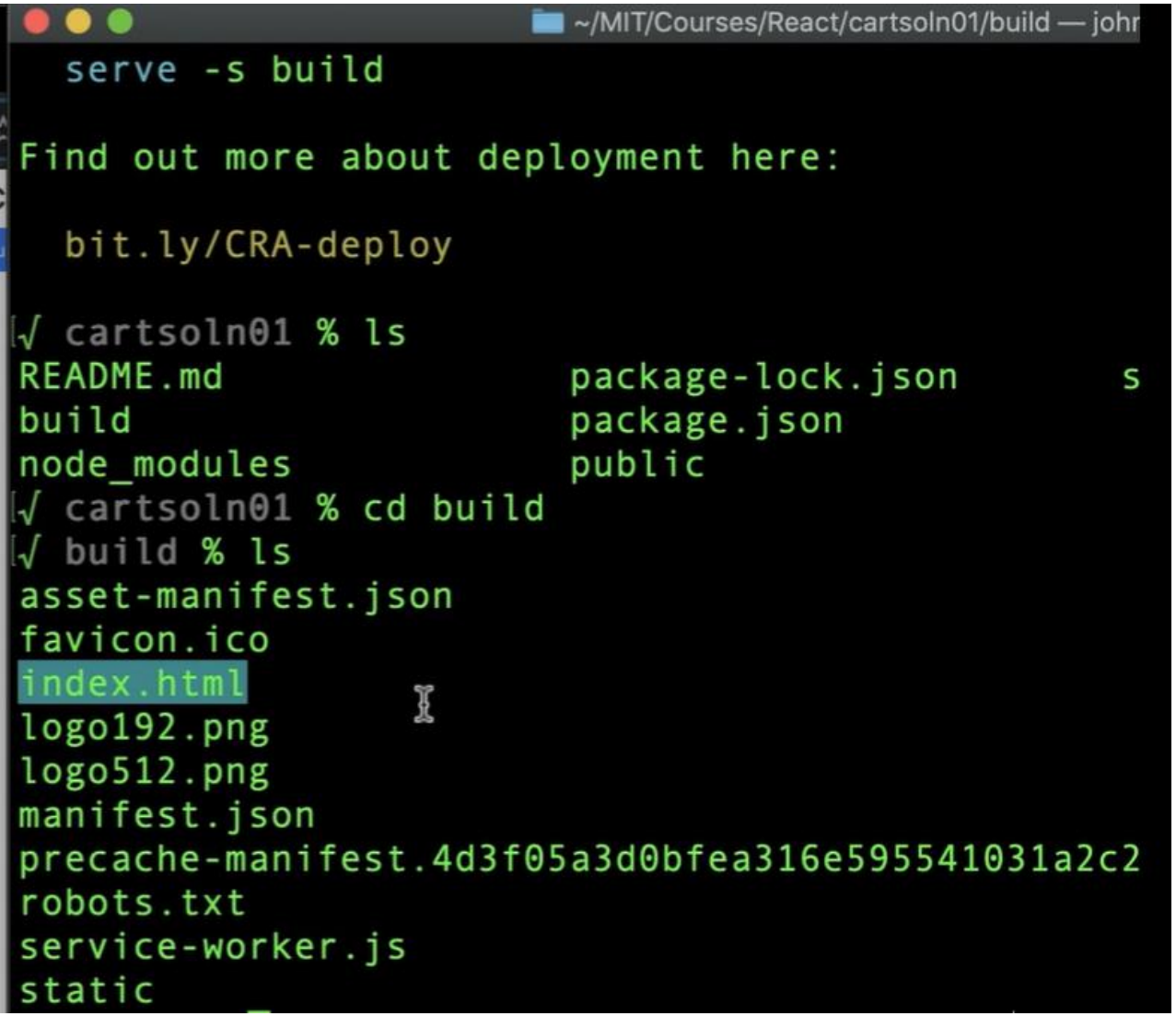


Building Static Website (2/7)

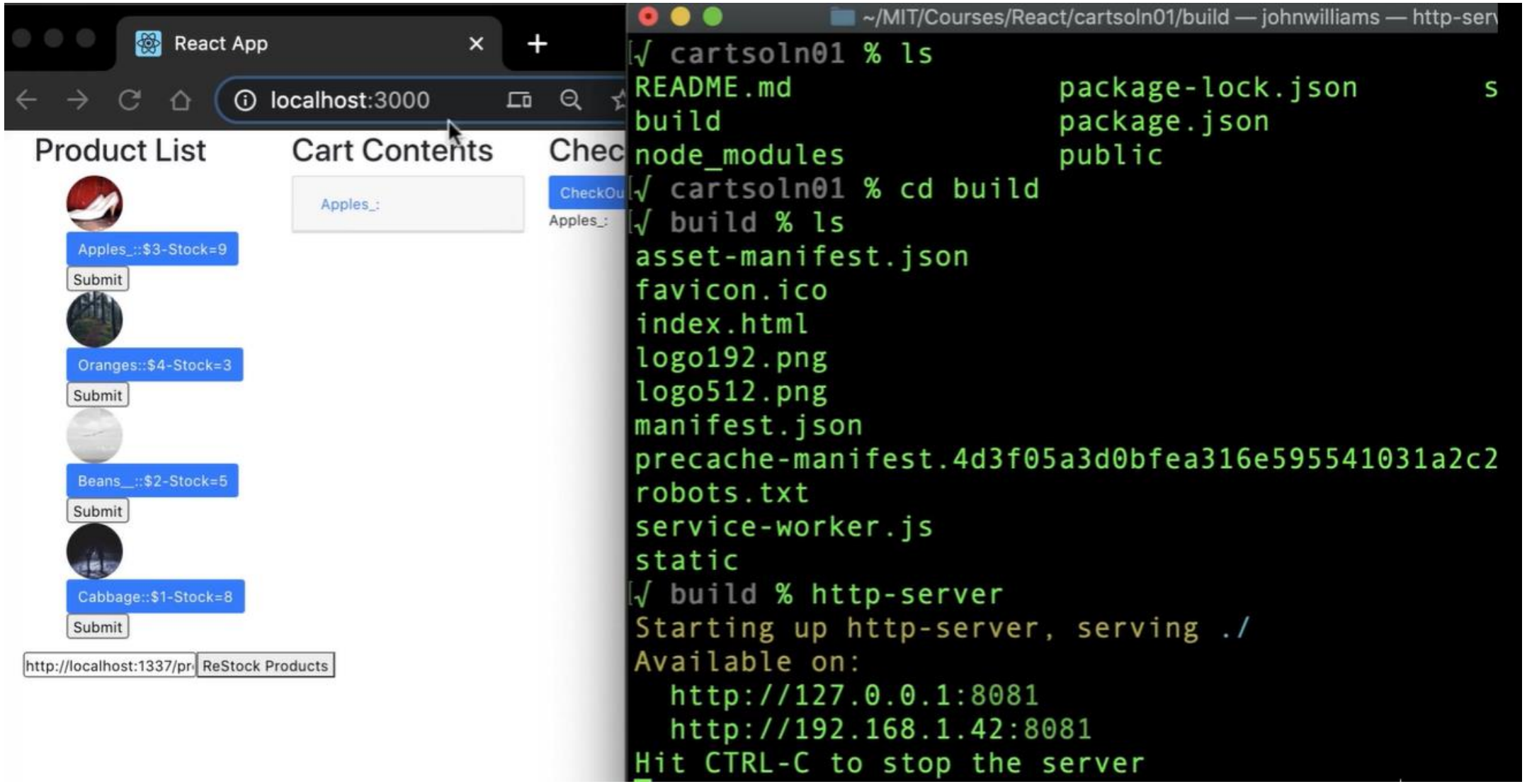


Building Static Website (3/7)

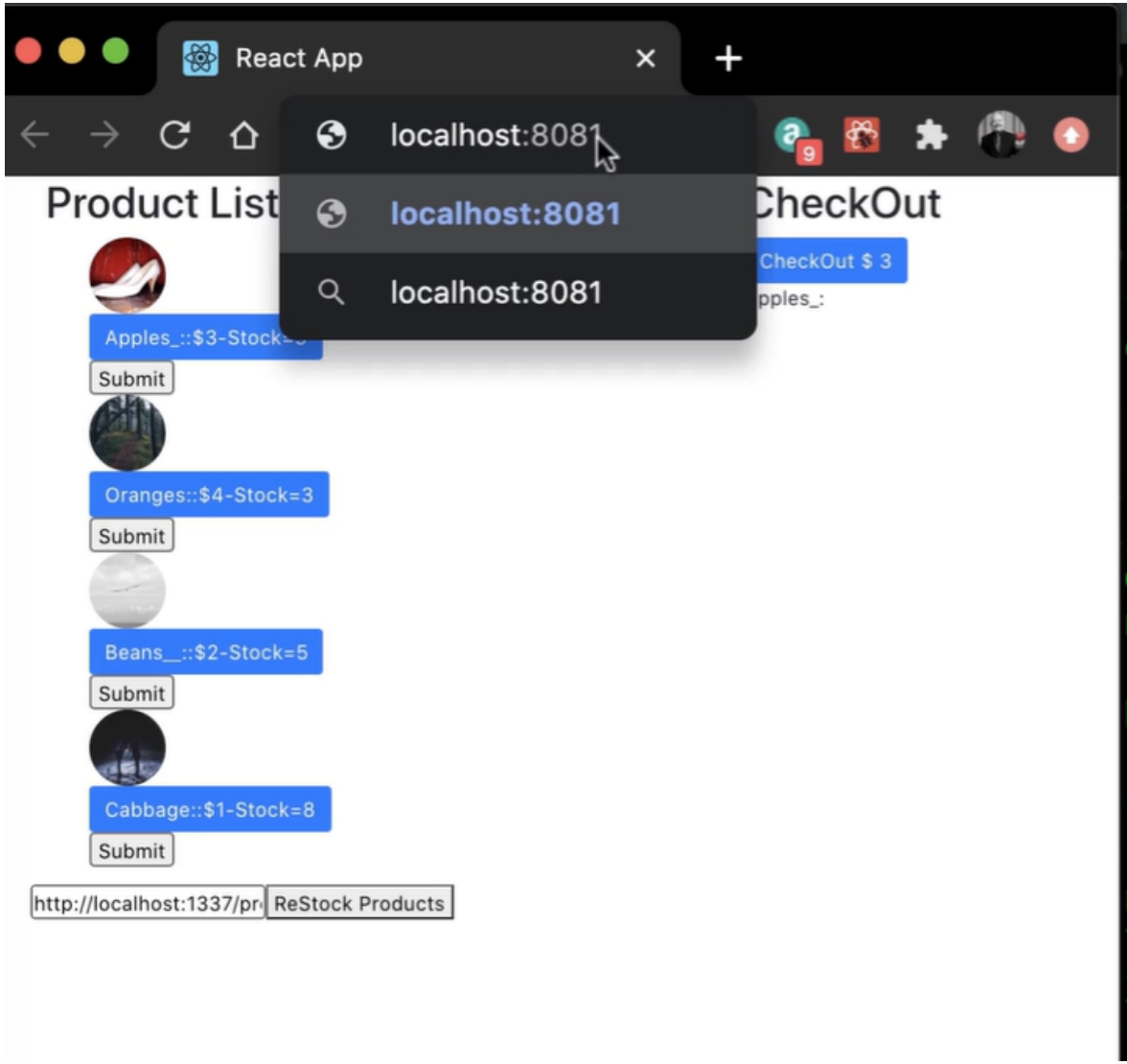




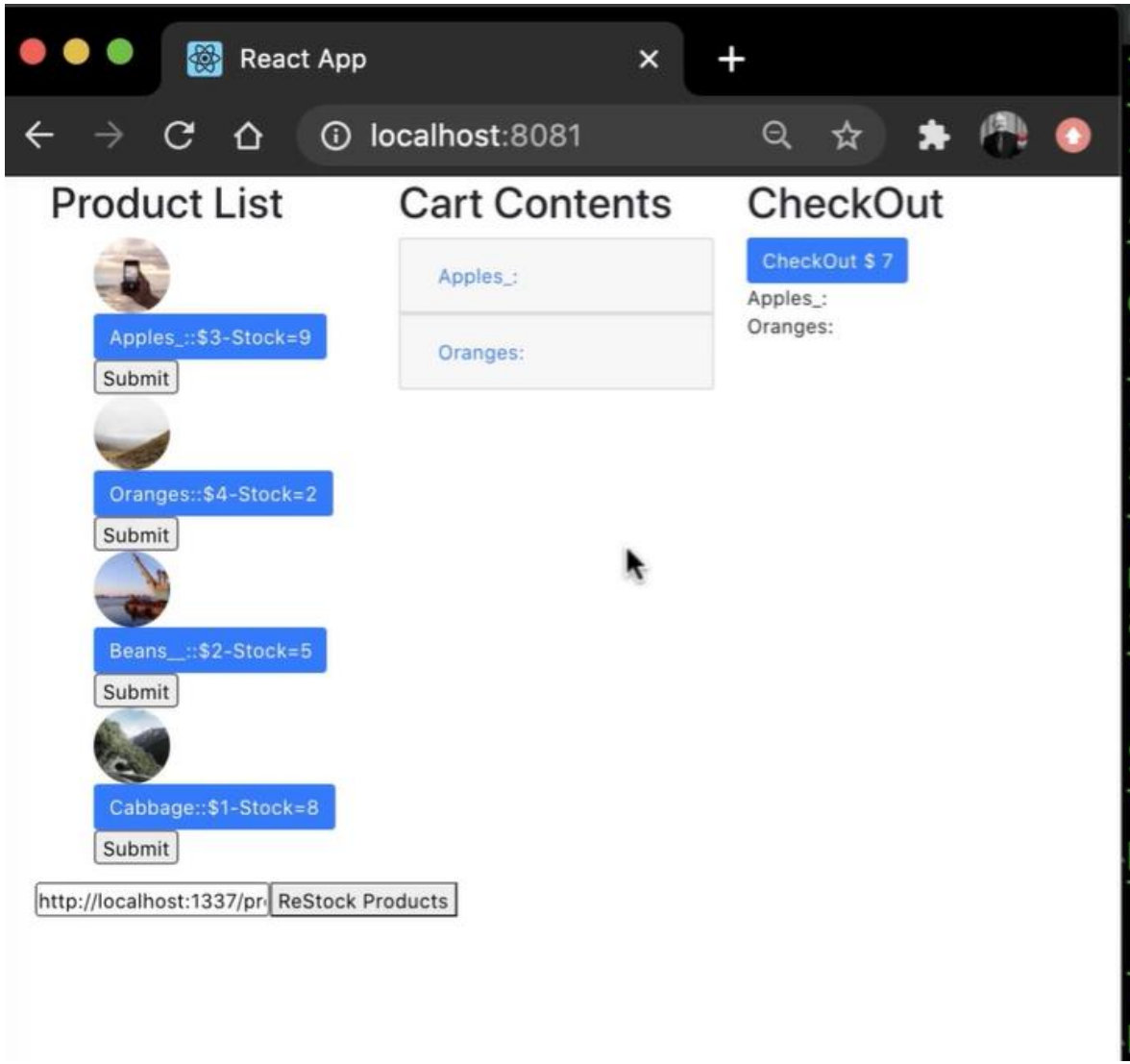
Building Static Website (4/7)

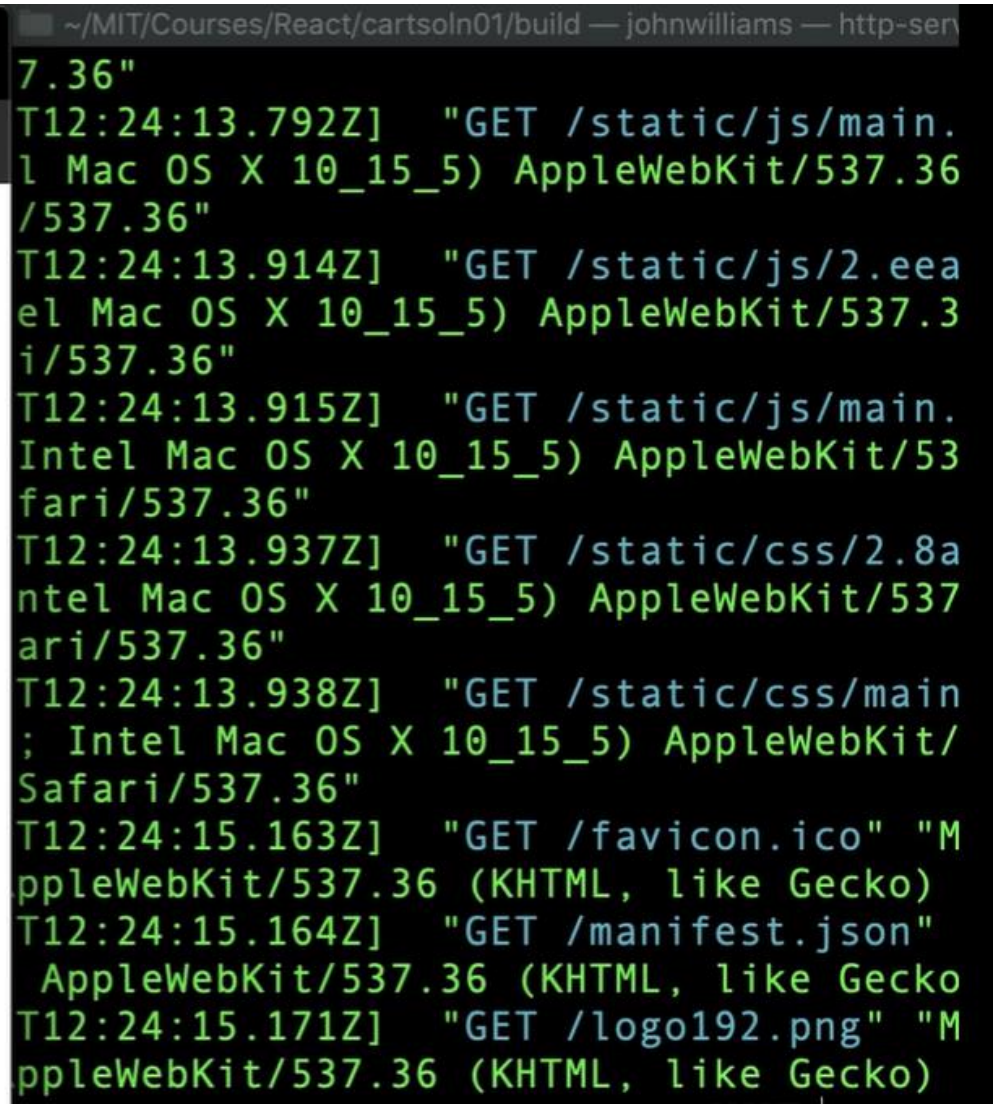


Building Static Website (5/7)

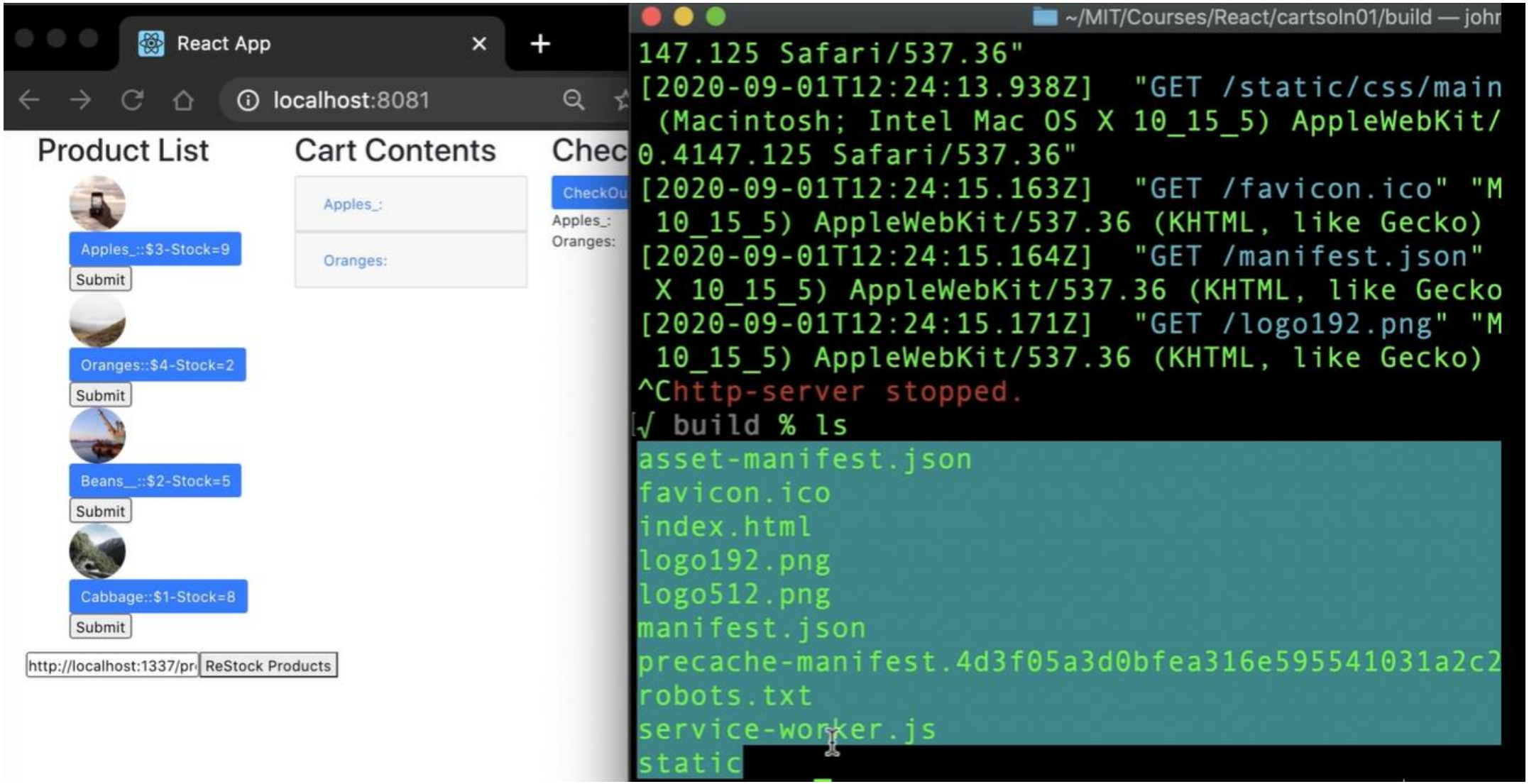


Building Static Website (6/7)

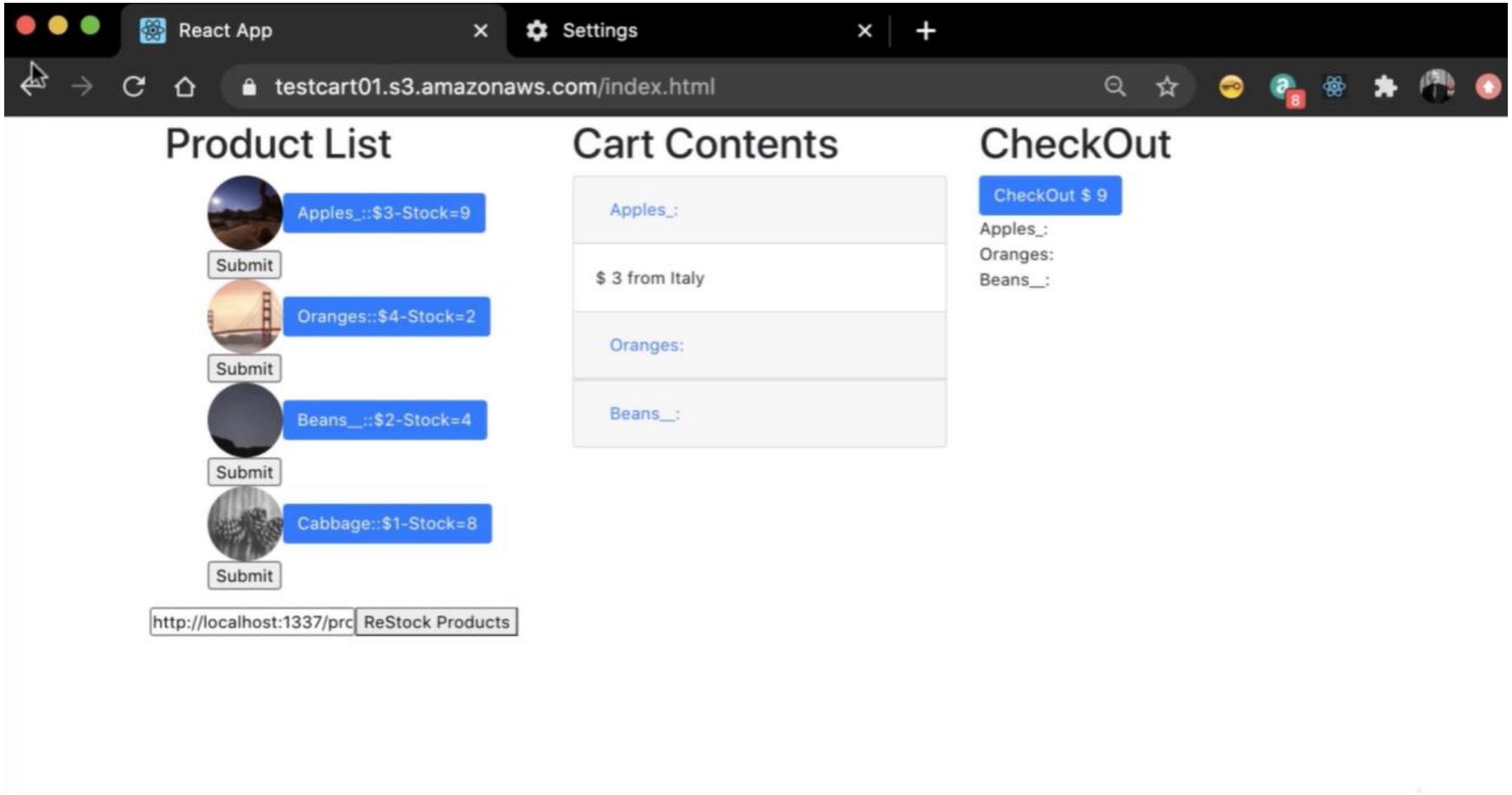




Building Static Website (7/7)



Deploying Static Website On AWS3 (1/28)



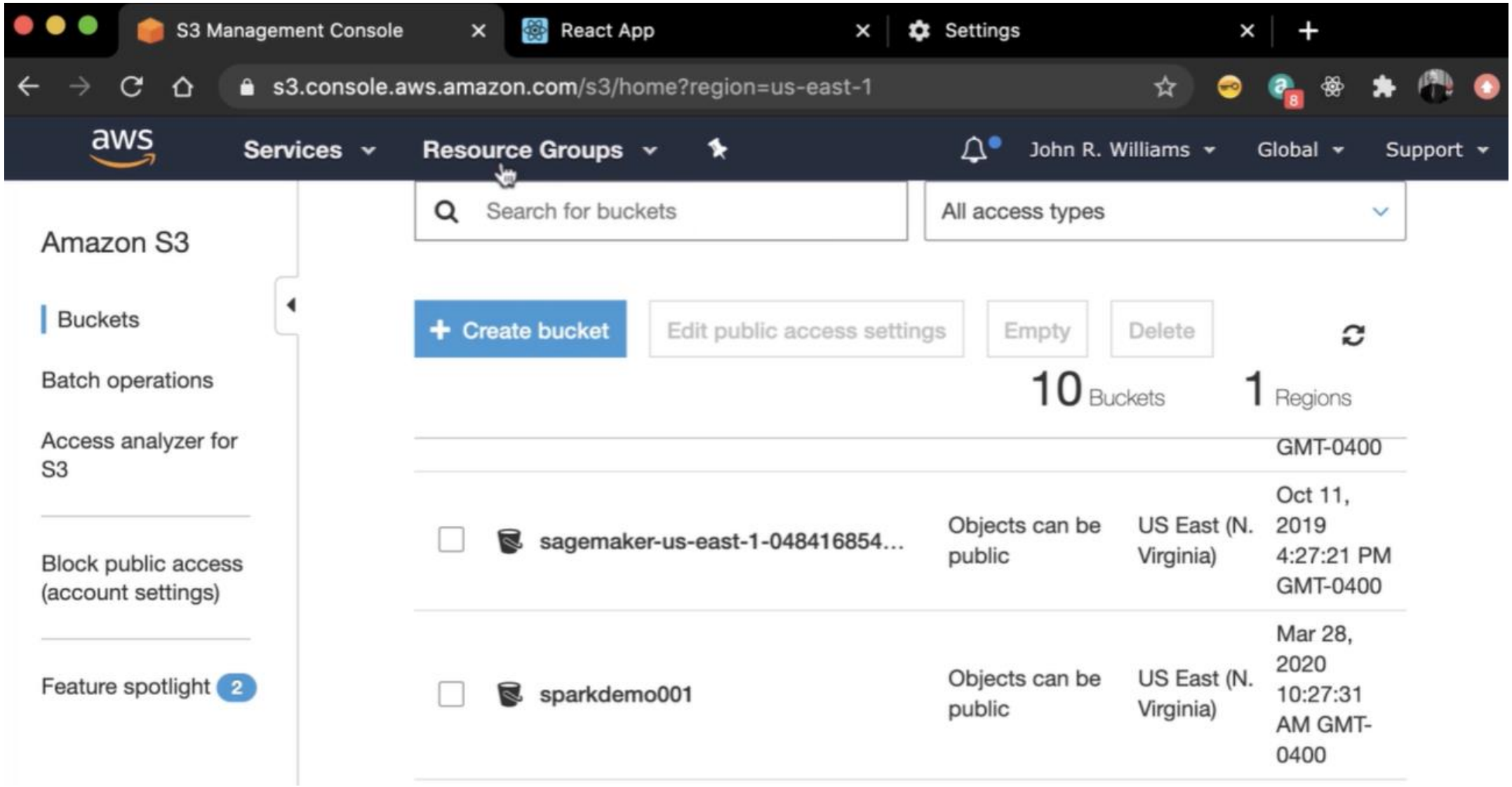
Deploying Static Website On AWS3 (2/28)

```
  bit.ly/CRA-deploy

✓ cartsoln01 % ls                                                    ma
README.md                package-lock.json       src
build                    package.json
node_modules             public
✓ cartsoln01 % ls build                                              ma
asset-manifest.json
favicon.ico
index.html
logo192.png
logo512.png
manifest.json
precache-manifest.4d3f05a3d0bfea316e595541031a2c2c.js
robots.txt
service-worker.js
static
✓ cartsoln01 % npm run build                                         ma

> cartsoln01@0.1.0 build /Users/johnwilliams/MIT/Courses/React/cartsoln01
> react-scripts build

Creating an optimized production build...
```

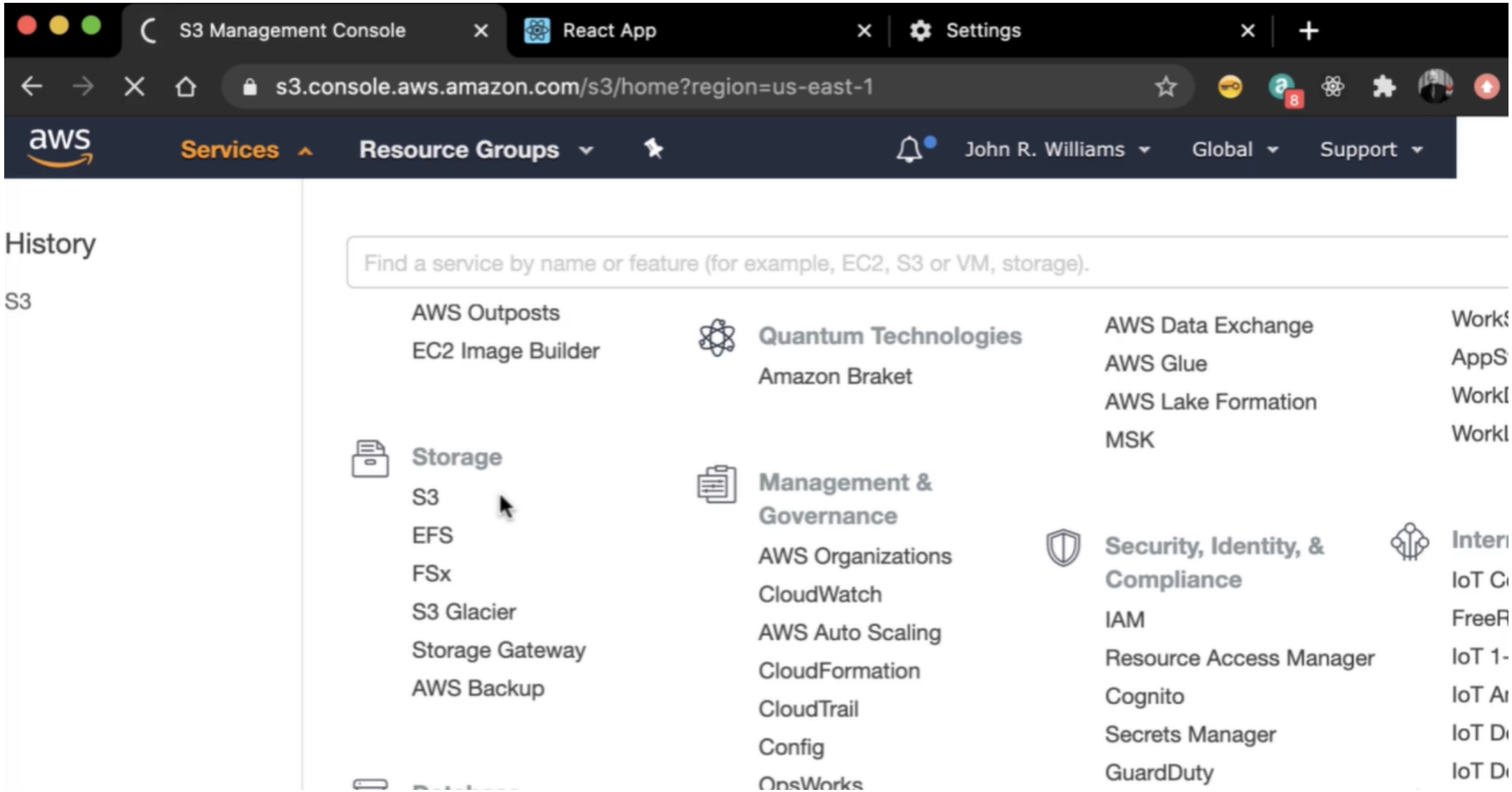
Deploying Static Website On AWS3 (3/28)

```
You may serve it with a static server:

  npm install -g serve
  serve -s build

Find out more about deployment here:

  bit.ly/CRA-deploy

√ cartsoln01 % ls                                                    ma
README.md                package-lock.json       src
build                    package.json
node_modules             public
√ cartsoln01 % ls build                                              ma
asset-manifest.json
favicon.ico
index.html
logo192.png
logo512.png
manifest.json
precache-manifest.4d3f05a3d0bfea316e595541031a2c2c.js
robots.txt
service-worker.js
static
√ cartsoln01 %
```

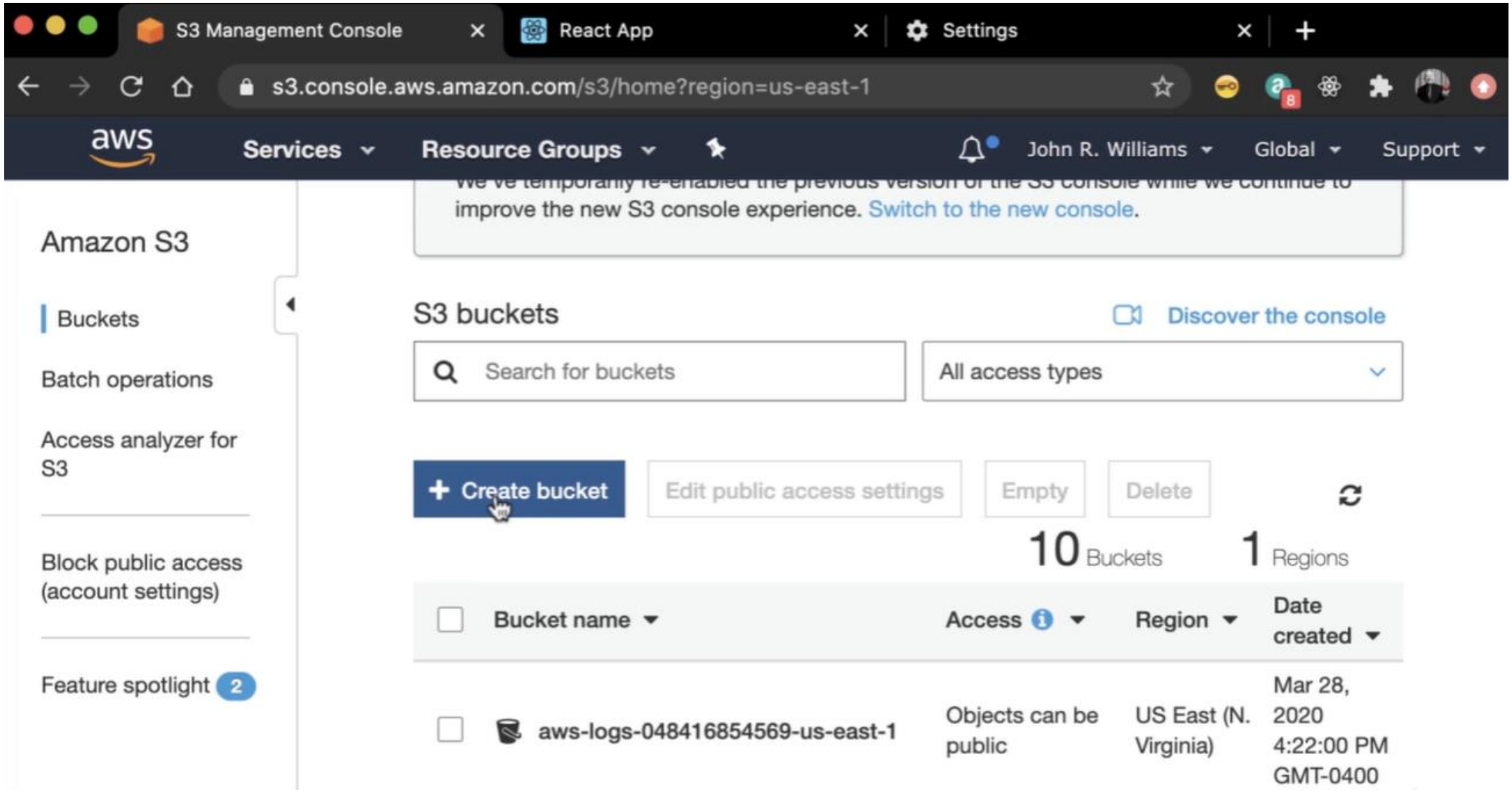
Deploying Static Website On AWS3 (4/28)



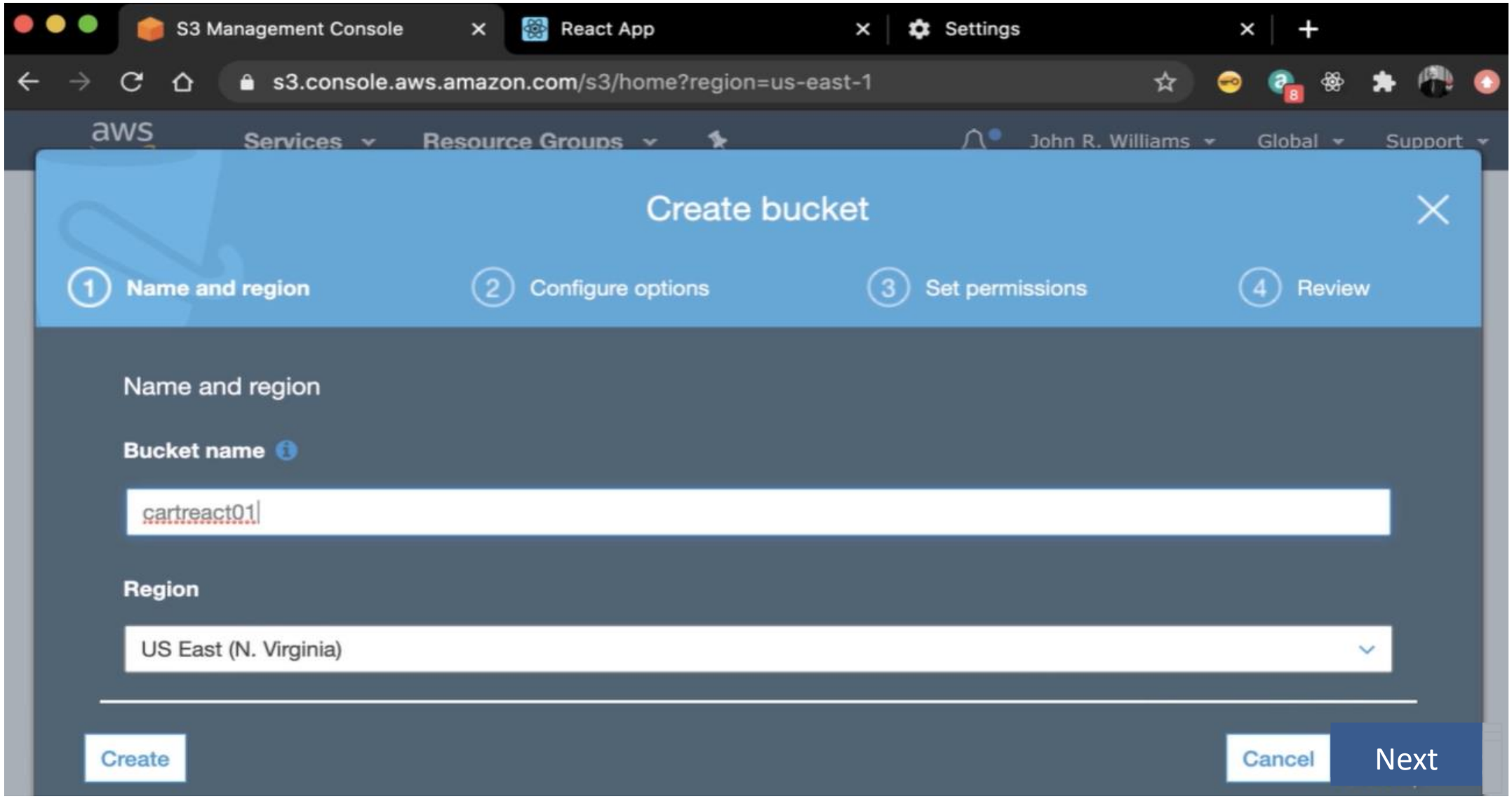
Deploying Static Website On AWS3 (5/28)



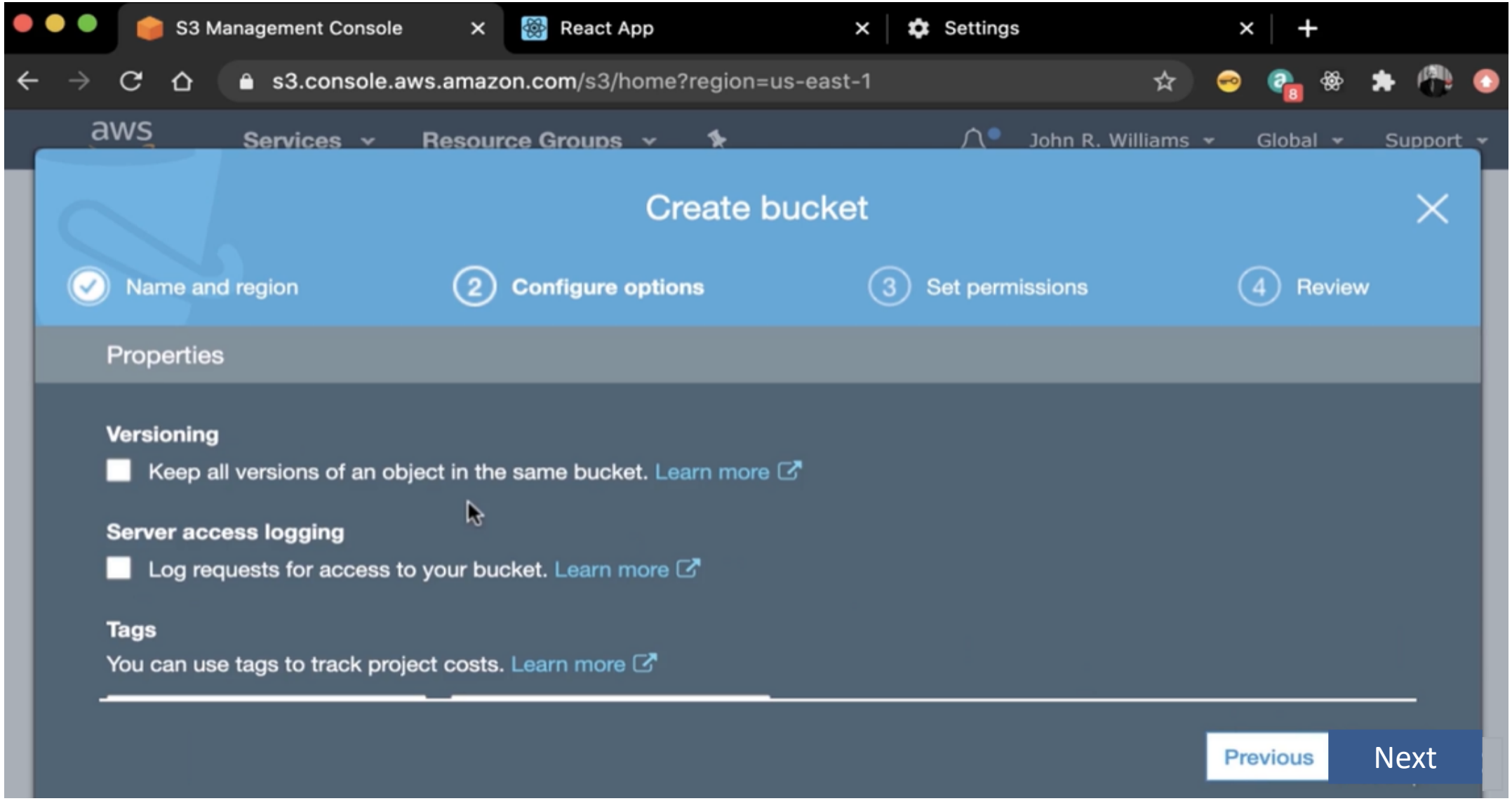
Deploying Static Website On AWS3 (6/28)



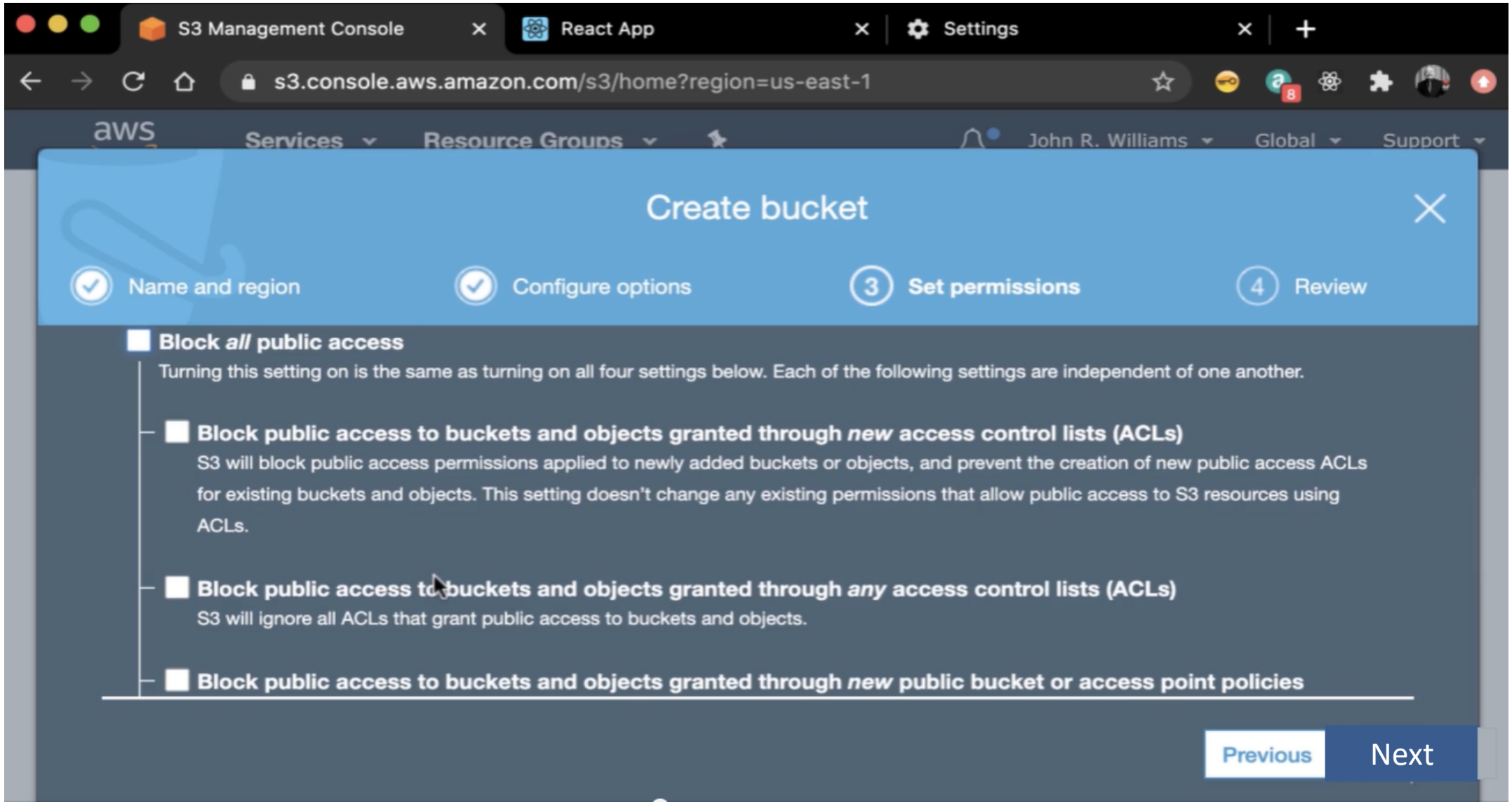
Deploying Static Website On AWS3 (7/28)



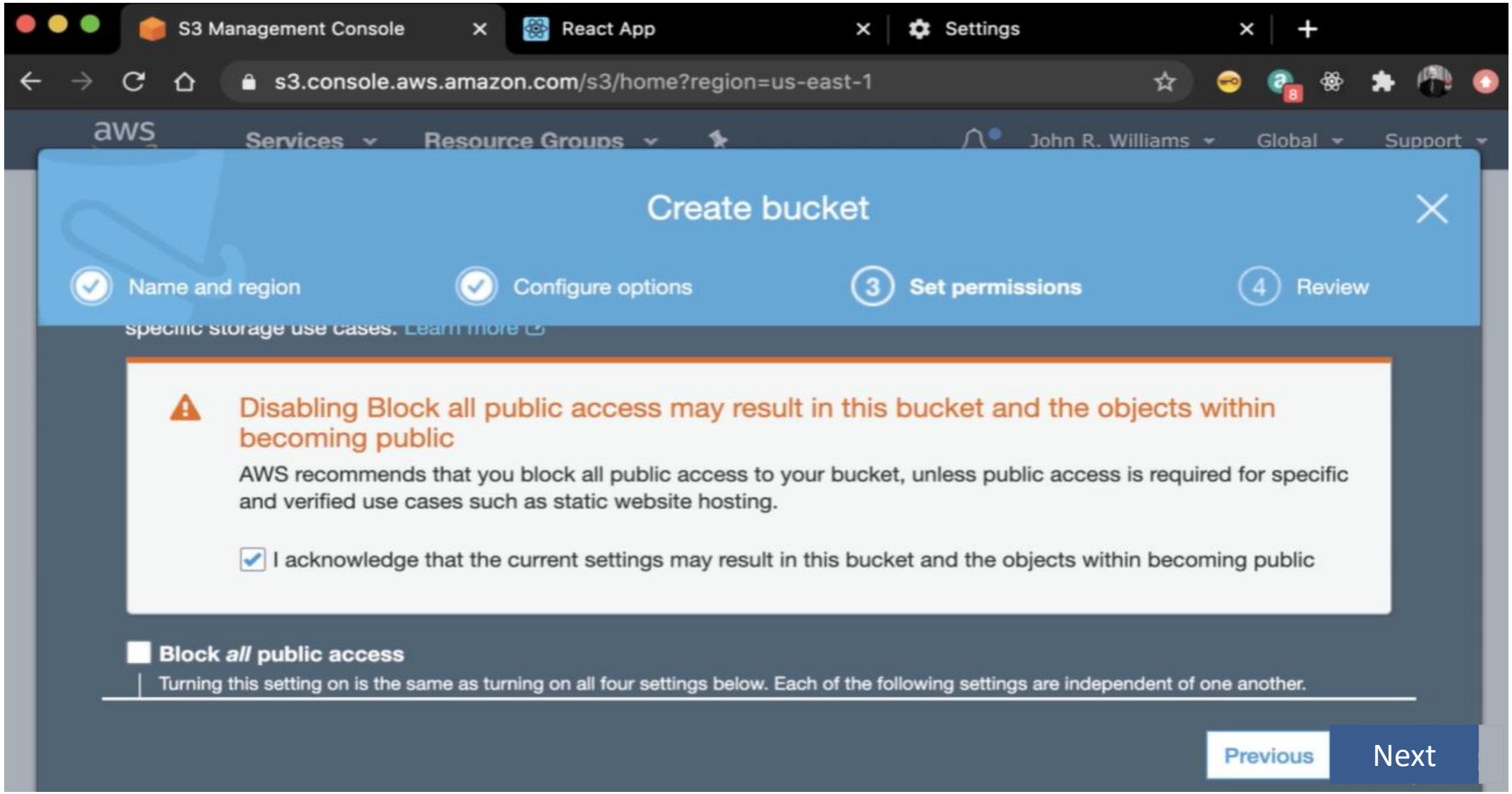
Deploying Static Website On AWS3 (8/28)



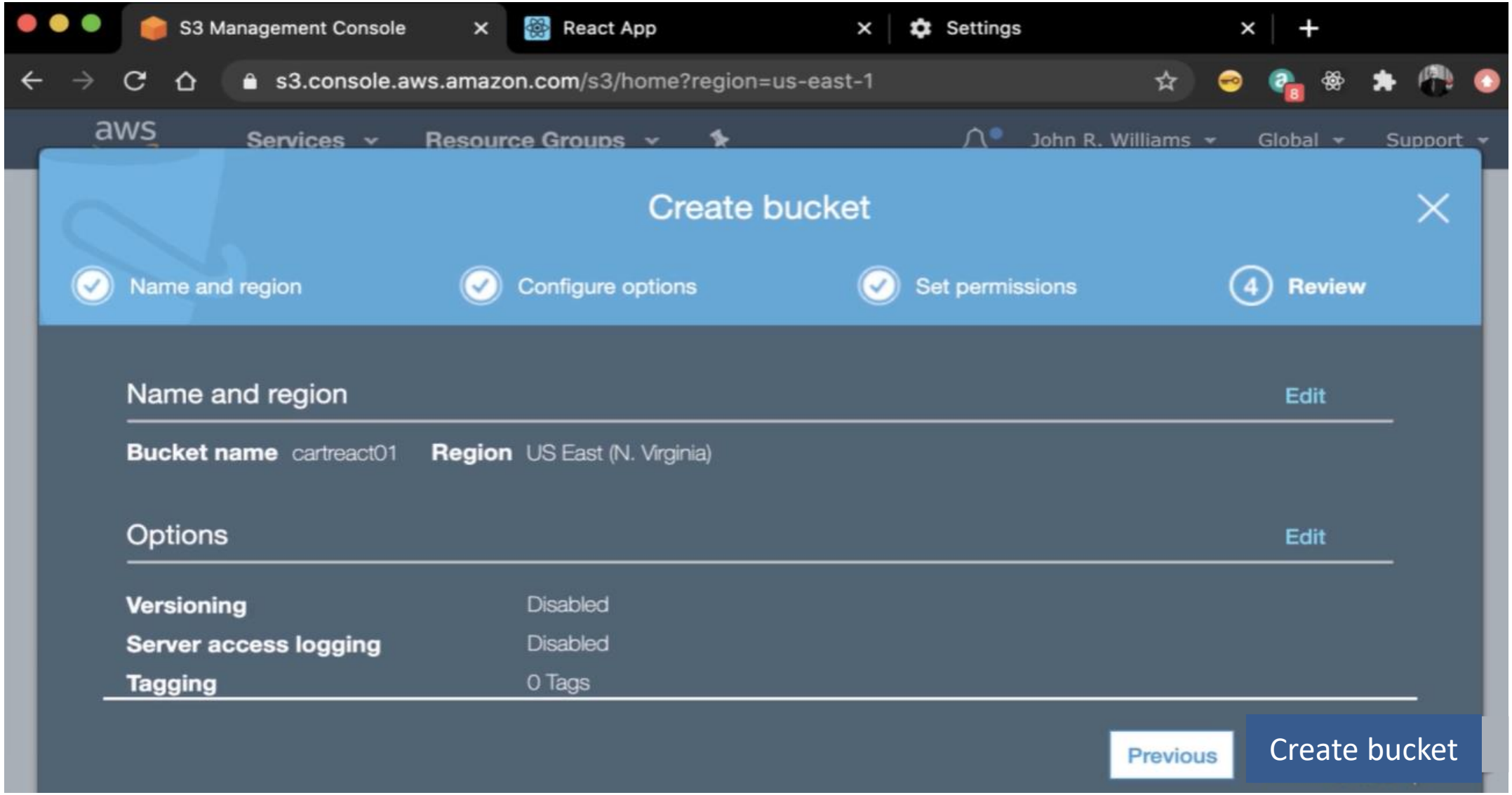
Deploying Static Website On AWS3 (9/28)



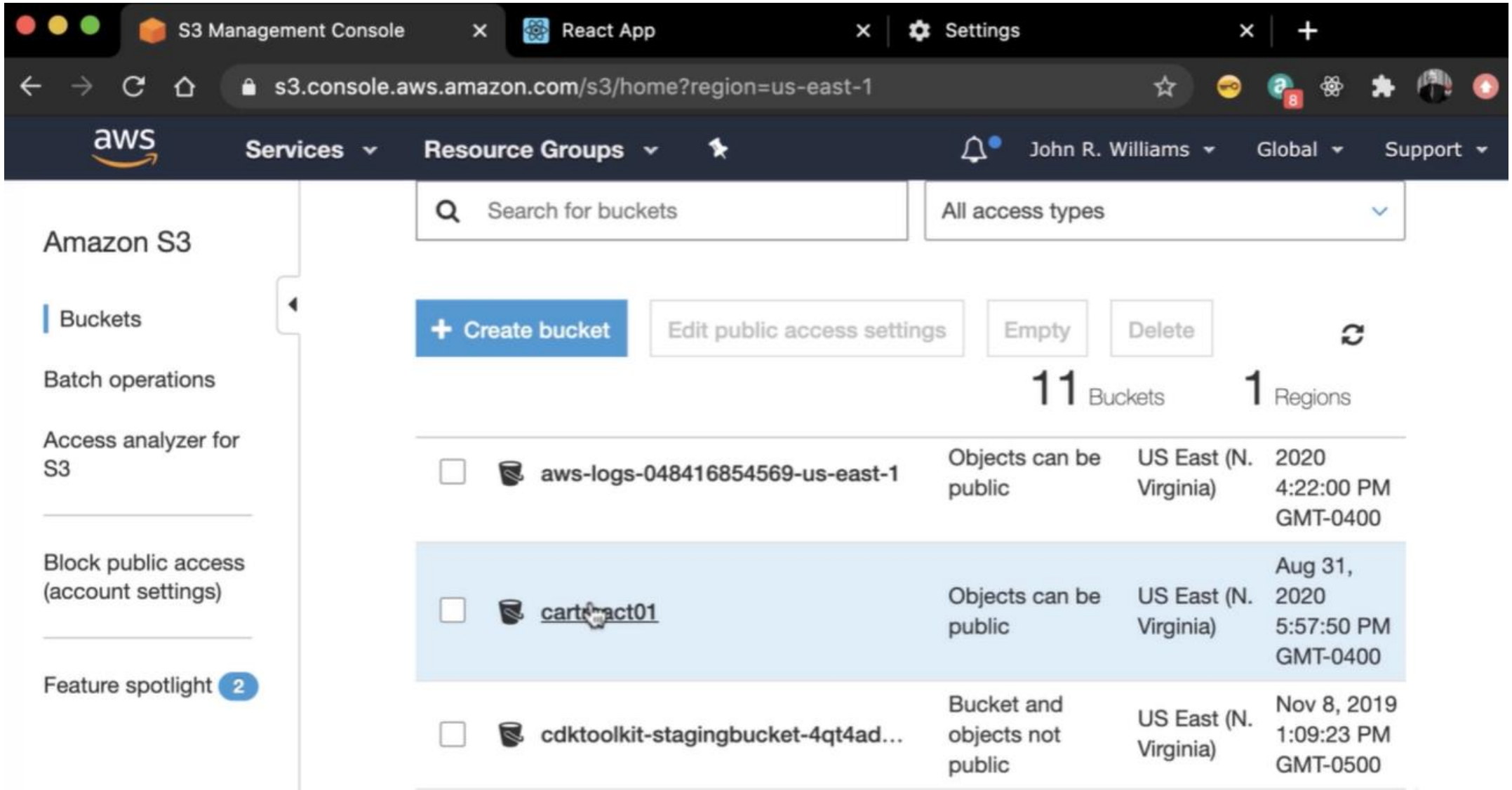
Deploying Static Website On AWS3 (10/28)



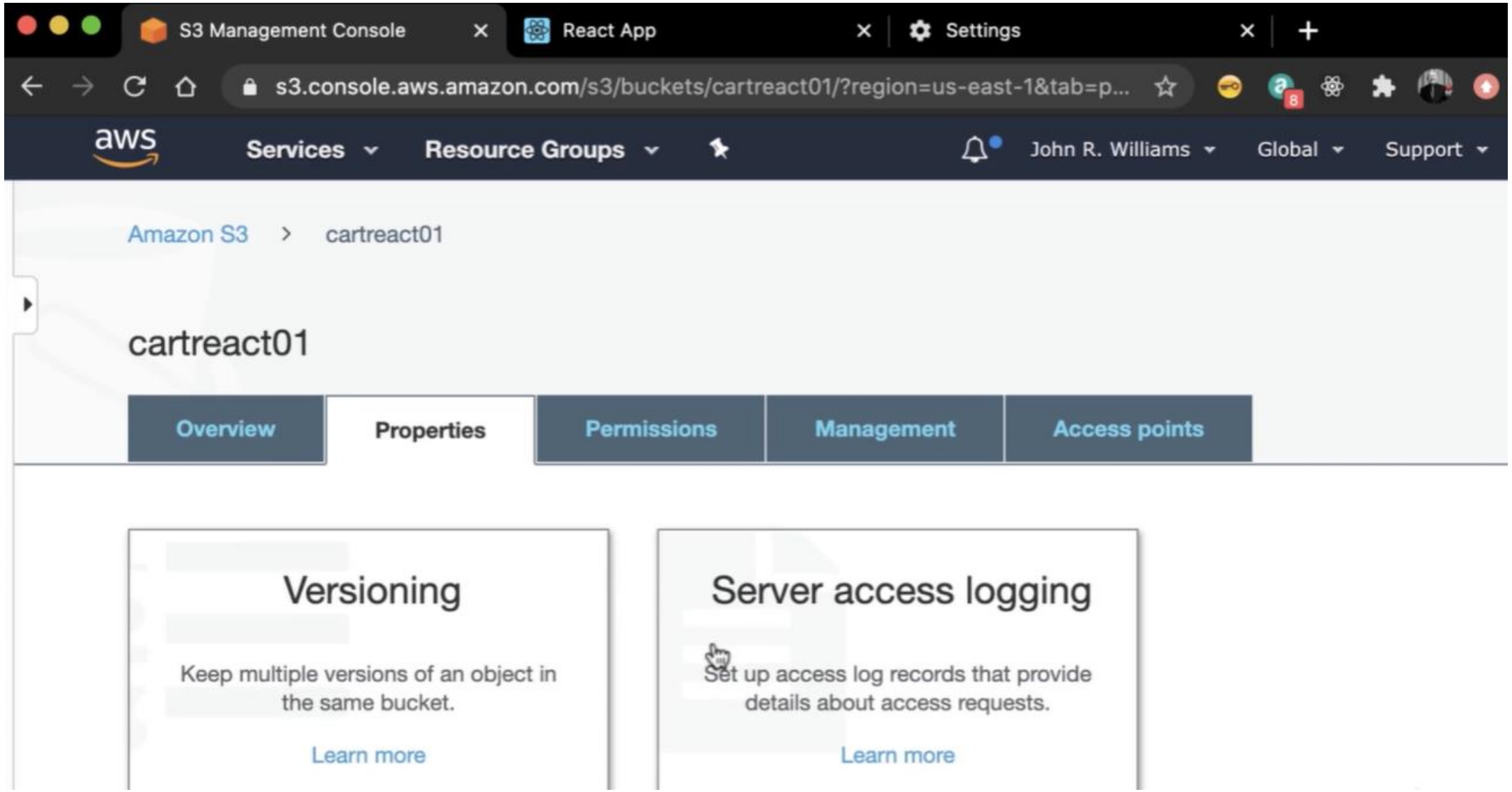
Deploying Static Website On AWS3 (11/28)



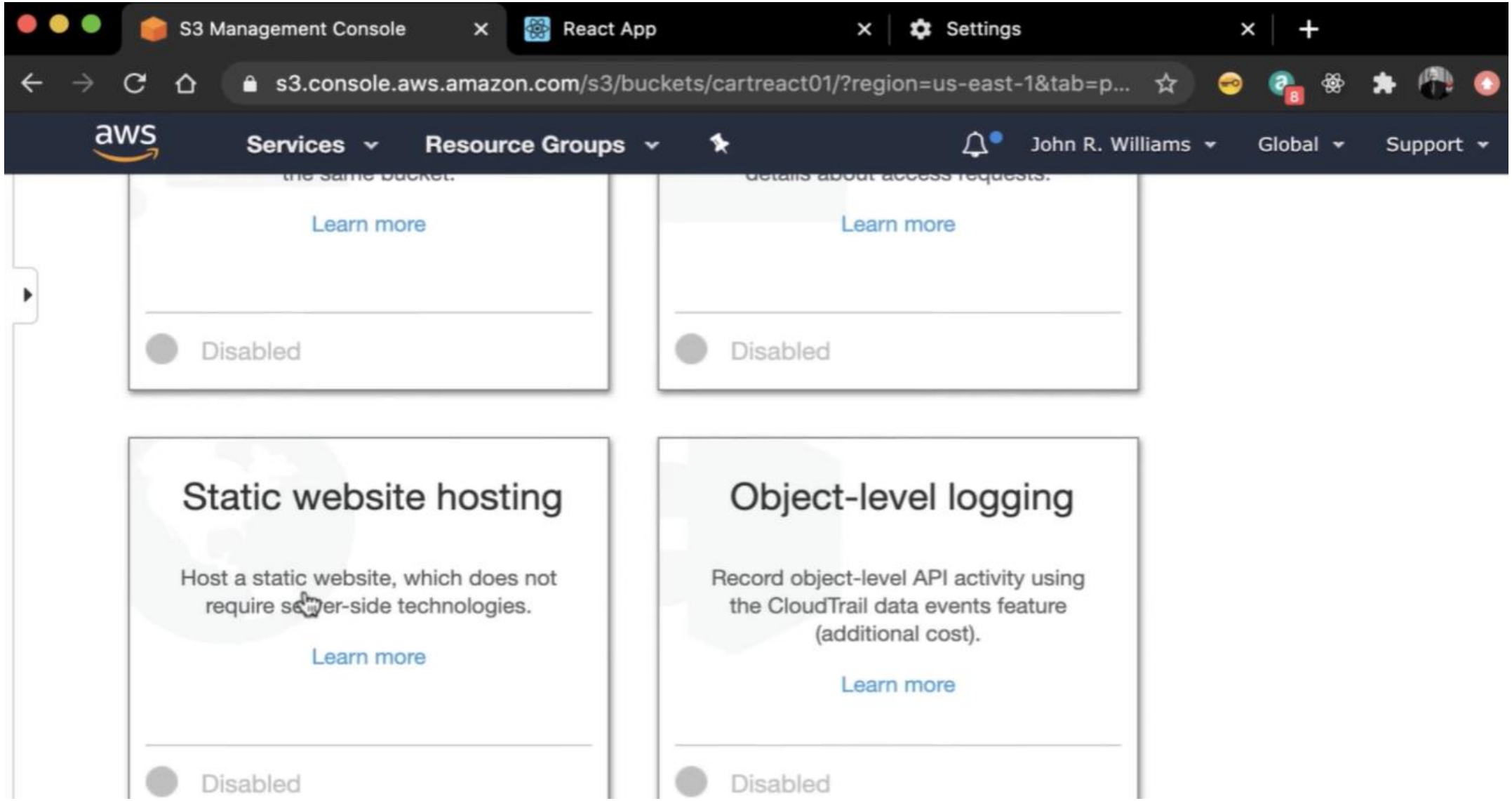
Deploying Static Website On AWS3 (12/28)



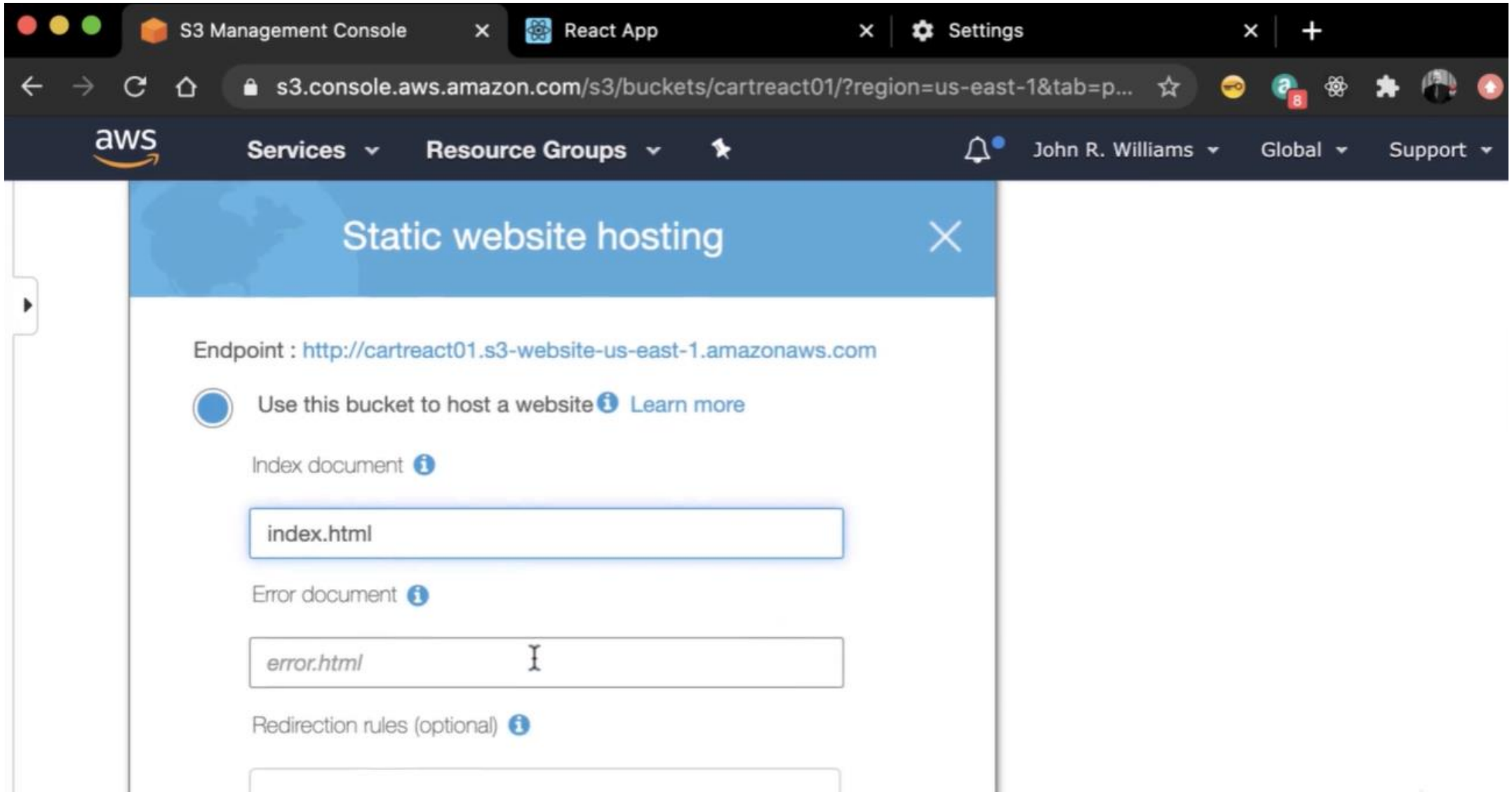
Deploying Static Website On AWS3 (13/28)



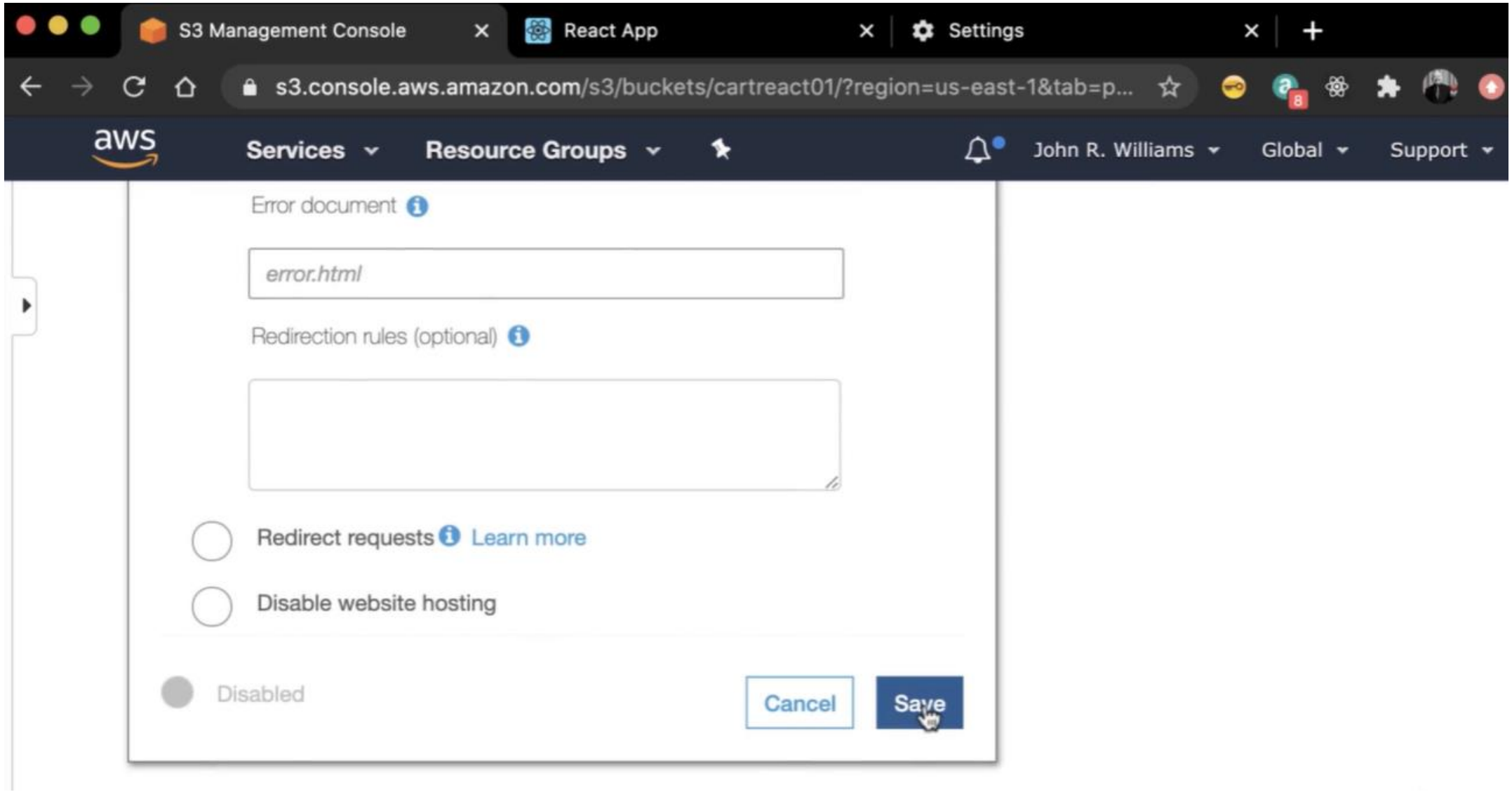
Deploying Static Website On AWS3 (14/28)



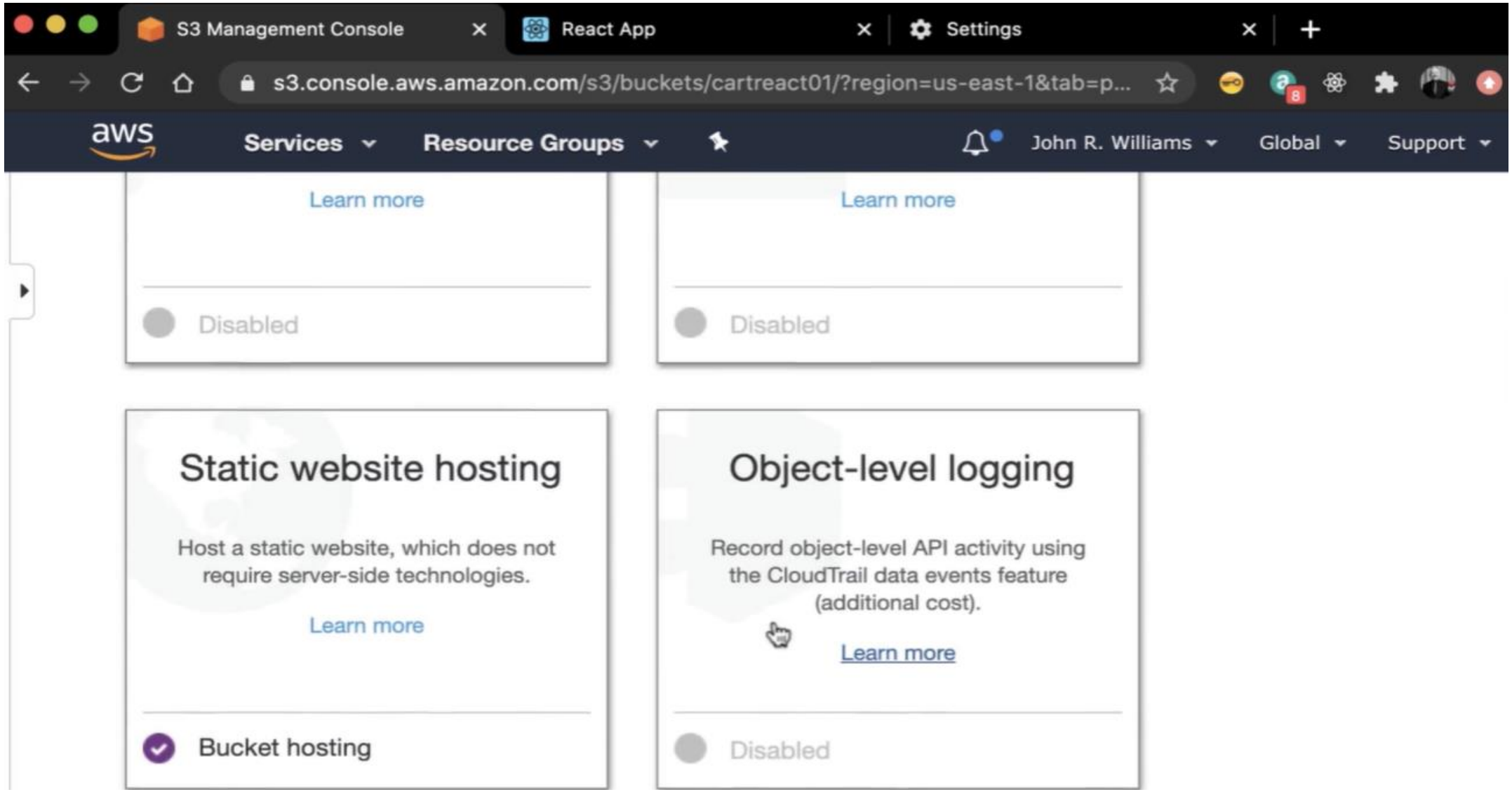
Deploying Static Website On AWS3 (15/28)



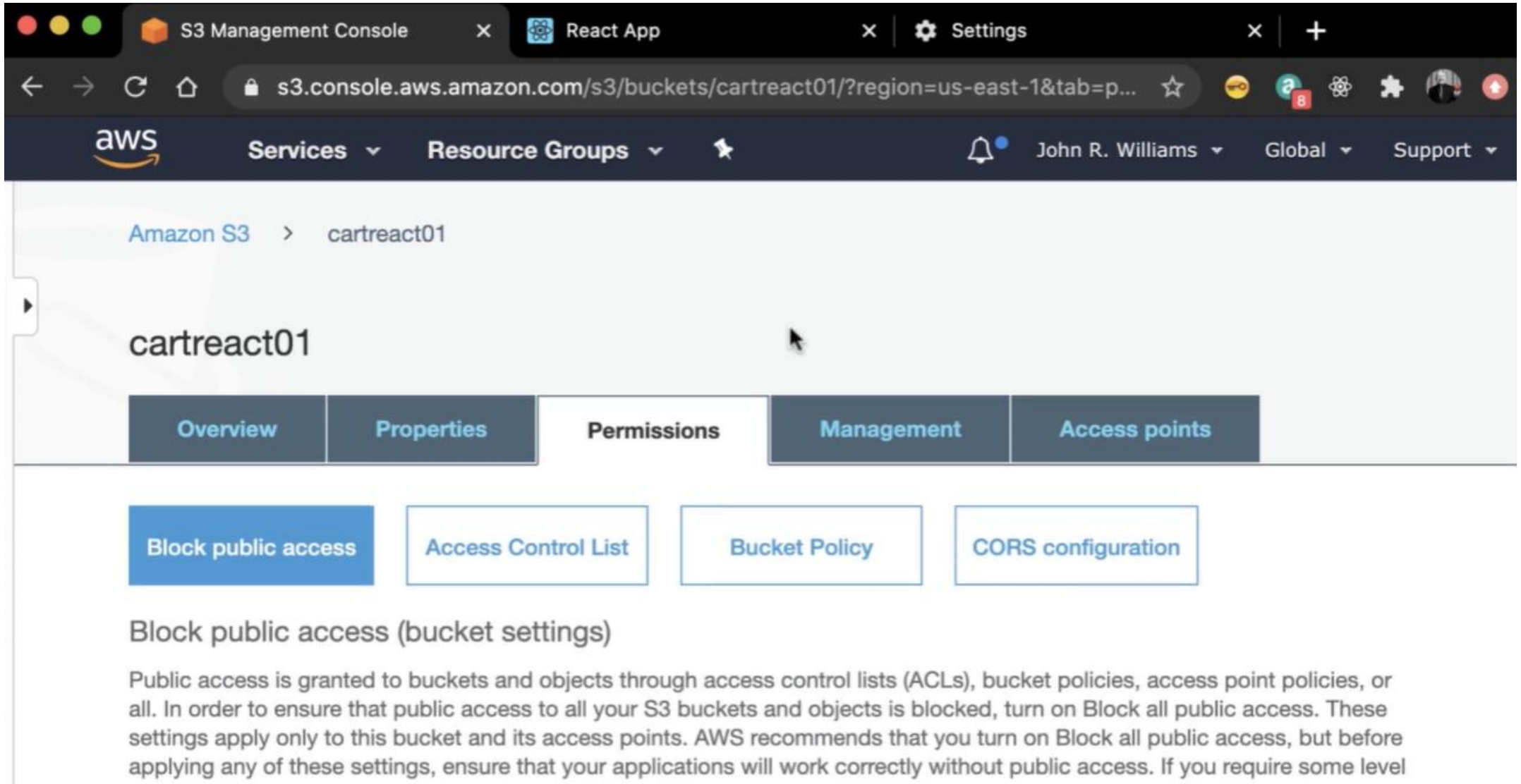
Deploying Static Website On AWS3 (16/28)



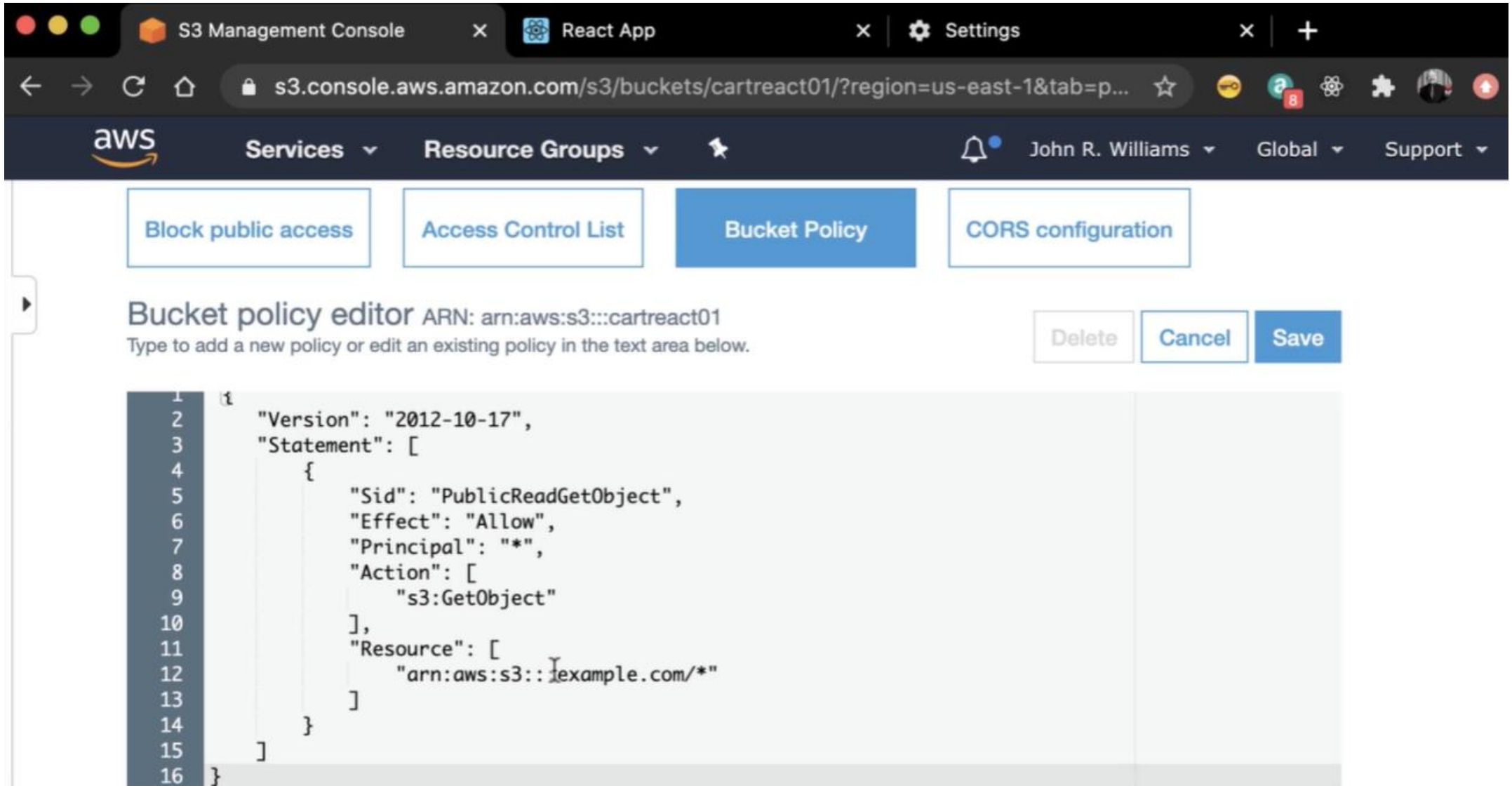
Deploying Static Website On AWS3 (17/28)



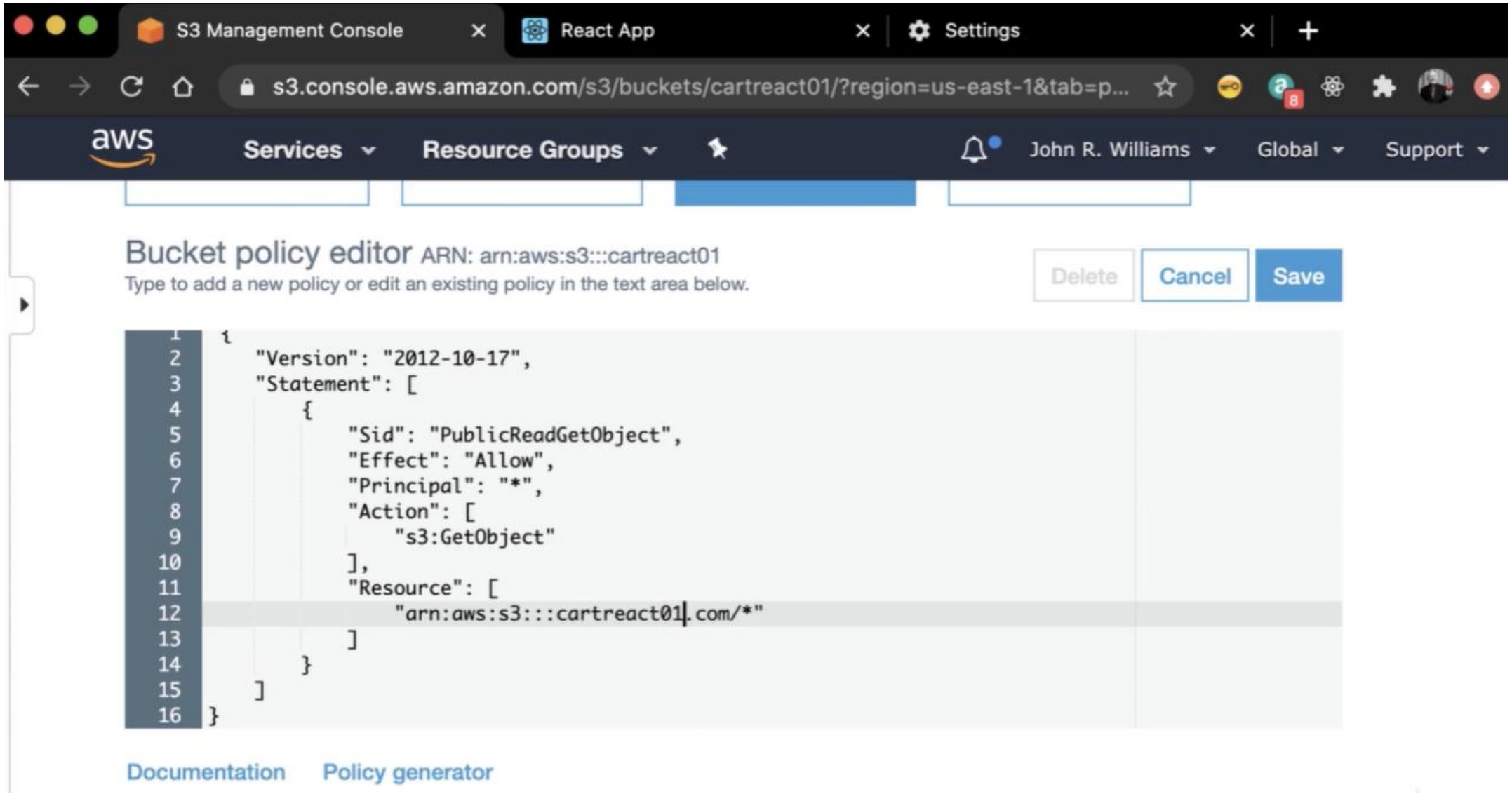
Deploying Static Website On AWS3 (18/28)



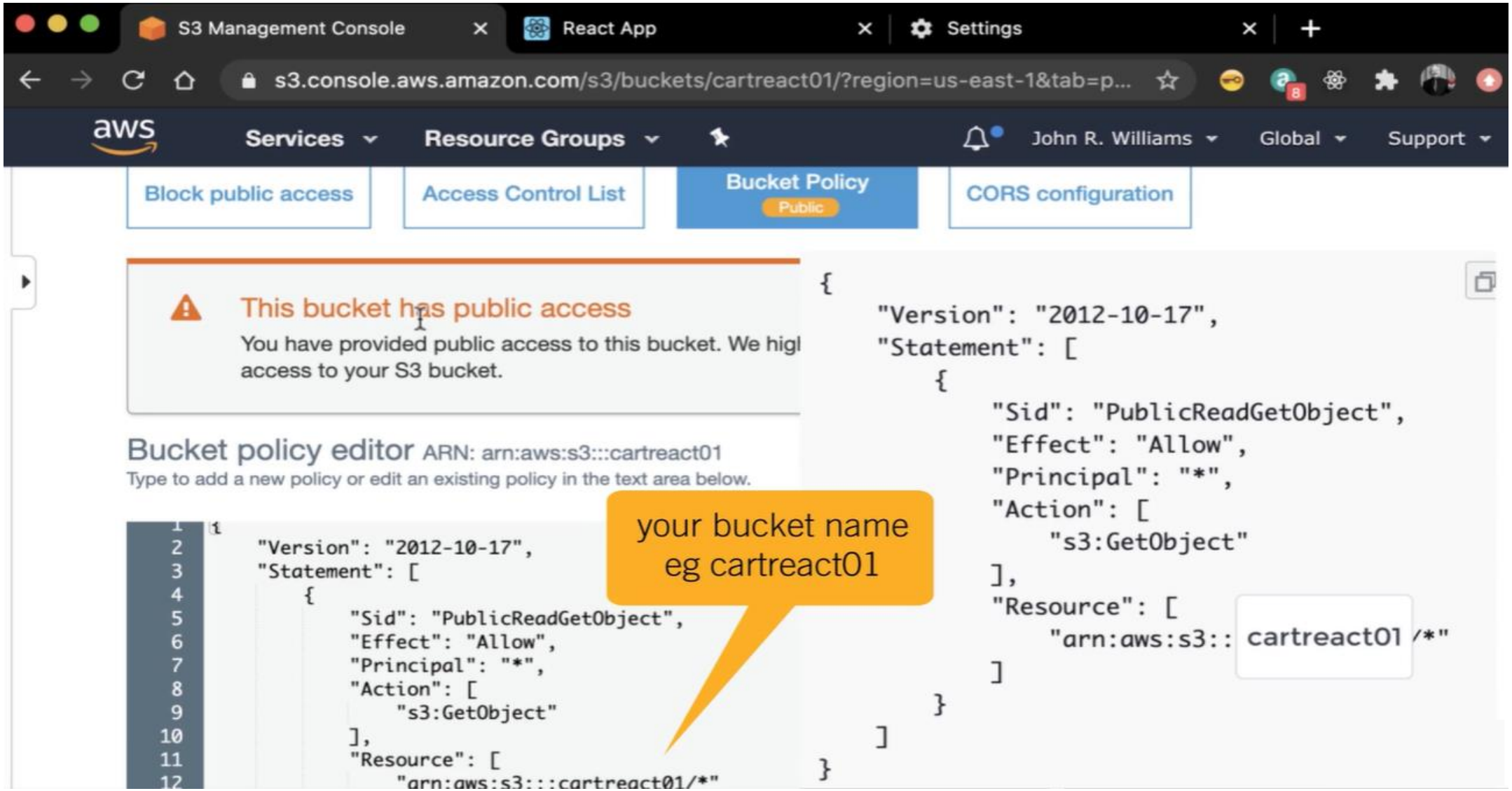
Deploying Static Website On AWS3 (19/28)



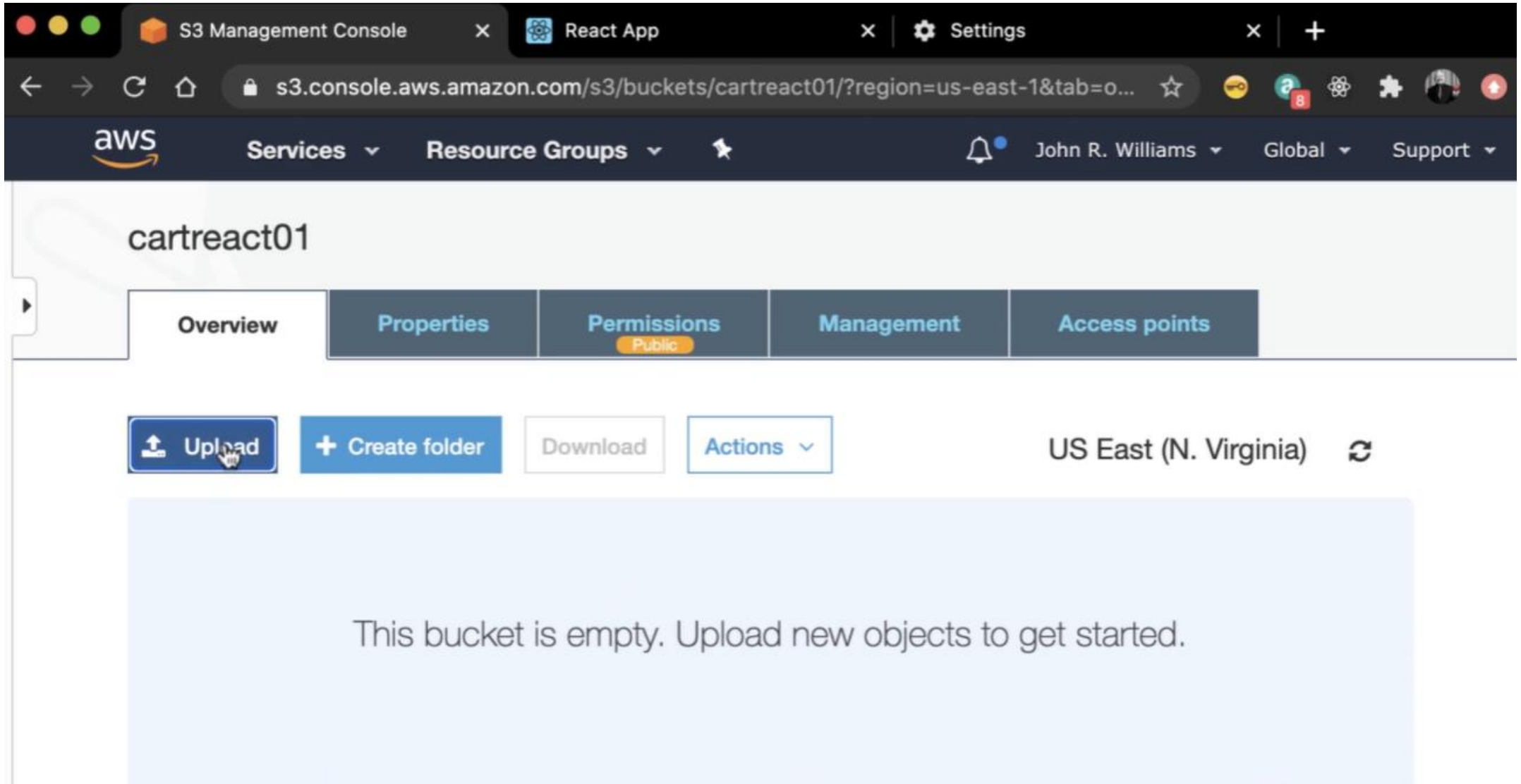
Deploying Static Website On AWS3 (20/28)



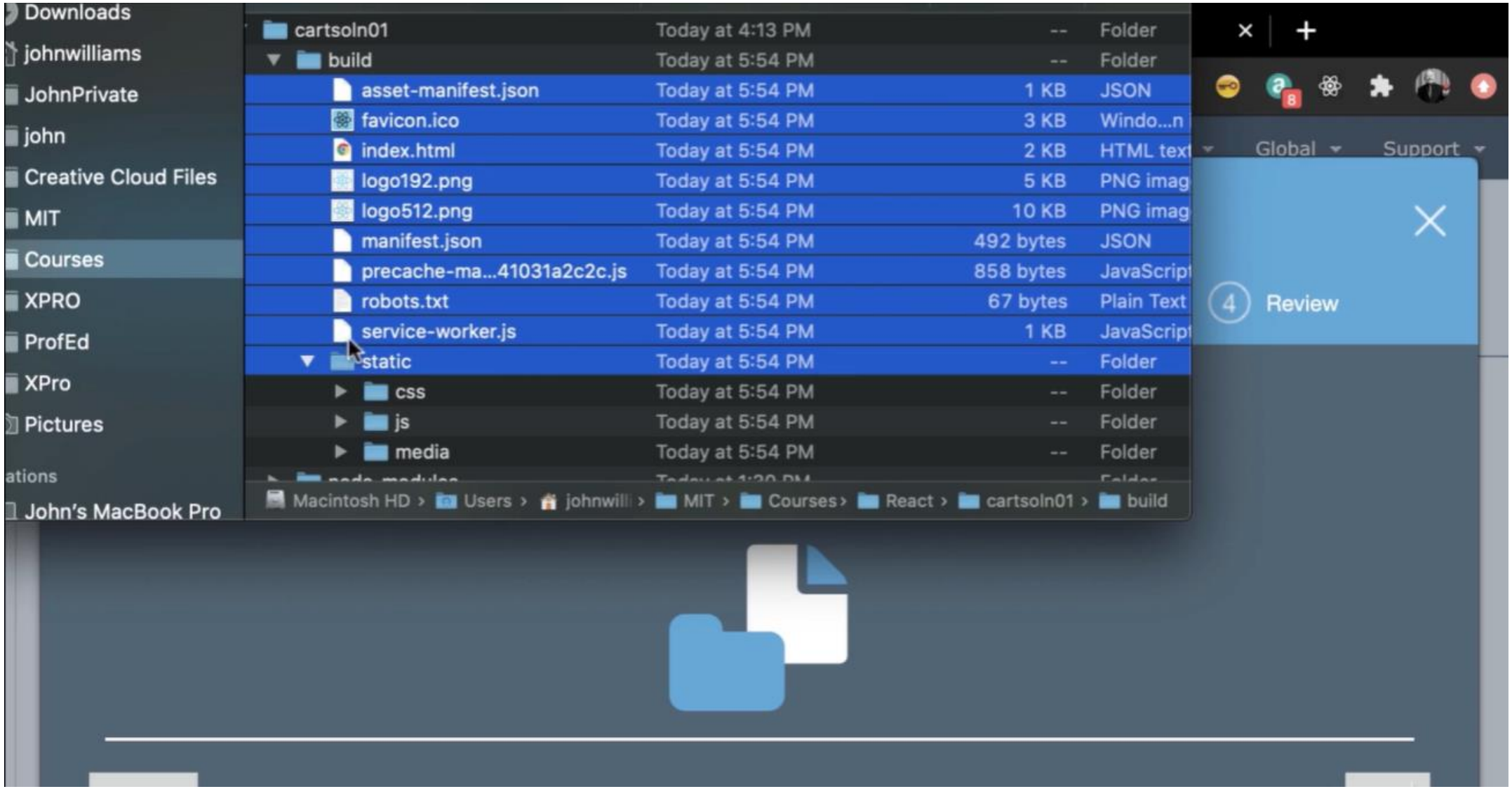
Deploying Static Website On AWS3 (21/28)



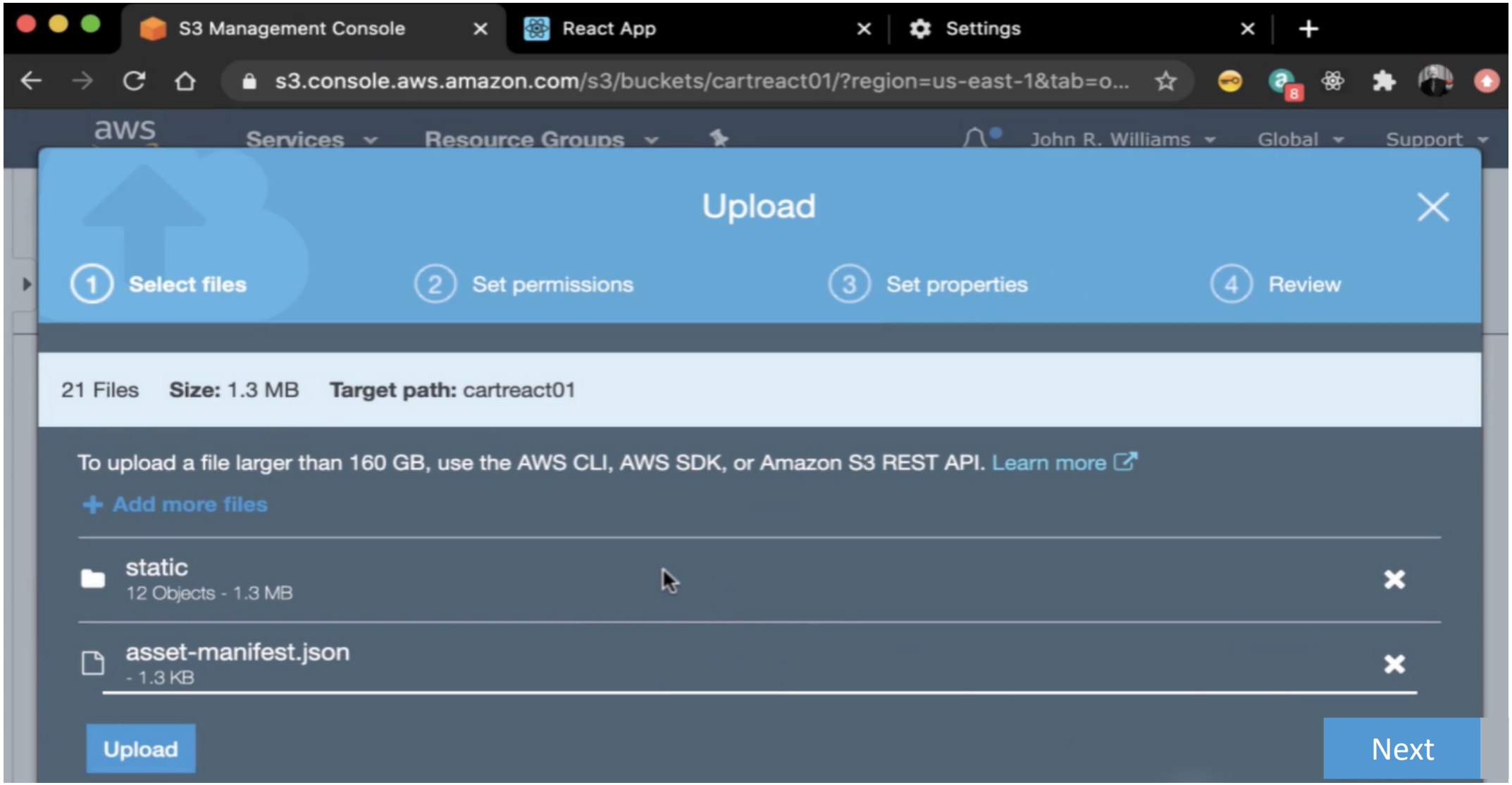
Deploying Static Website On AWS3 (22/28)



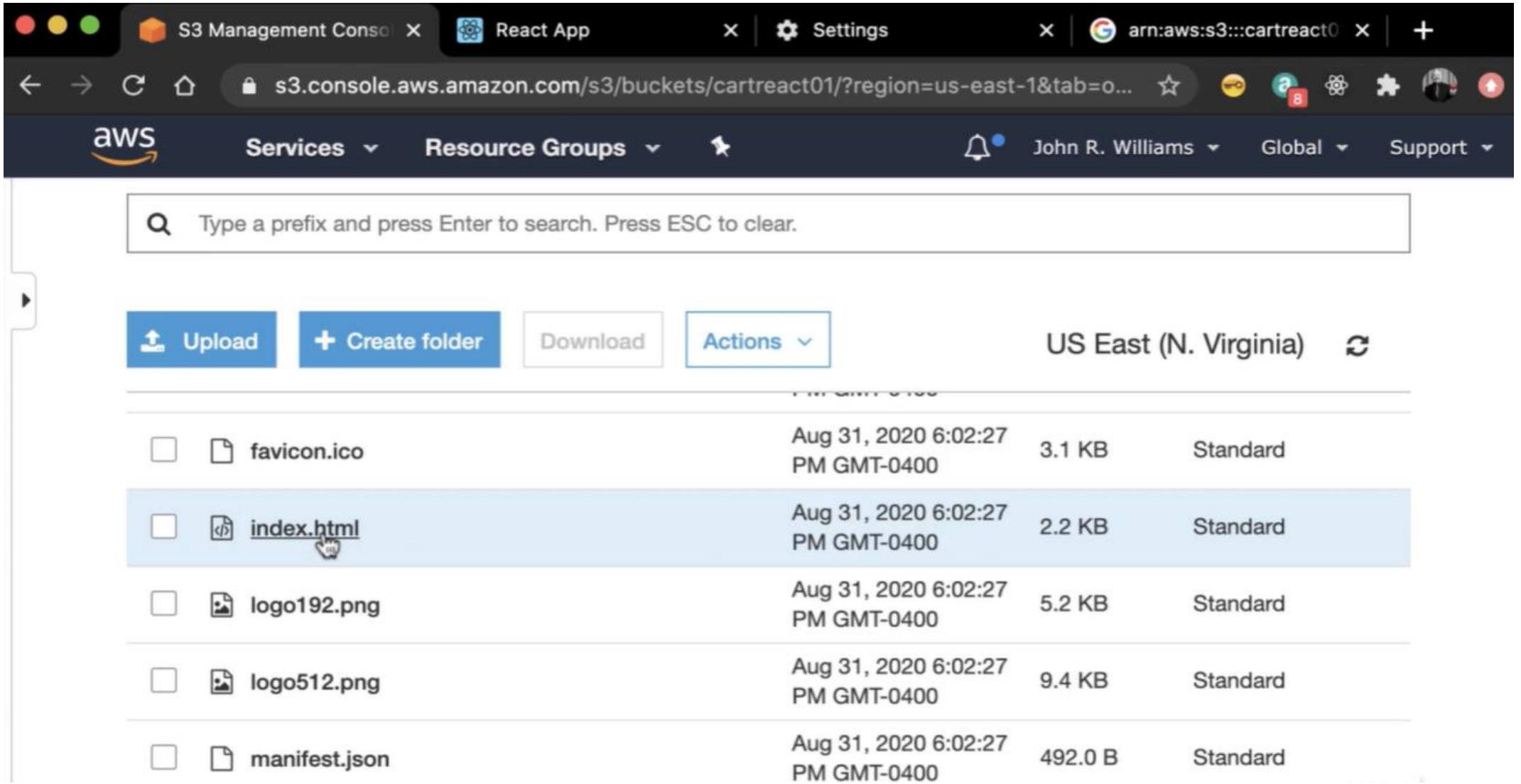
Deploying Static Website On AWS3 (23/28)



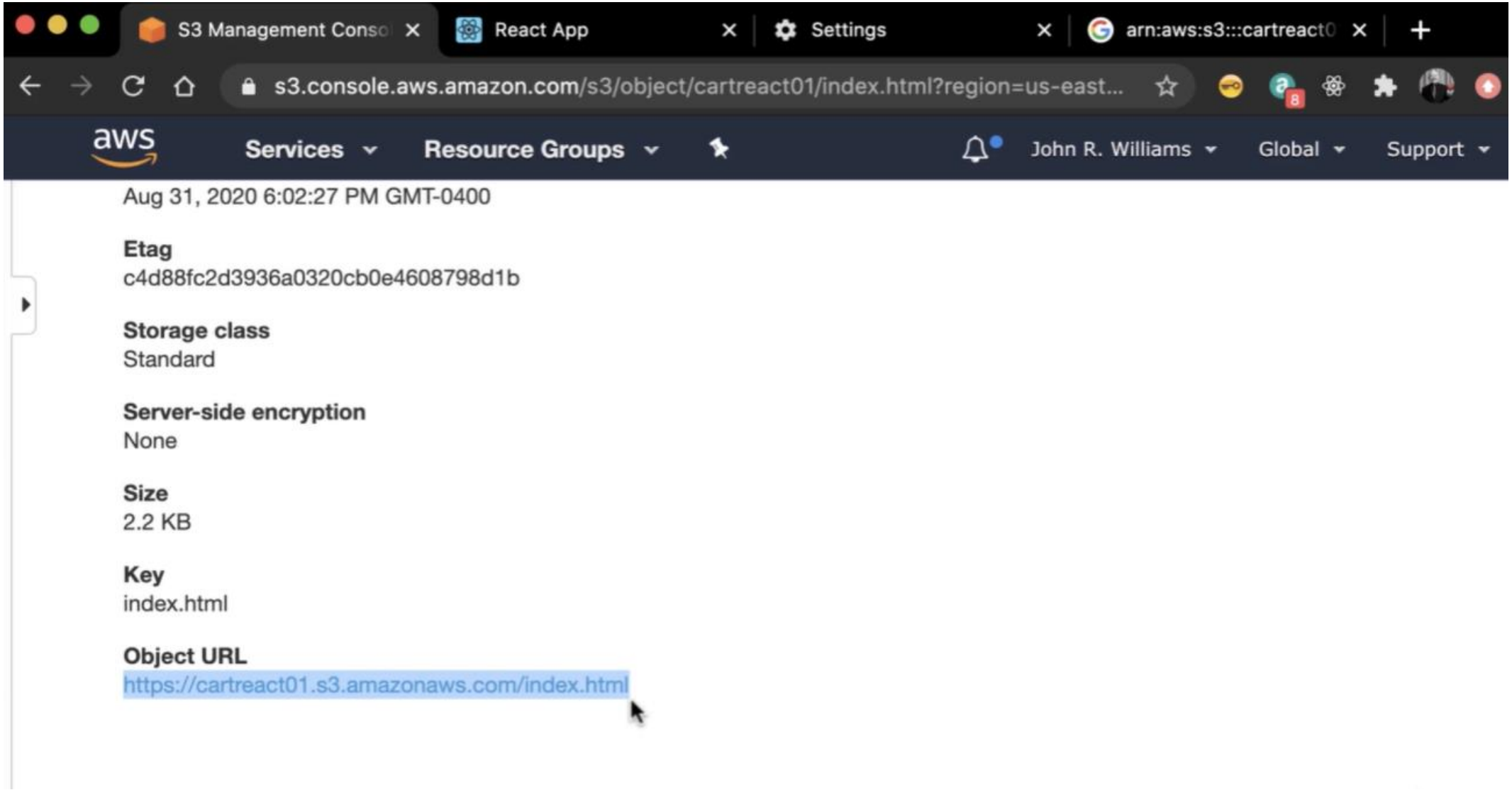
Deploying Static Website On AWS3 (24/28)



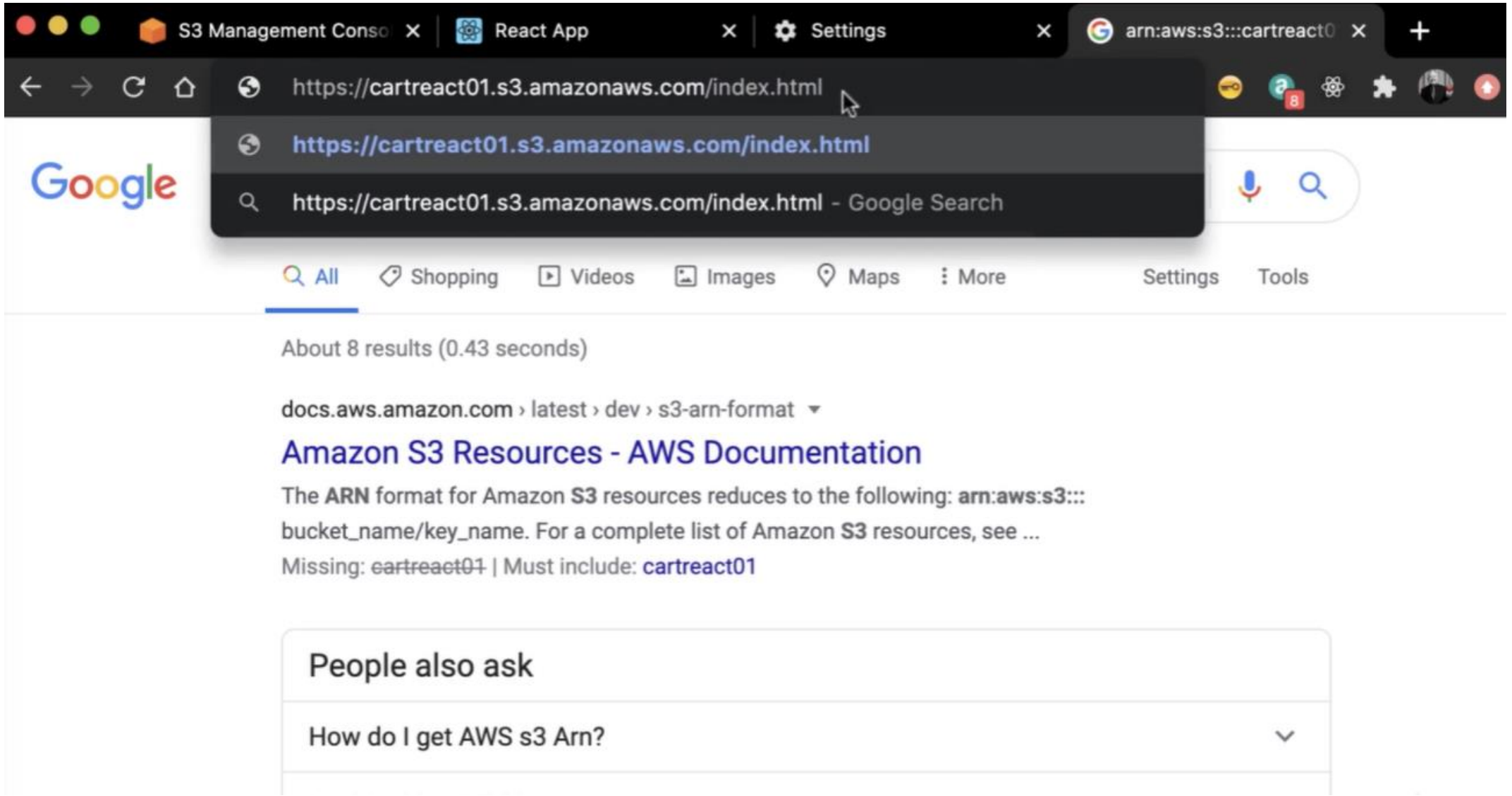
Deploying Static Website On AWS3 (25/28)



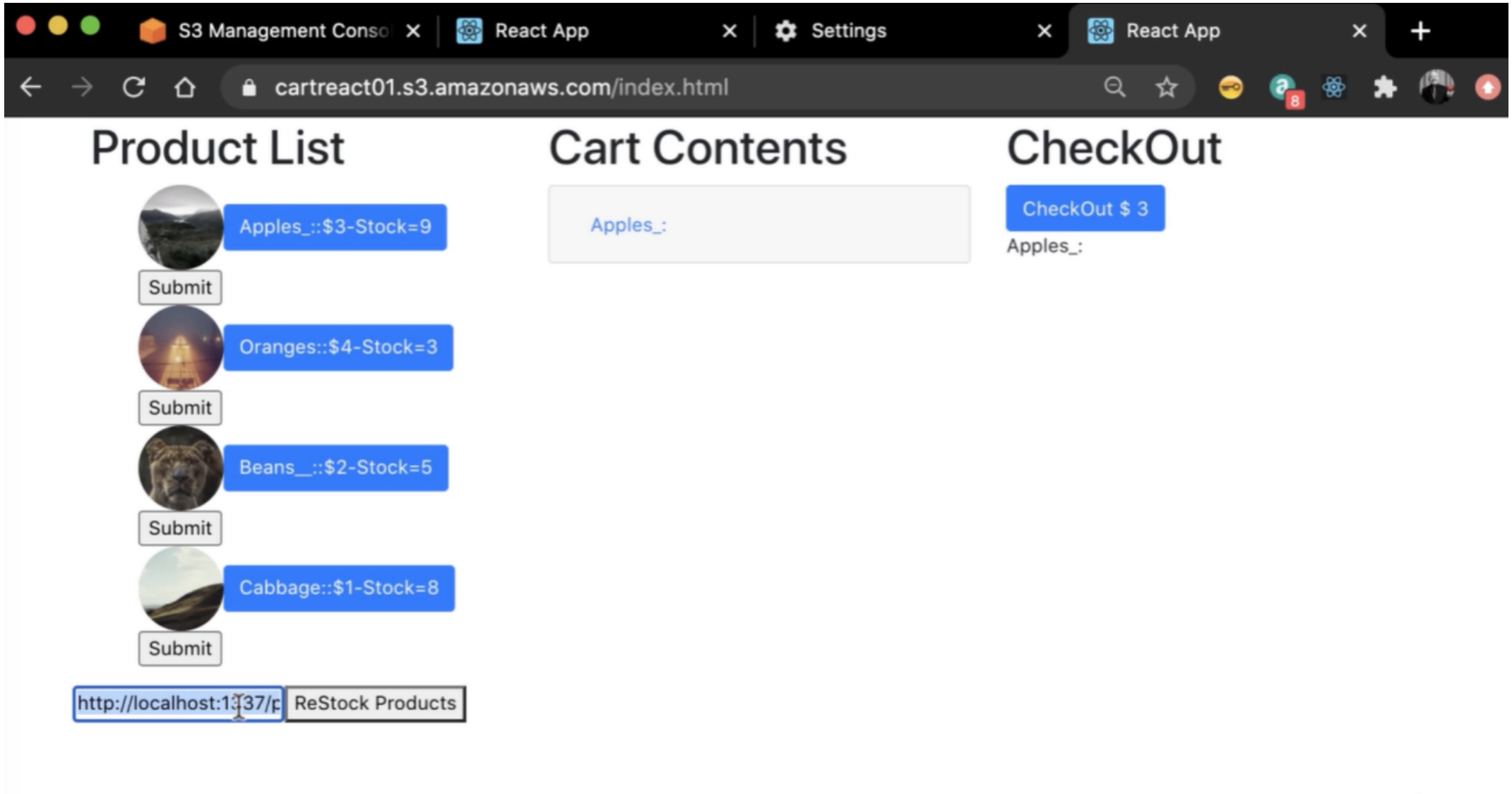
Deploying Static Website On AWS3 (26/28)



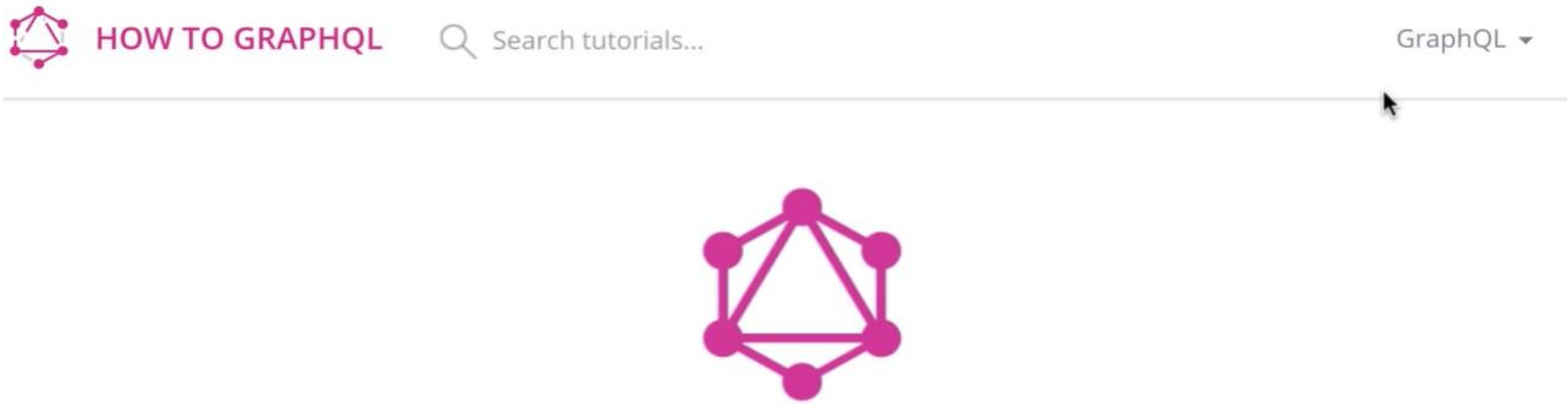
Deploying Static Website On AWS3 (27/28)



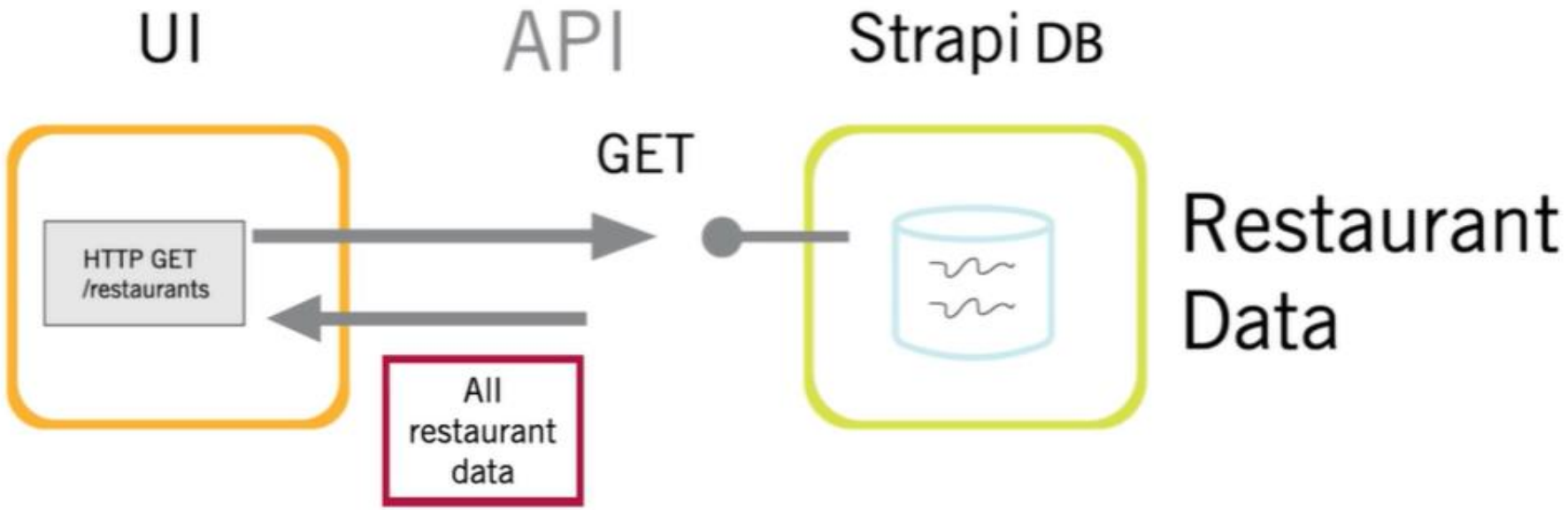
Deploying Static Website On AWS3 (28/28)



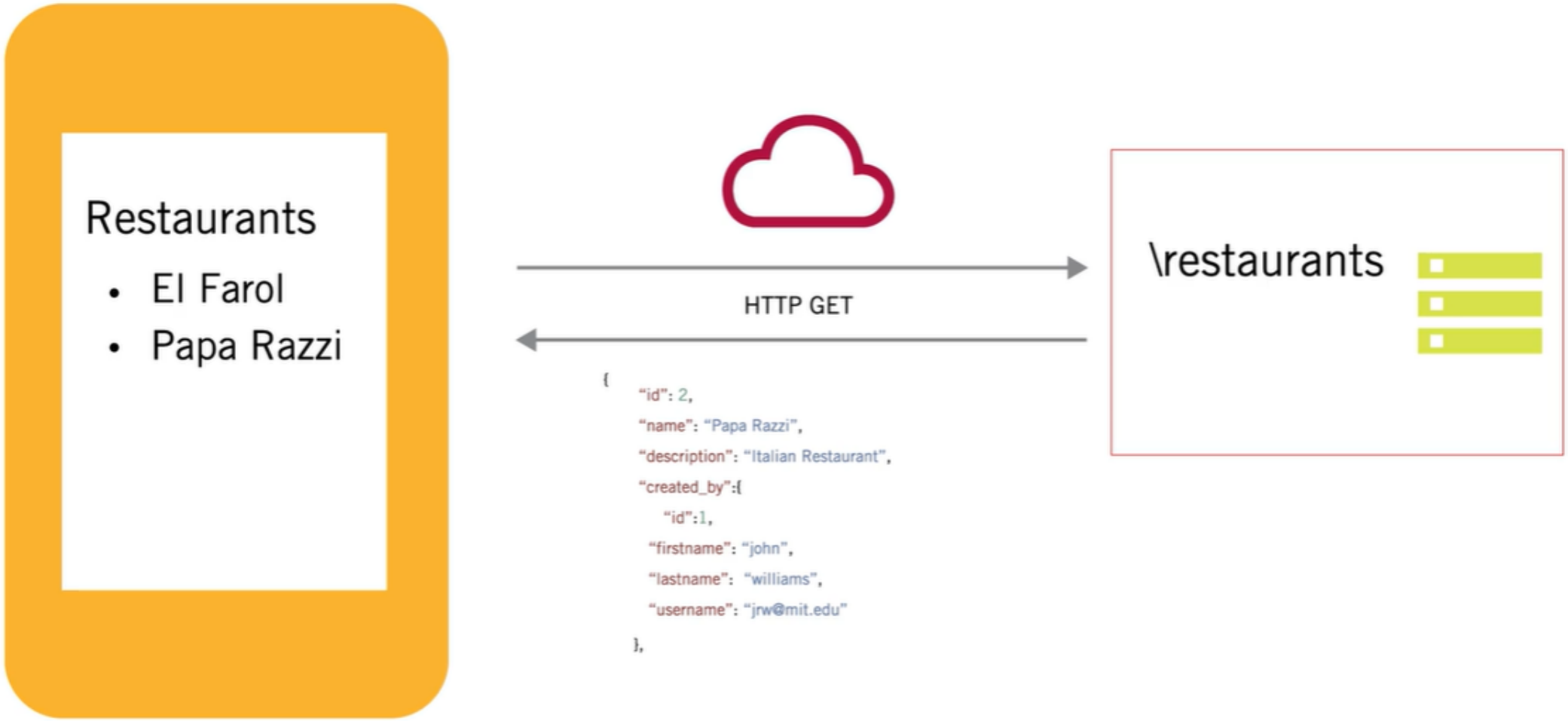
GraphQL



REST API Example



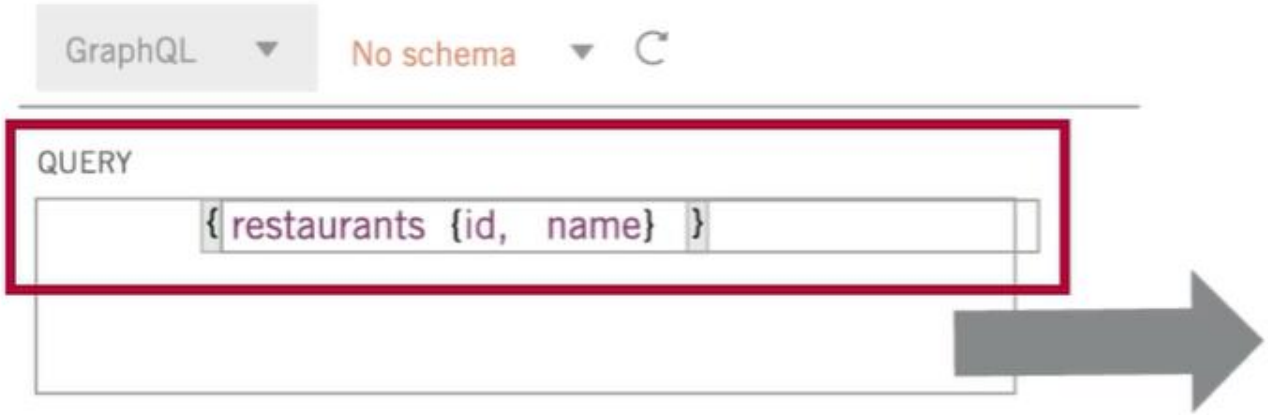
Fetch Data With REST API



REST API – GET \Restaurants Returns All Data About A Restaurant


```
{
  "id": 2,
  "name": "Papa Razzi",
  "description": "Italian Restaurant",
  "created_by": {
    "id":1,
    "firstname": "john",
    "lastname": "williams",
    "username": "jrw@mit.edu",
  },
  "updated_by": {
    "id": 1,
    "firstname": "john",
    "lastname": "williams",
    "username": "jrw@mit.edu",
  }
  "created_at": "2020-08-02T15:54:25.775Z",
  "updated_at": "2020-08-02T15:54:25.787Z",
  "photo": [
   {
    "id": 1,
    "name": "Screen Shot 2020-08-02 at 11.44.42 AM.png",
    "alternativeText": "",
    "caption": "",
    "width": 344,
    "height": 242
    "formats": {
      "thumbnail": {
          "name": "thumbnail_Screen Shot 2020-08-02 at 11.44.42 AM.png",
          "hash":
  "thumbnail_Screen_Shot_2020_08_02_at_11_44_42_AM_b623b44eff",
          "ext": ".png",
          "mime": "image/png",
          "width": 222,
          "height": 156,
          "size": 82.86,
          "path": null,
          "url":
"/uploads/thumbnail_Screen_Shot_2020_08_02_at_11_44_42_AM_b623b44eff.png"
      },
    "hash": "Screen_Shot_2020_08_02_at_11_44_42_AM_b623b44eff",
    "ext": ".png",
    "mime": "image/png",
    "size": 172.2,
    "url":
"/uploads/thumbnail_Screen_Shot_2020_08_02_at_11_44_42_AM_b623b44eff.png",
    "previewURL": null,
    "provider": "local",
    "provider_metadata": null,
    }, "created_by": 1,
    "updated_by": 1,
    "created_at": "2020-08-02T15:45:10.604Z",
    "updated_at": "2020-08-02T15:45:10.627Z"
   },
  ]
},
```

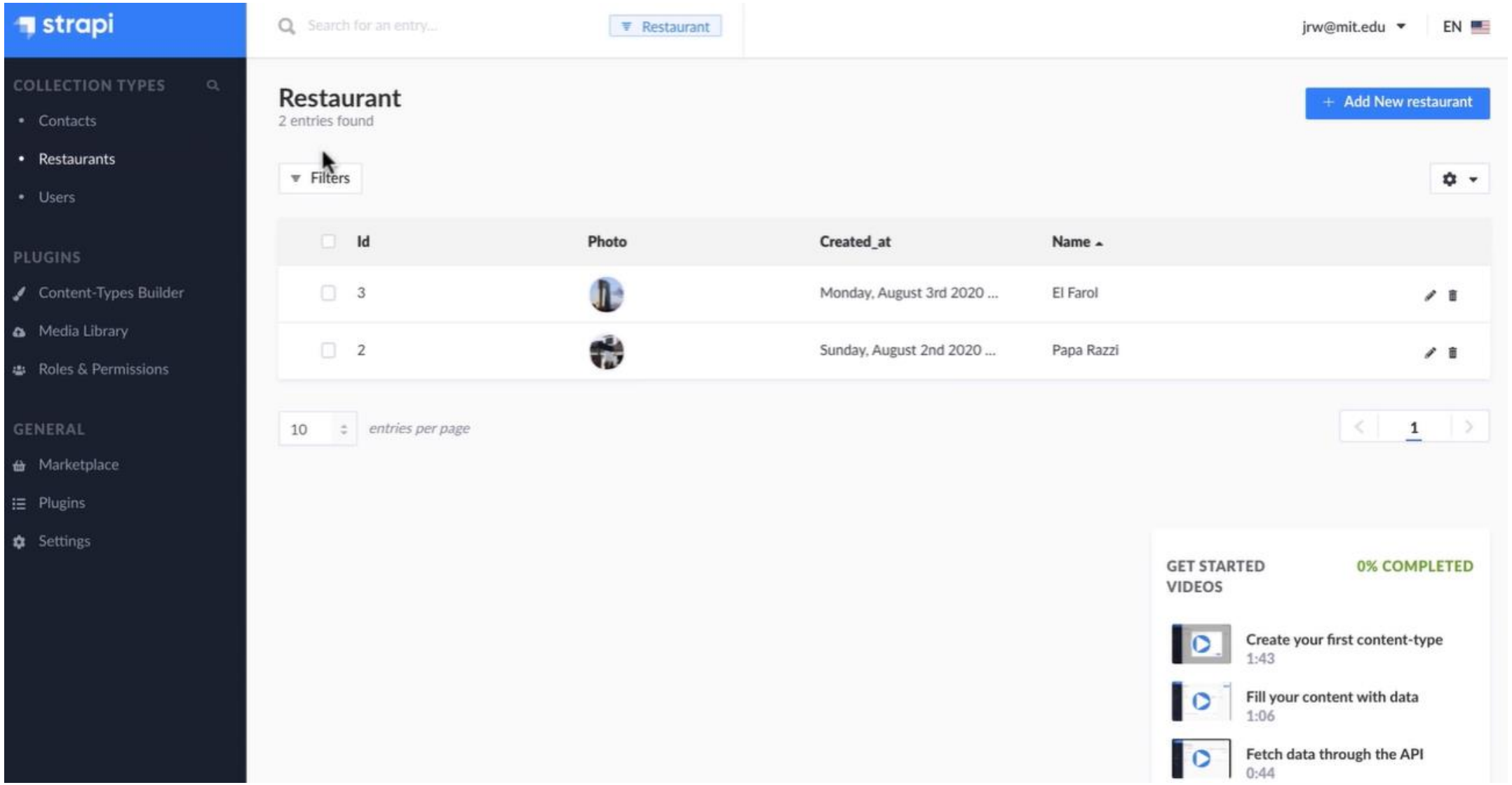
Graphql Query – Returns Only The Selected Information (1/2)



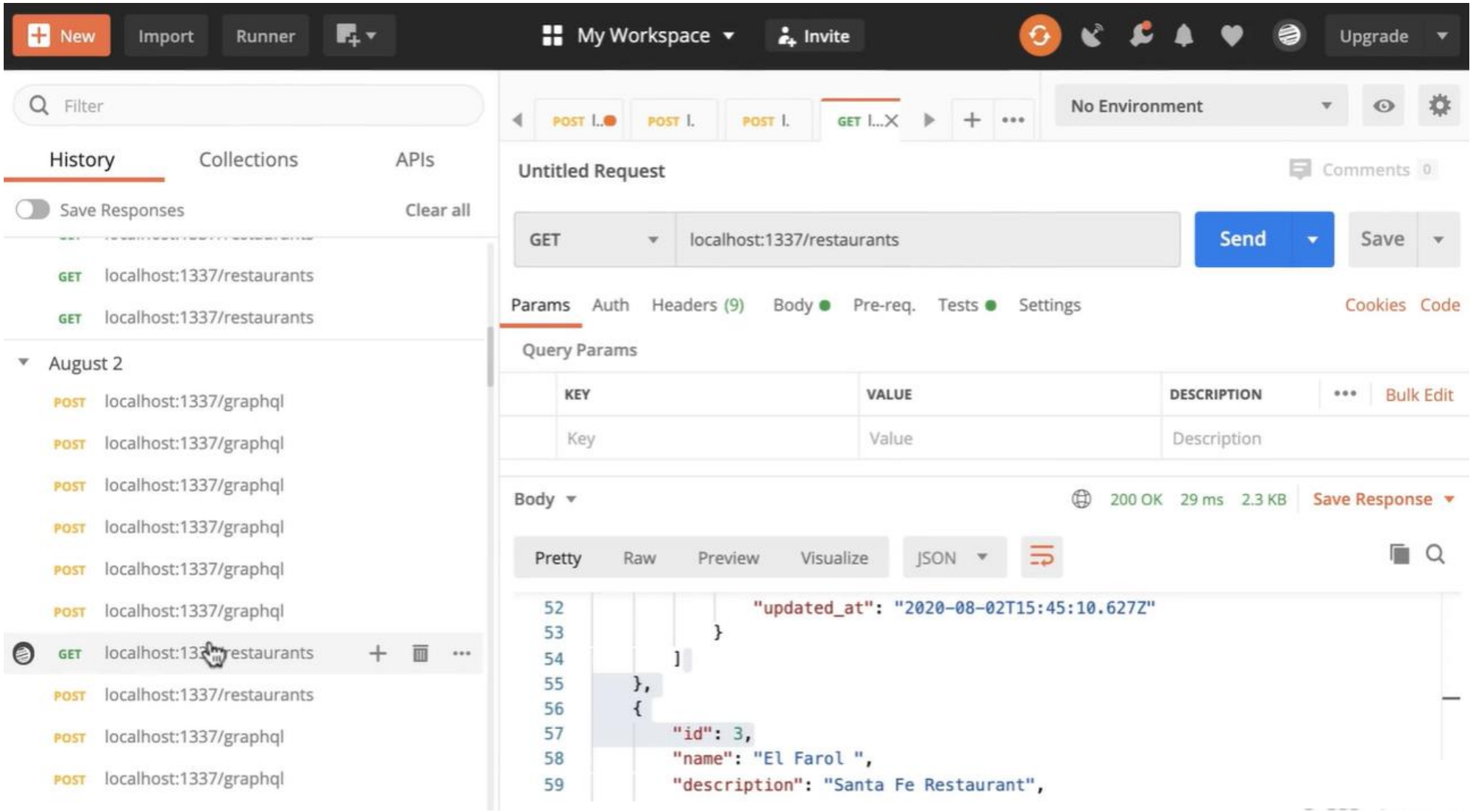

```
{
    "data": {
        "restaurants": [
            {
                "id": "2",
                "name": "Papa Razzi"
            },
            {
                "id": "3",
                "name": "El Farol"
            }

    }
}
```

Graphql Query – Returns Only The Selected Information (2/2)

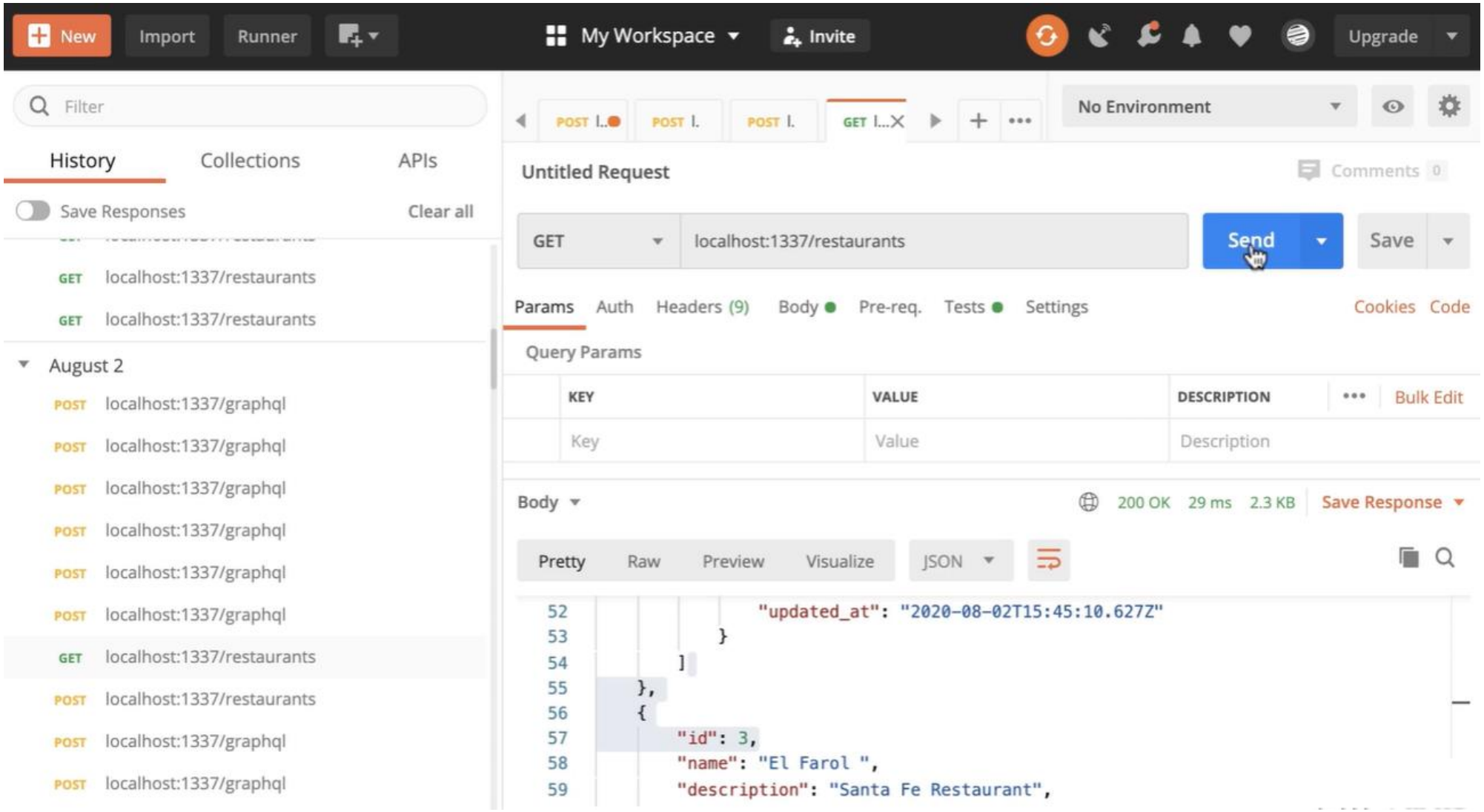
Graphql Query Example – Strapi



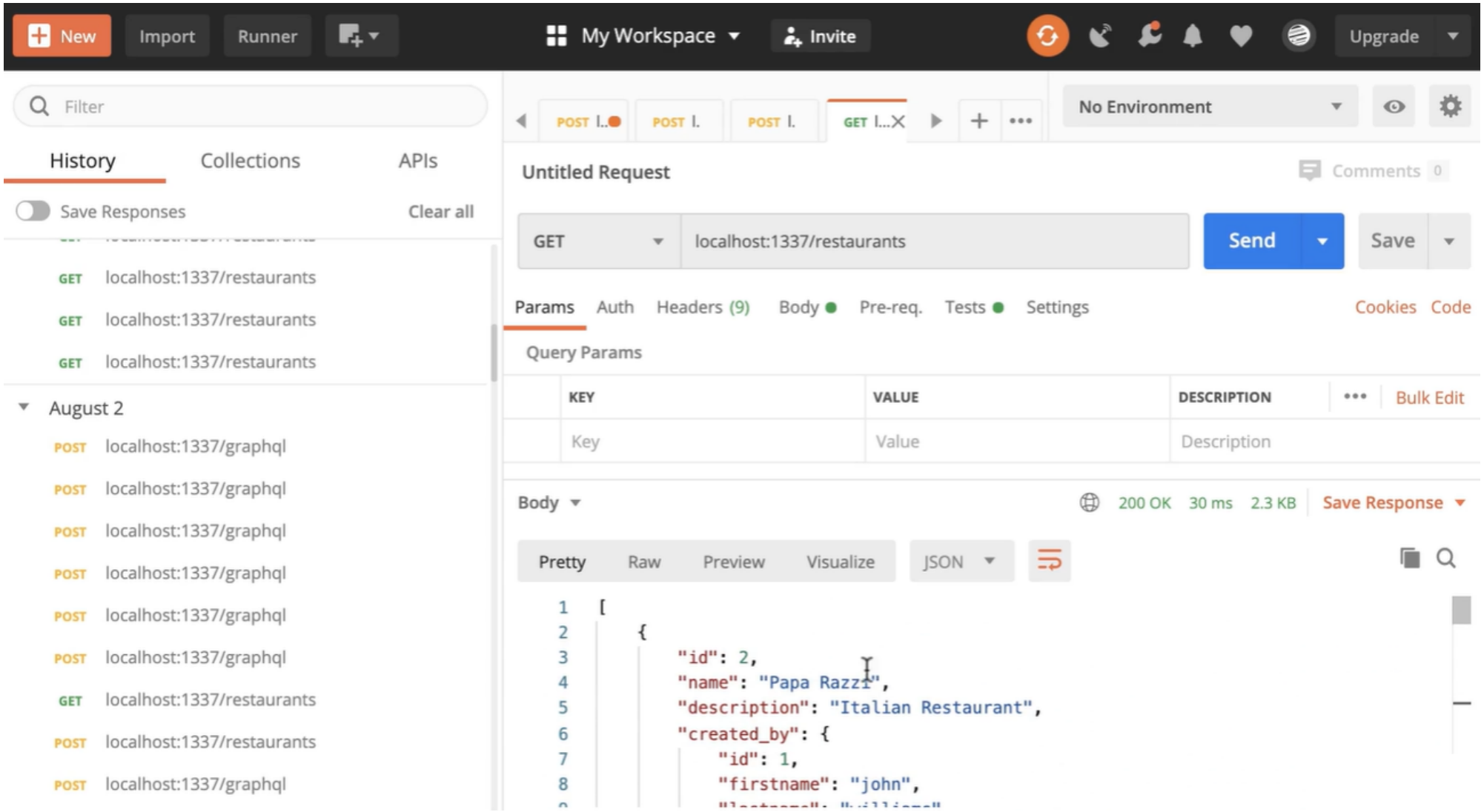
Graphql Query Example – Postman (1/6)



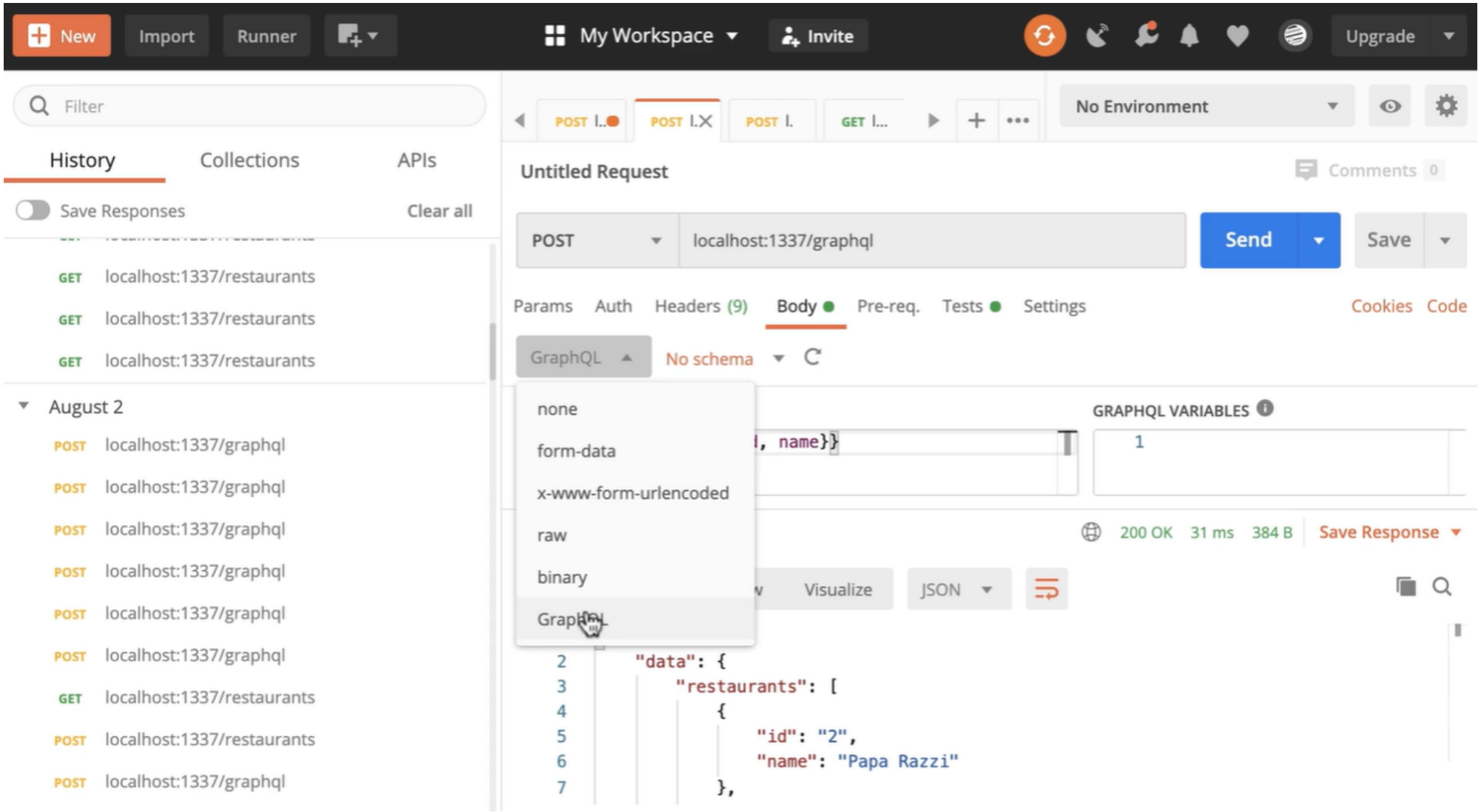
Graphql Query Example – Postman (2/6)



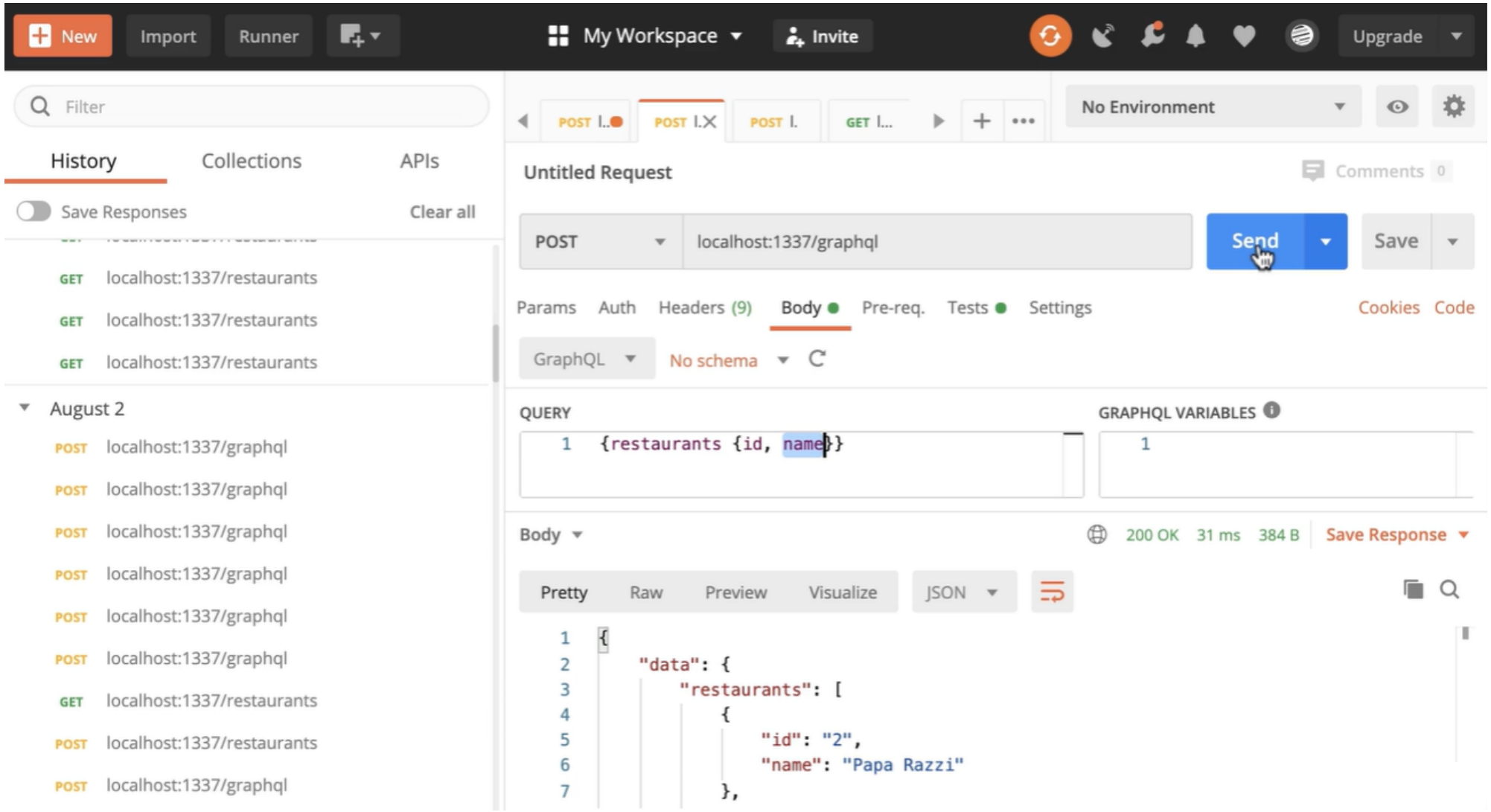
Graphql Query Example – Postman (3/6)



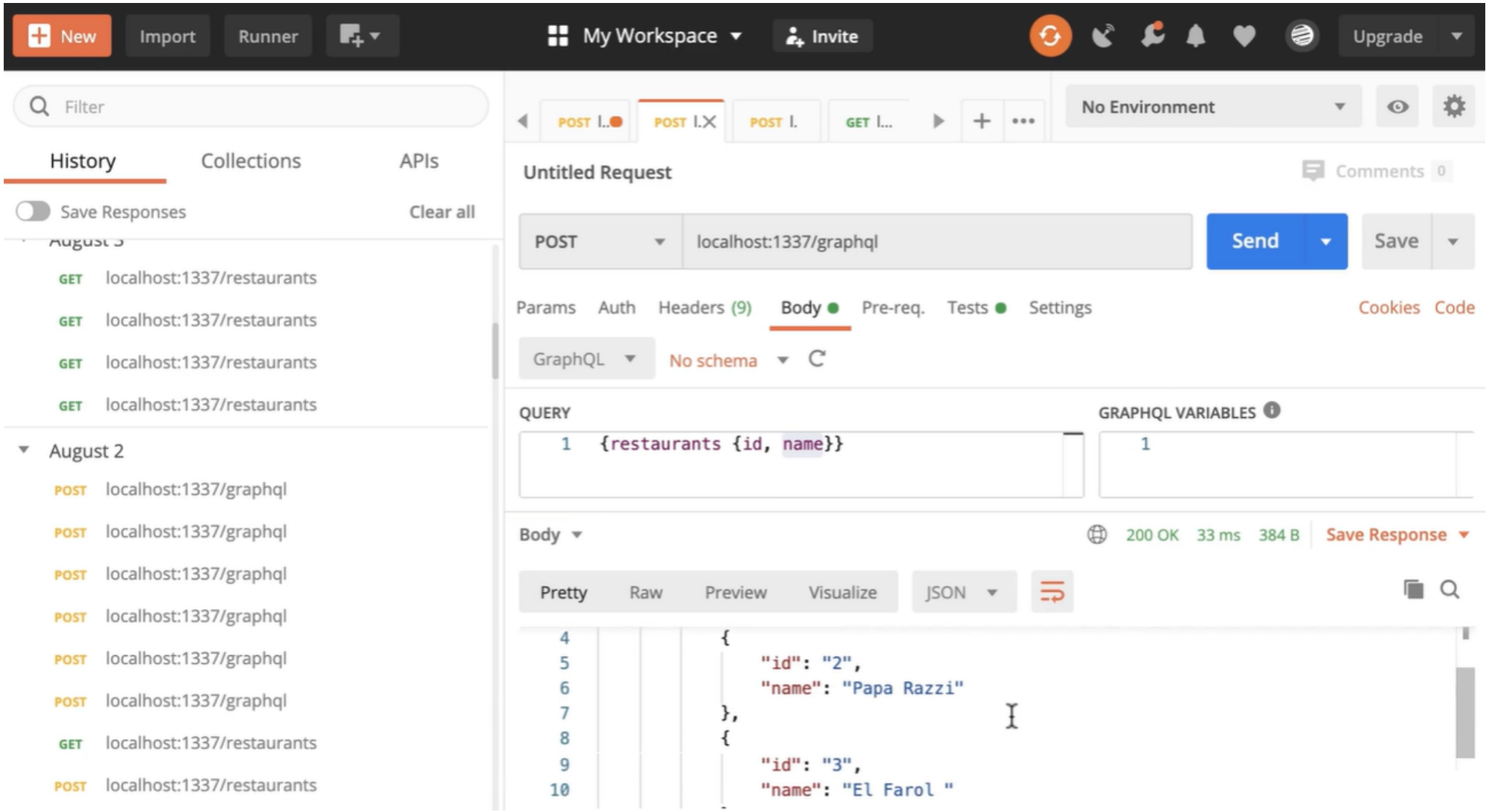
Graphql Query Example – Postman (4/6)



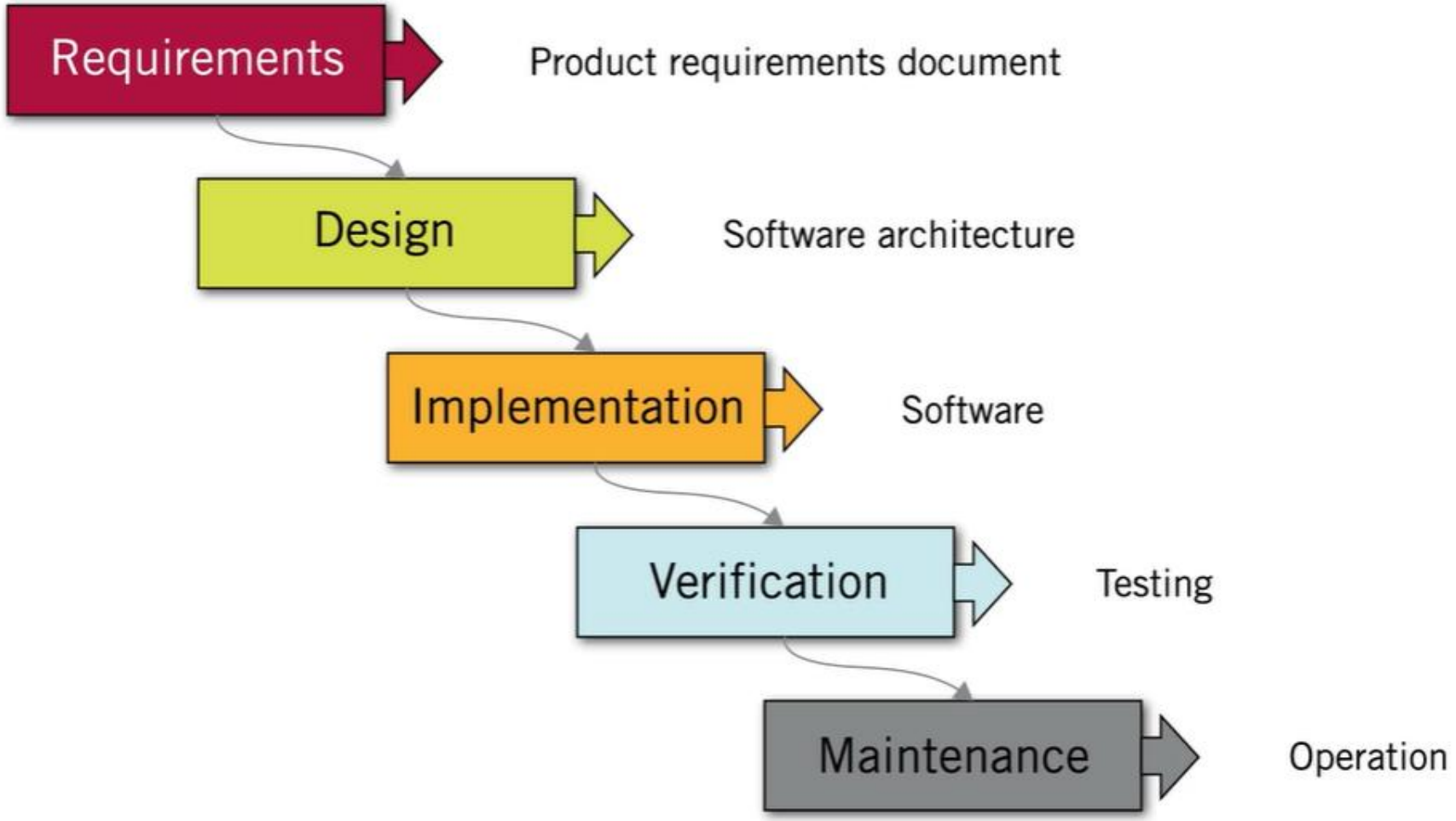
Graphql Query Example – Postman (5/6)



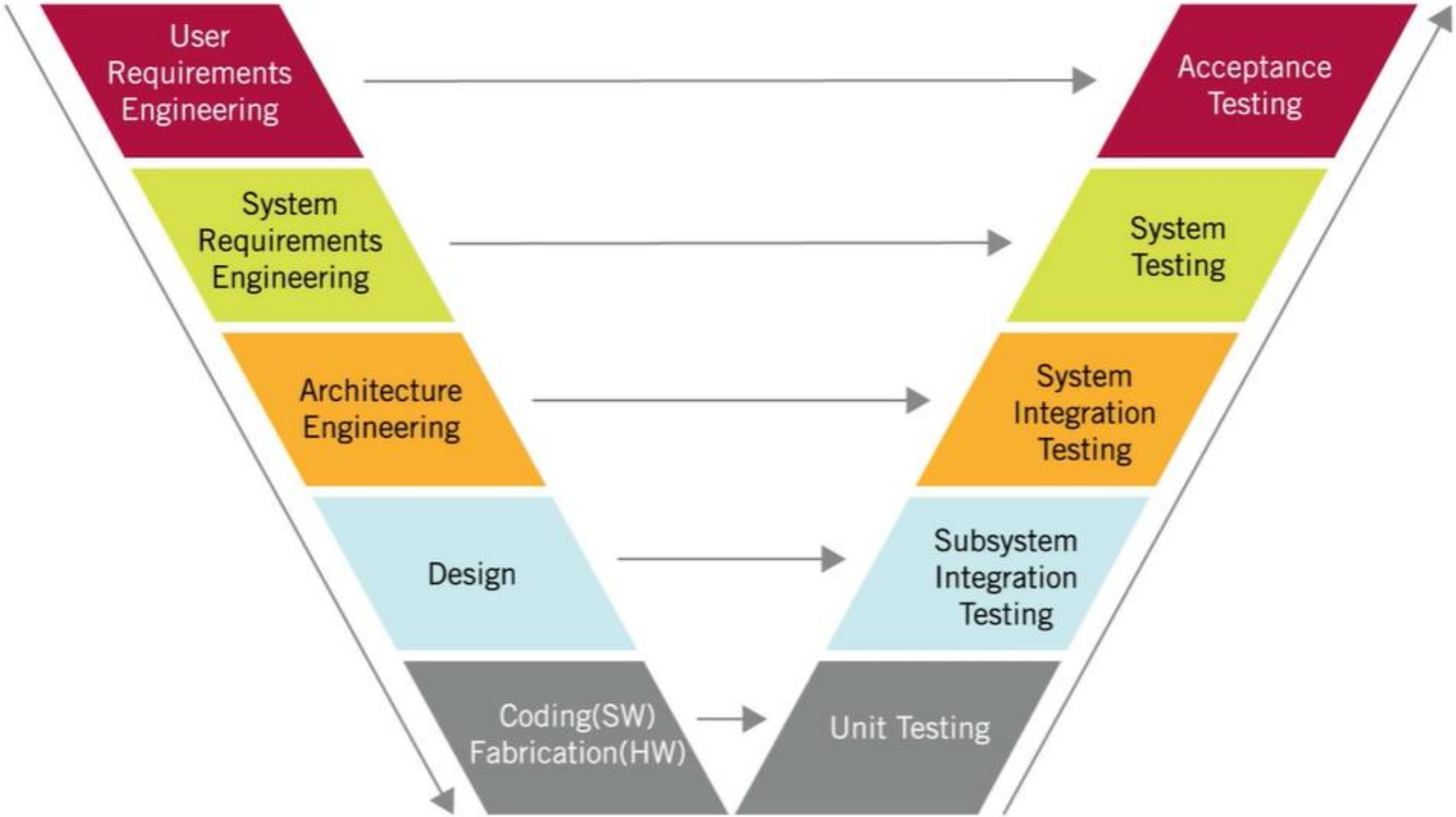
Graphql Query Example – Postman (6/6)



System Development Life Cycle – Old school

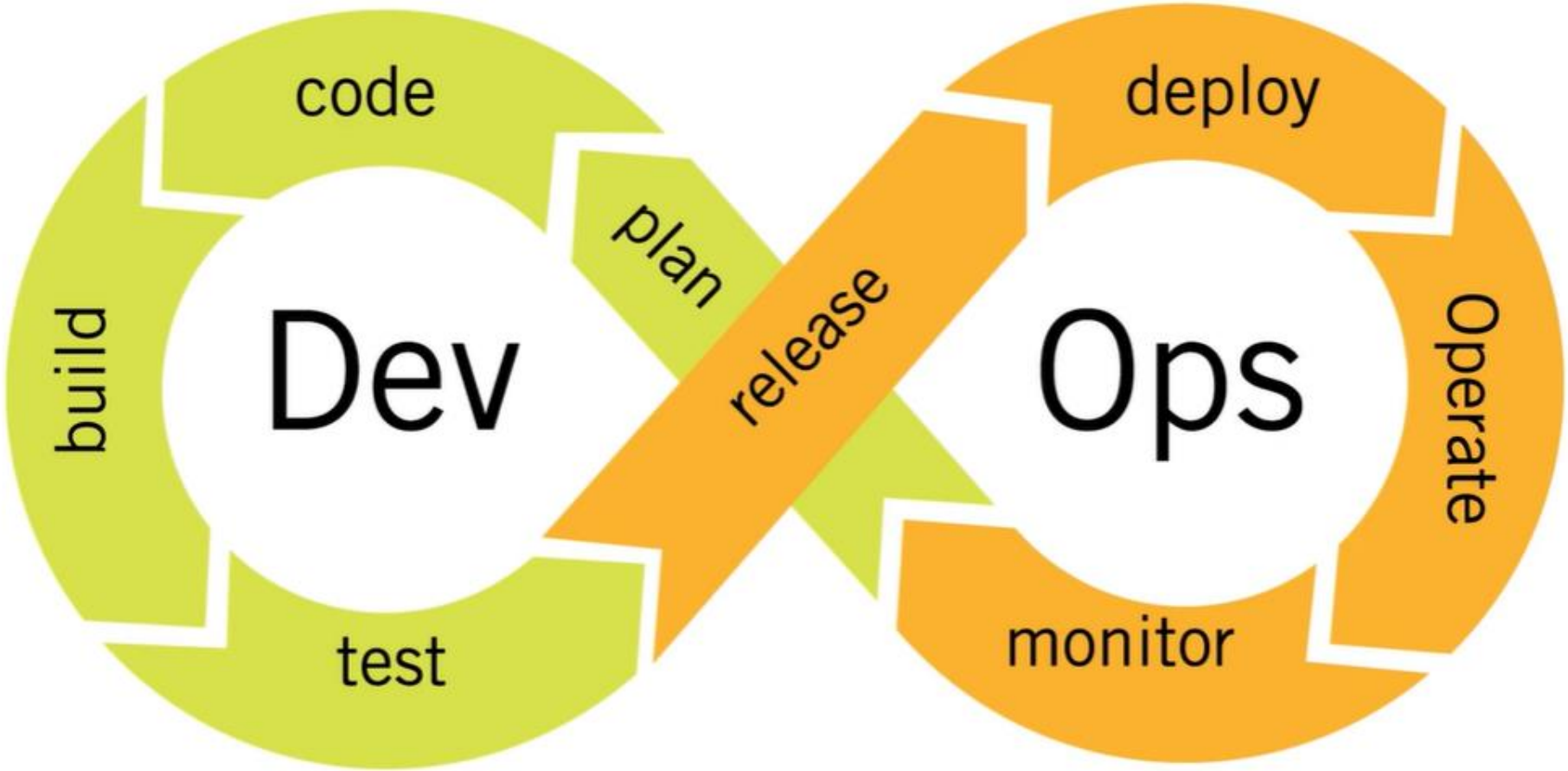


V Models For Testing – Old school



https://insights.sei.cmu.edu/sei_blog/2013/11/using-v-models-for-testing.html

Central To Software Creation



Market Terminologies

Testing → QA → QE

Intelligent Testing

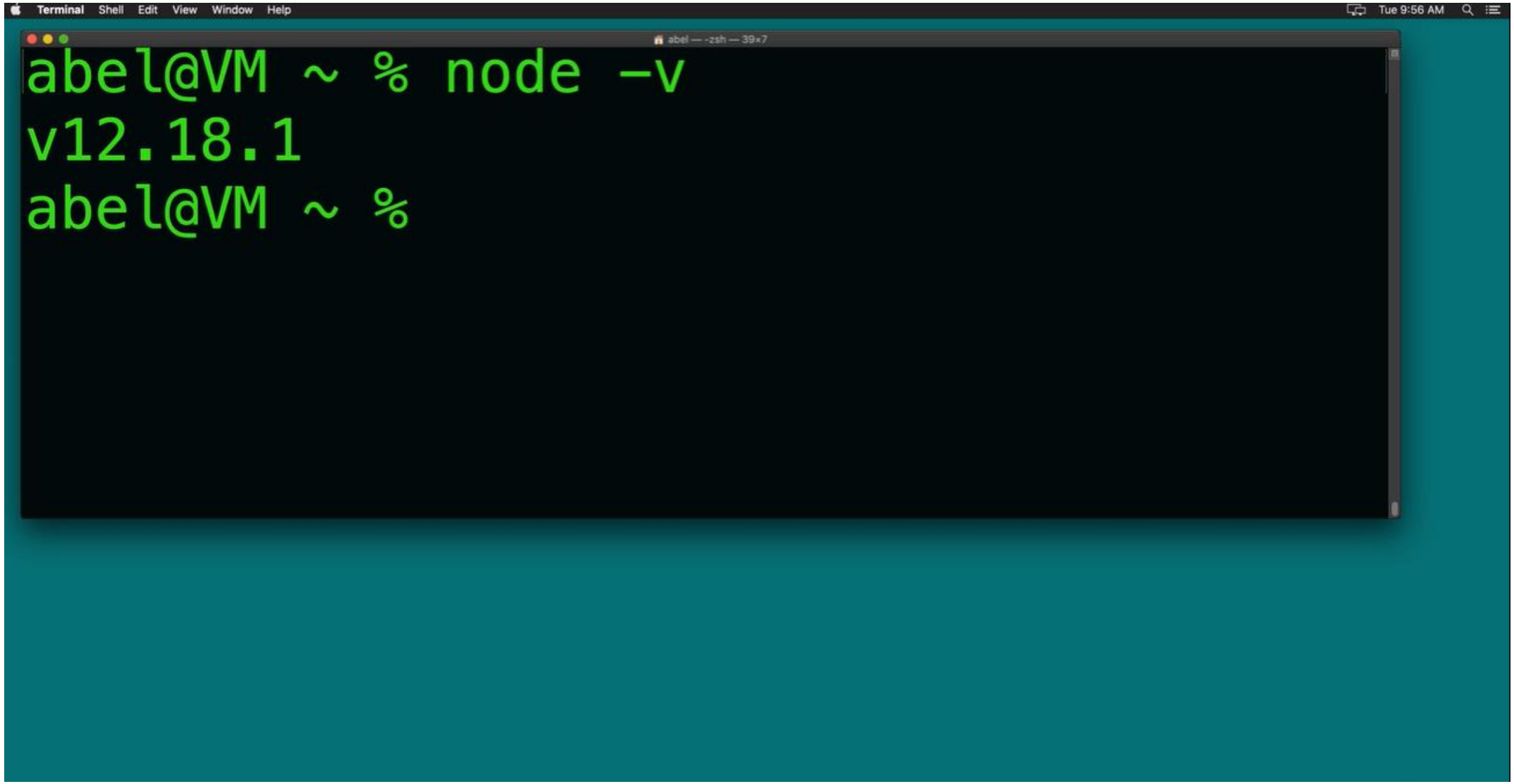
Start with the basics

Jest

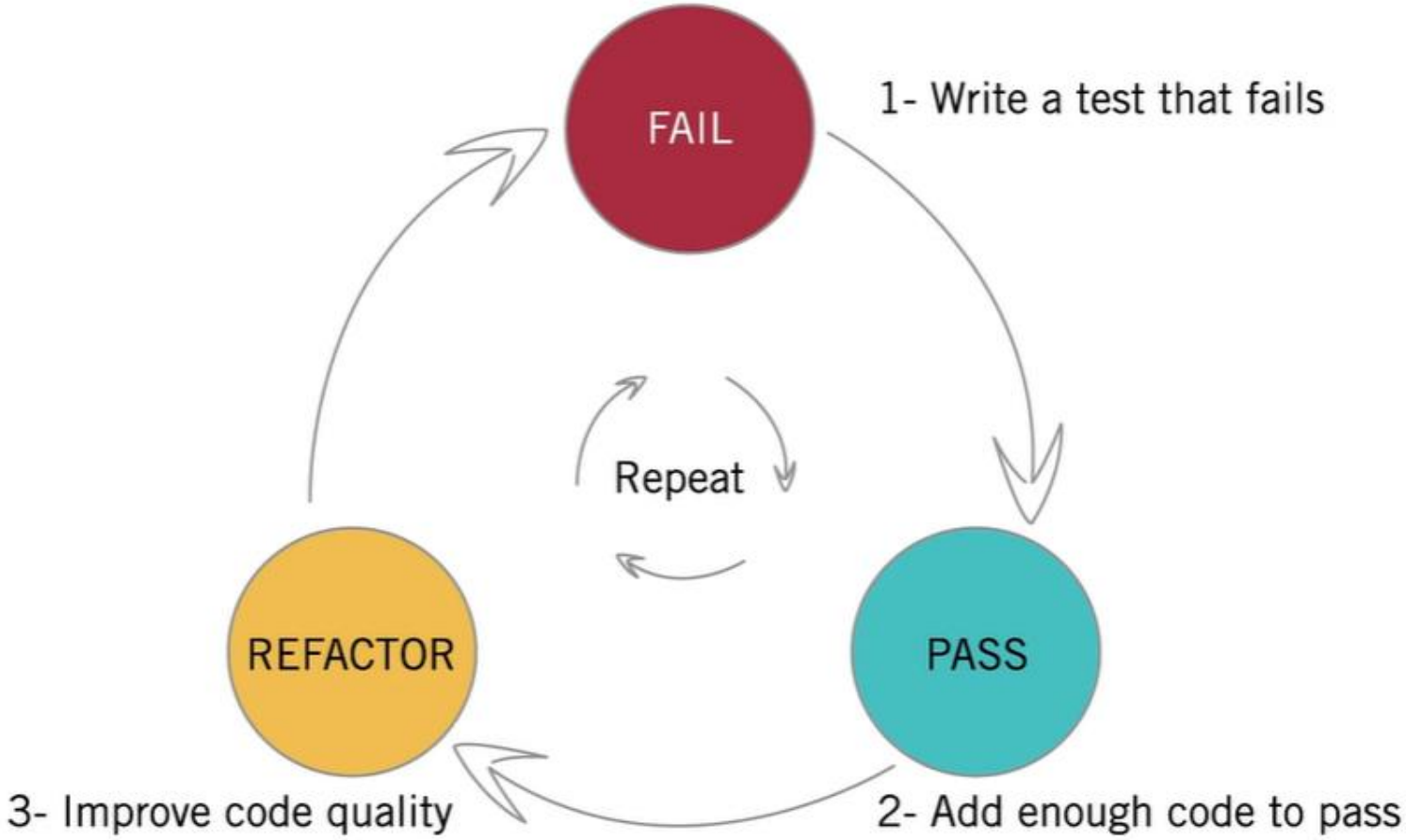
https://jestjs.io/

Node.js

Examining Node.js Version



Test-Driven Development (TDD)

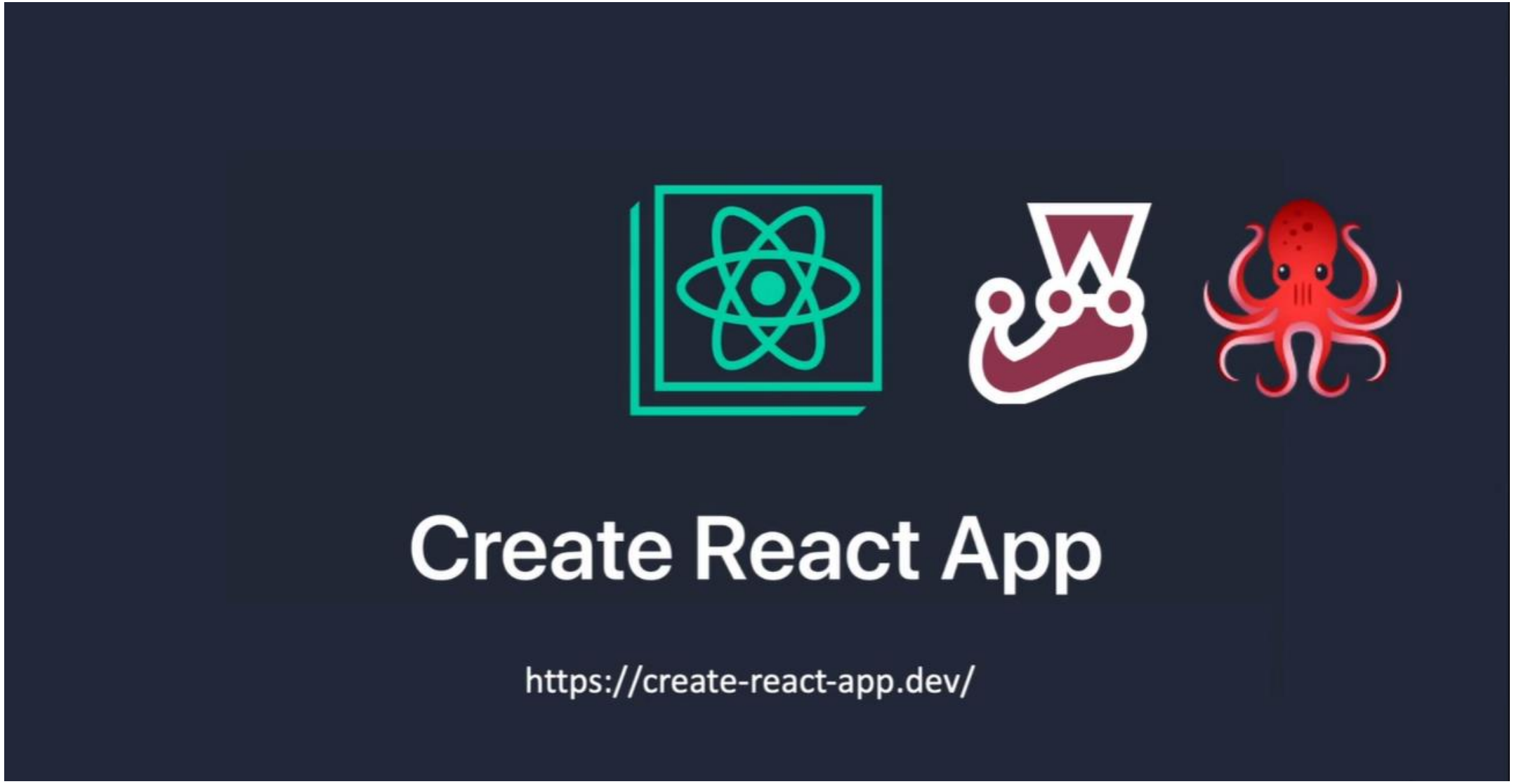


TDD Workflow

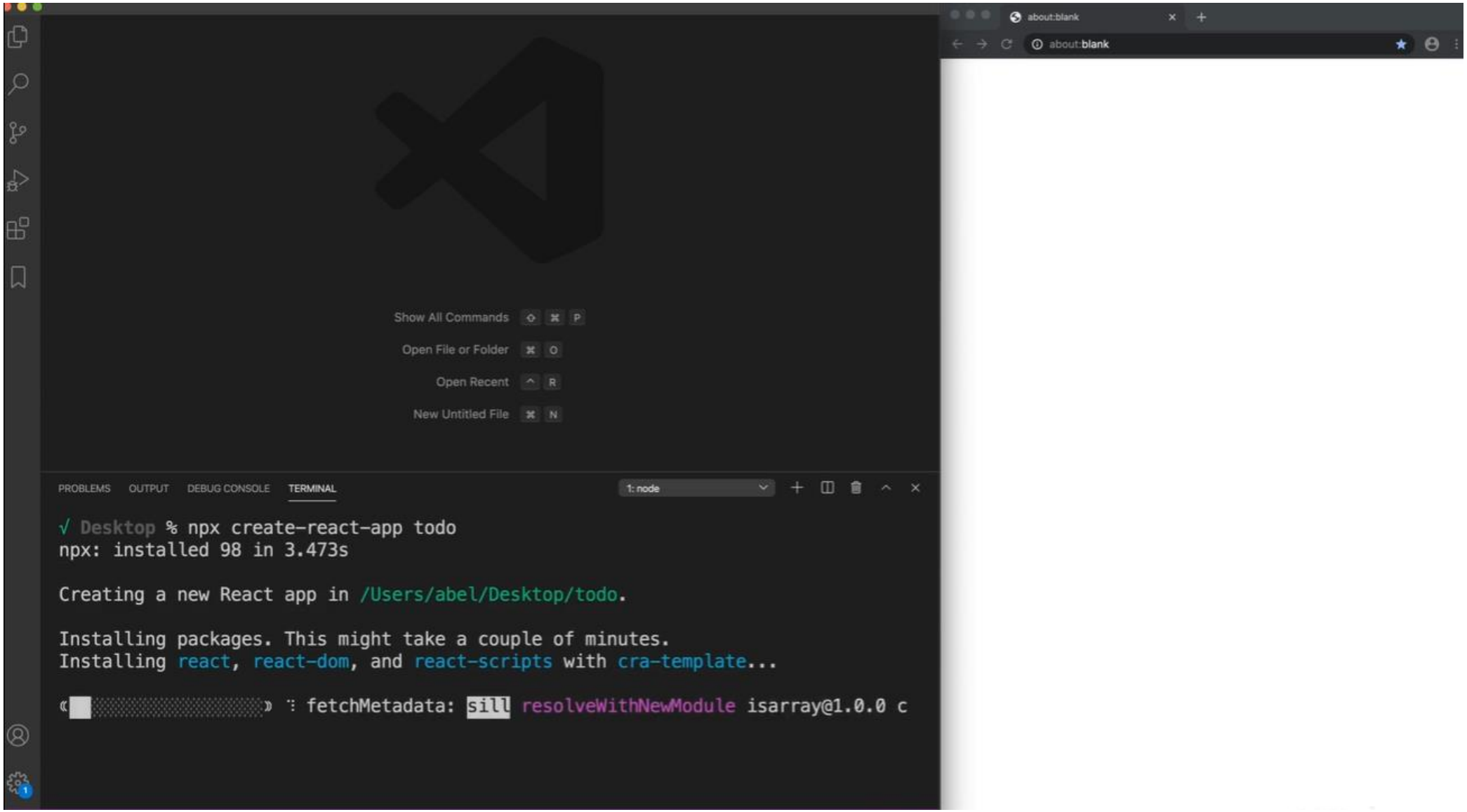
- Write a test for a desired software feature
- Watch it fail 
- Write the code
- Watch it fail 
- Fix
- Watch it pass 
- Feel good
- Add, commit, push

React Application (1/2)

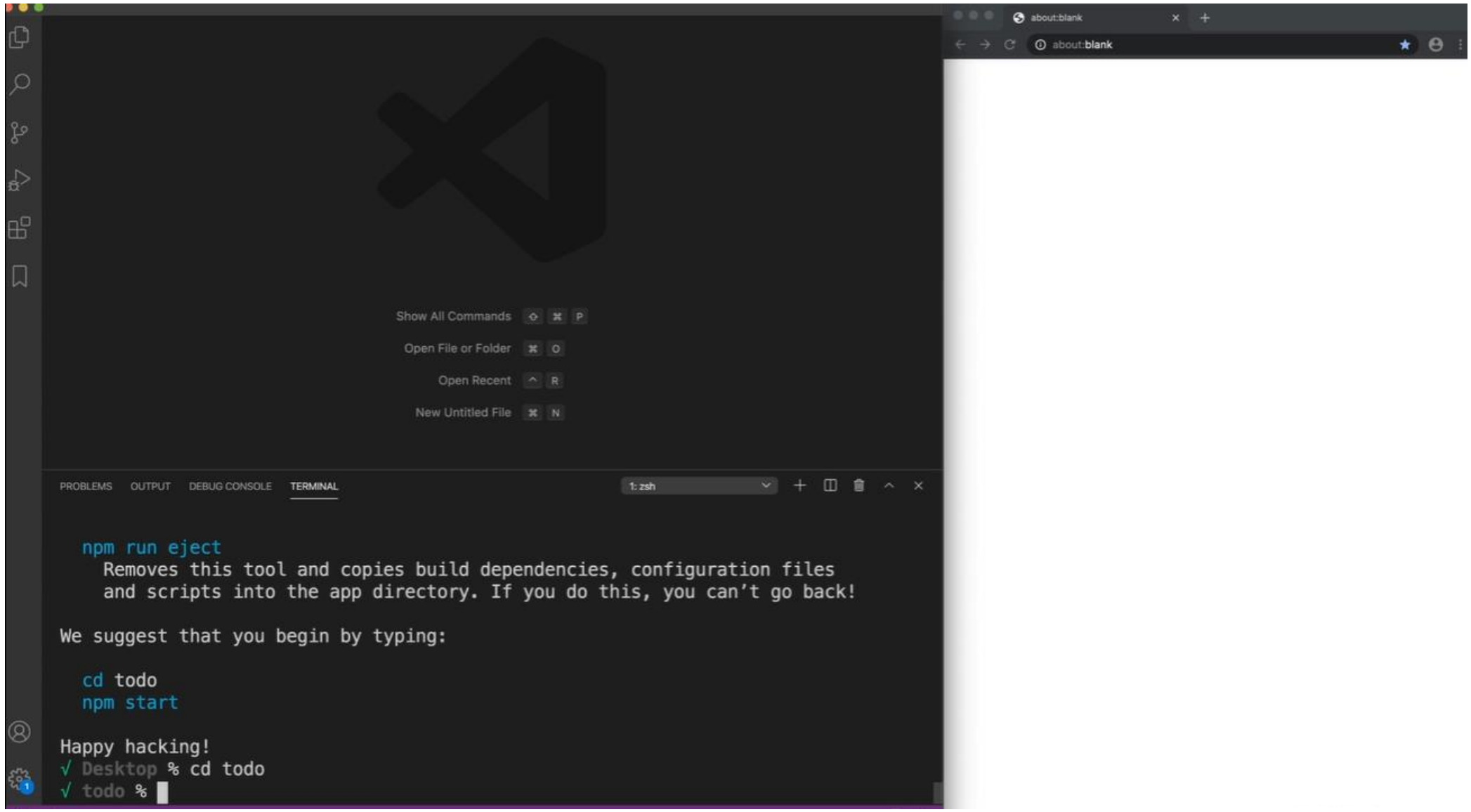
React Application (2/2)



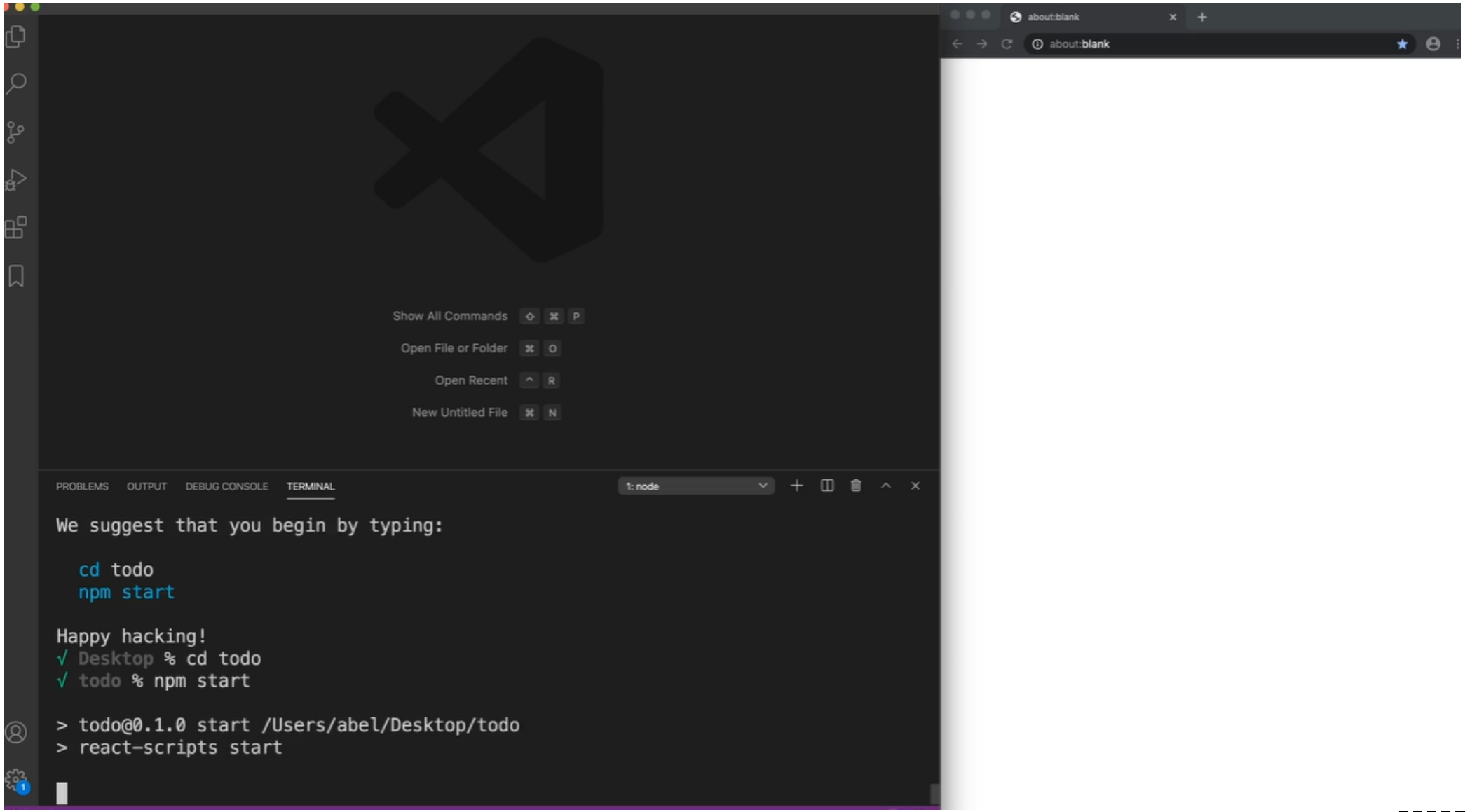
Testing A Simple DOM Application (1/25)



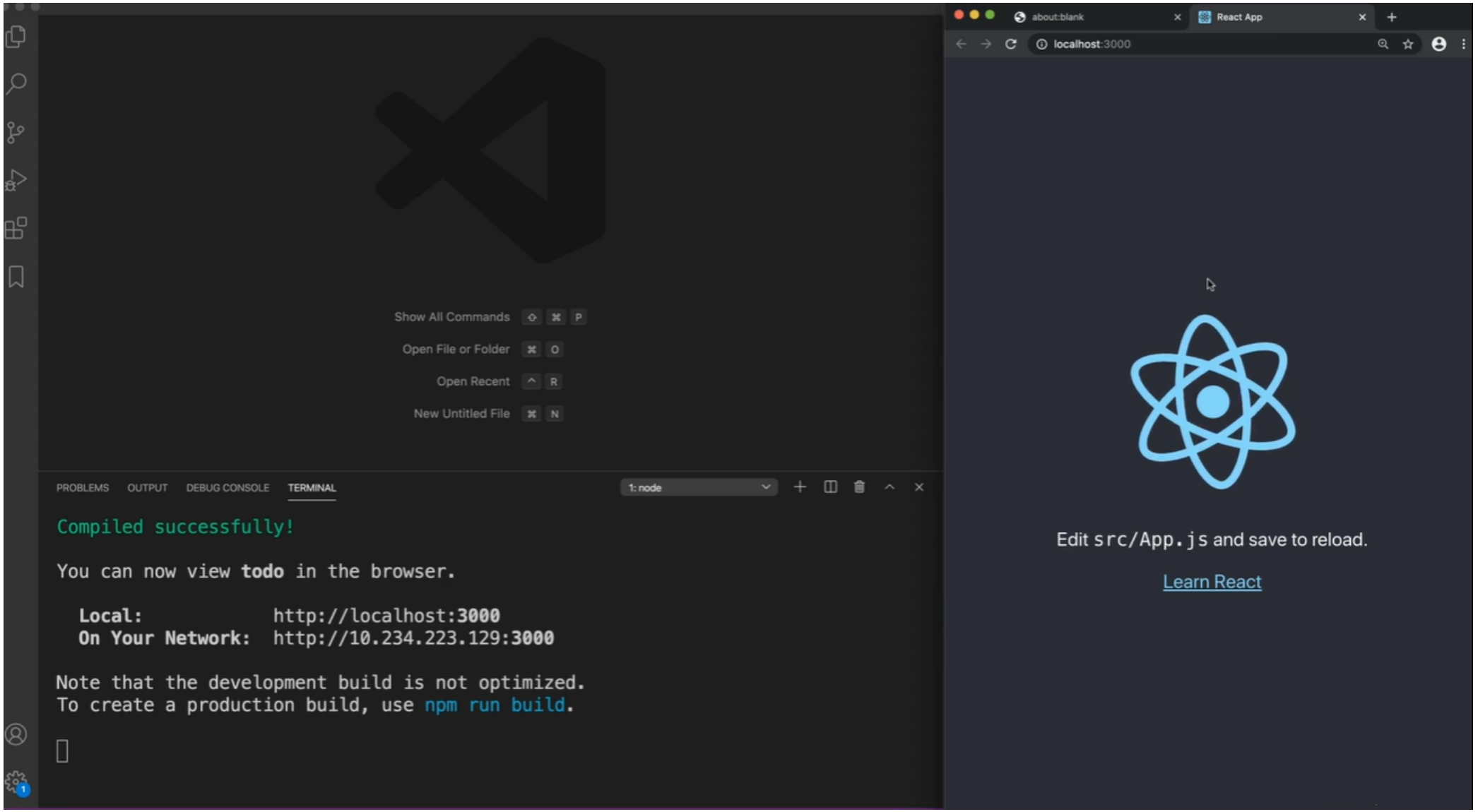
Testing A Simple DOM Application (2/25)



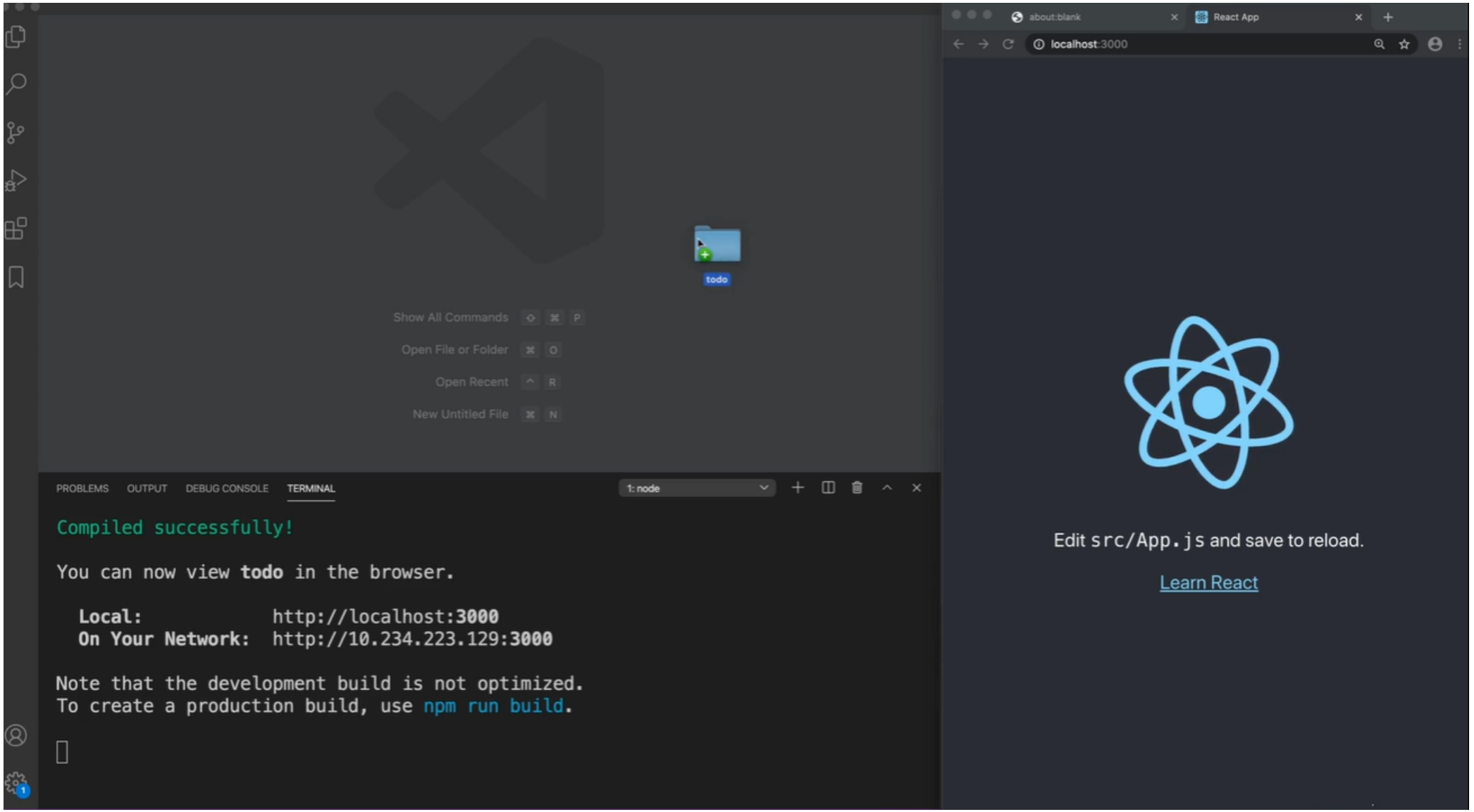
Testing A Simple DOM Application (3/25)



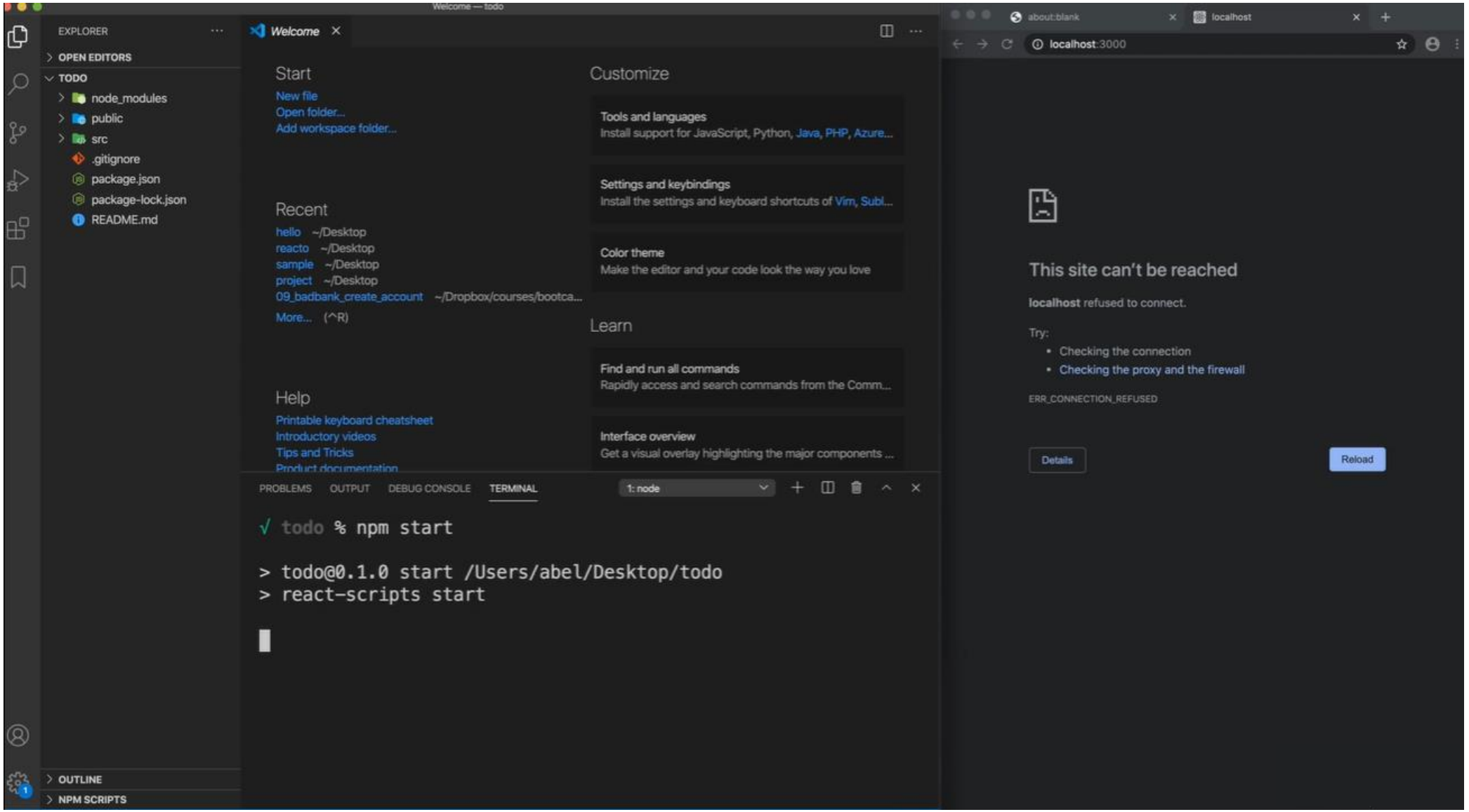
Testing A Simple DOM Application (4/25)



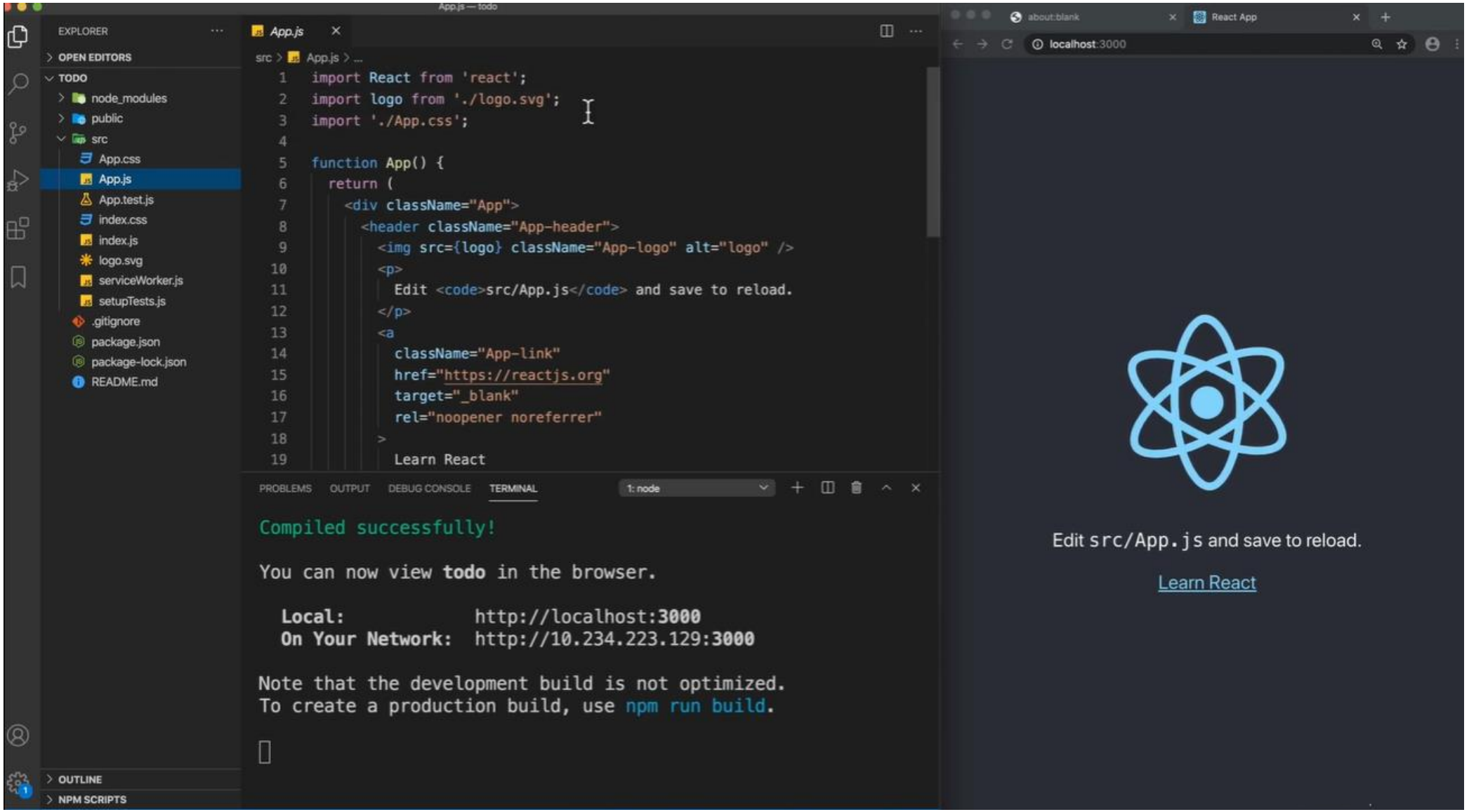
Testing A Simple DOM Application (5/25)



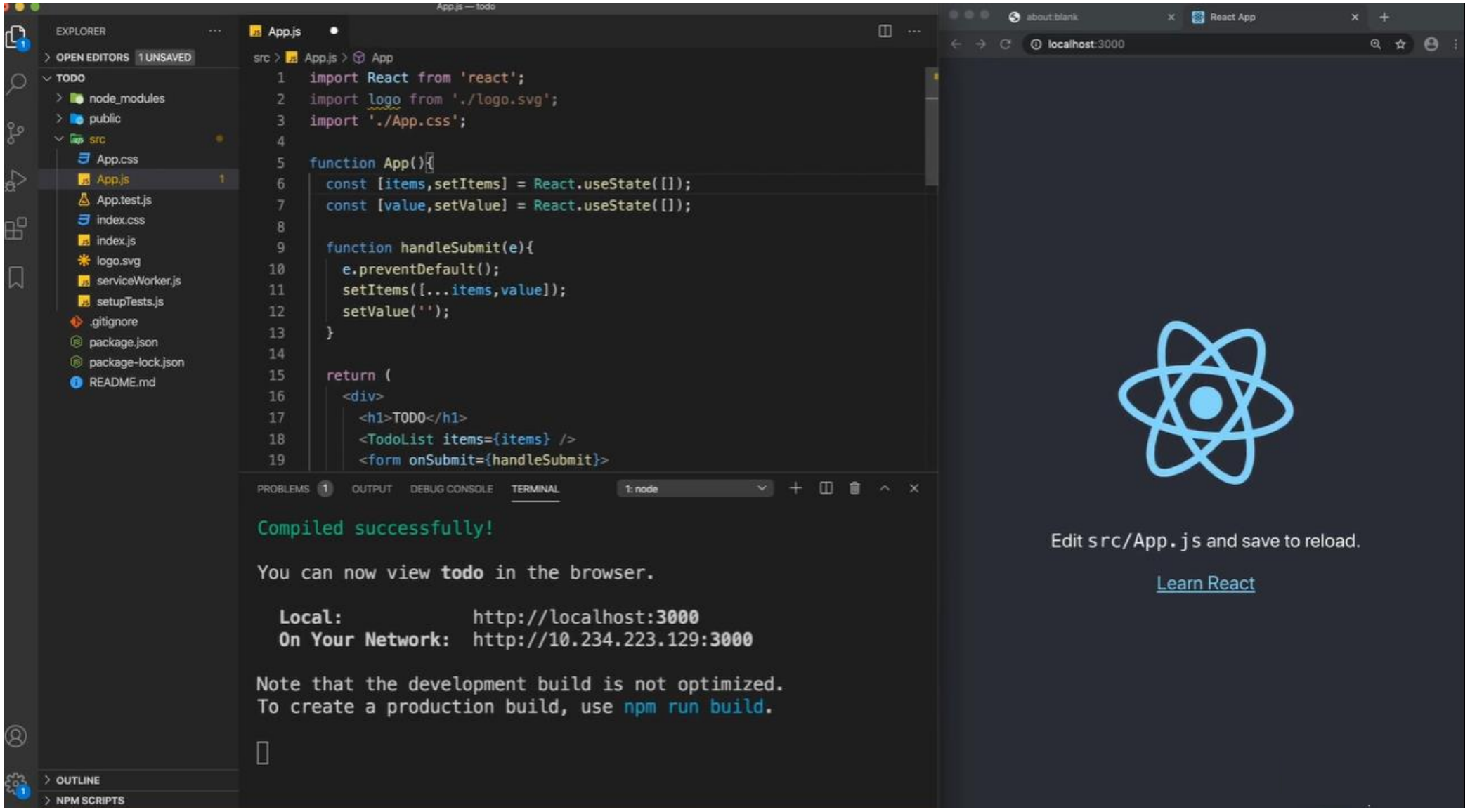
Testing A Simple DOM Application (6/25)



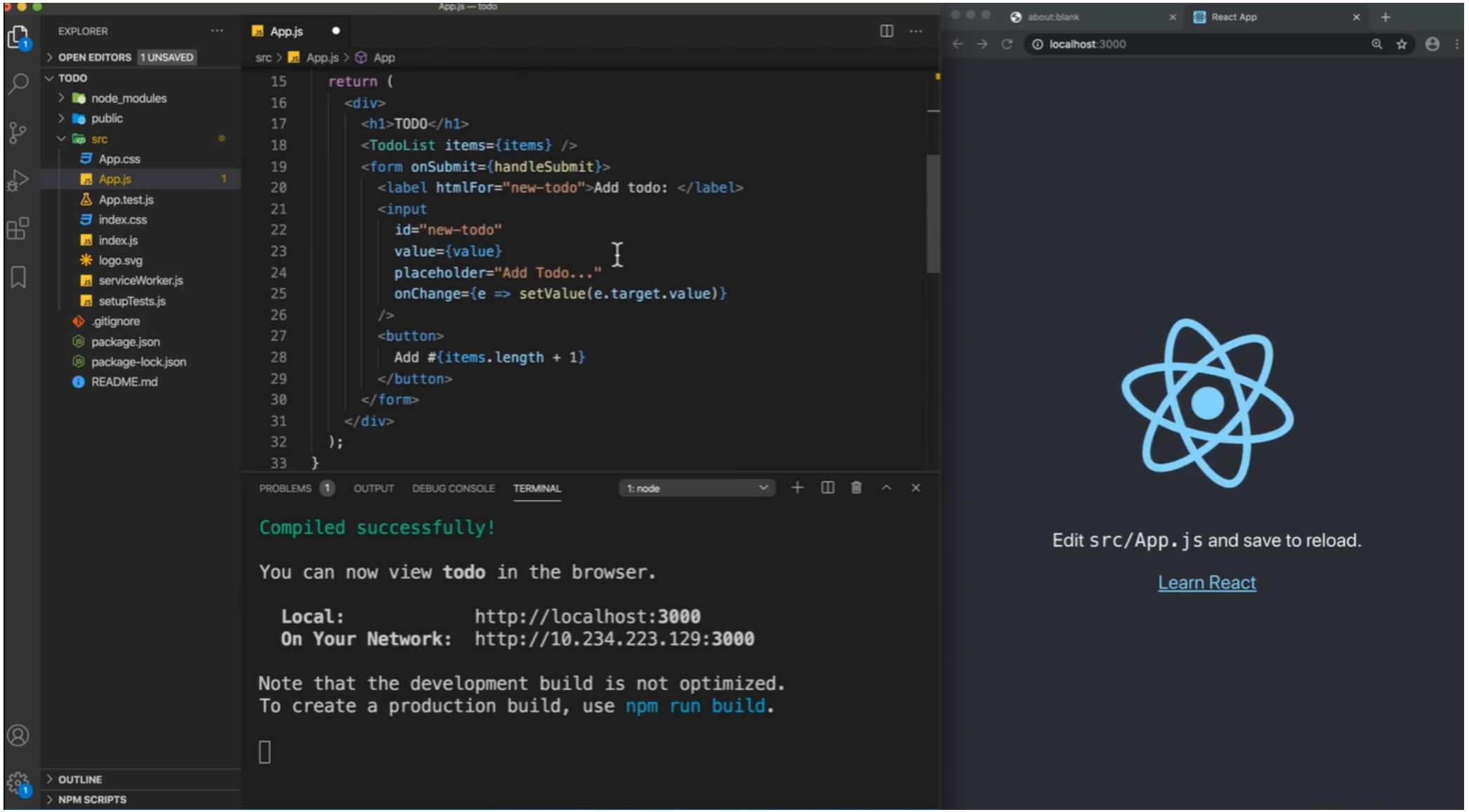
Testing A Simple DOM Application (7/25)



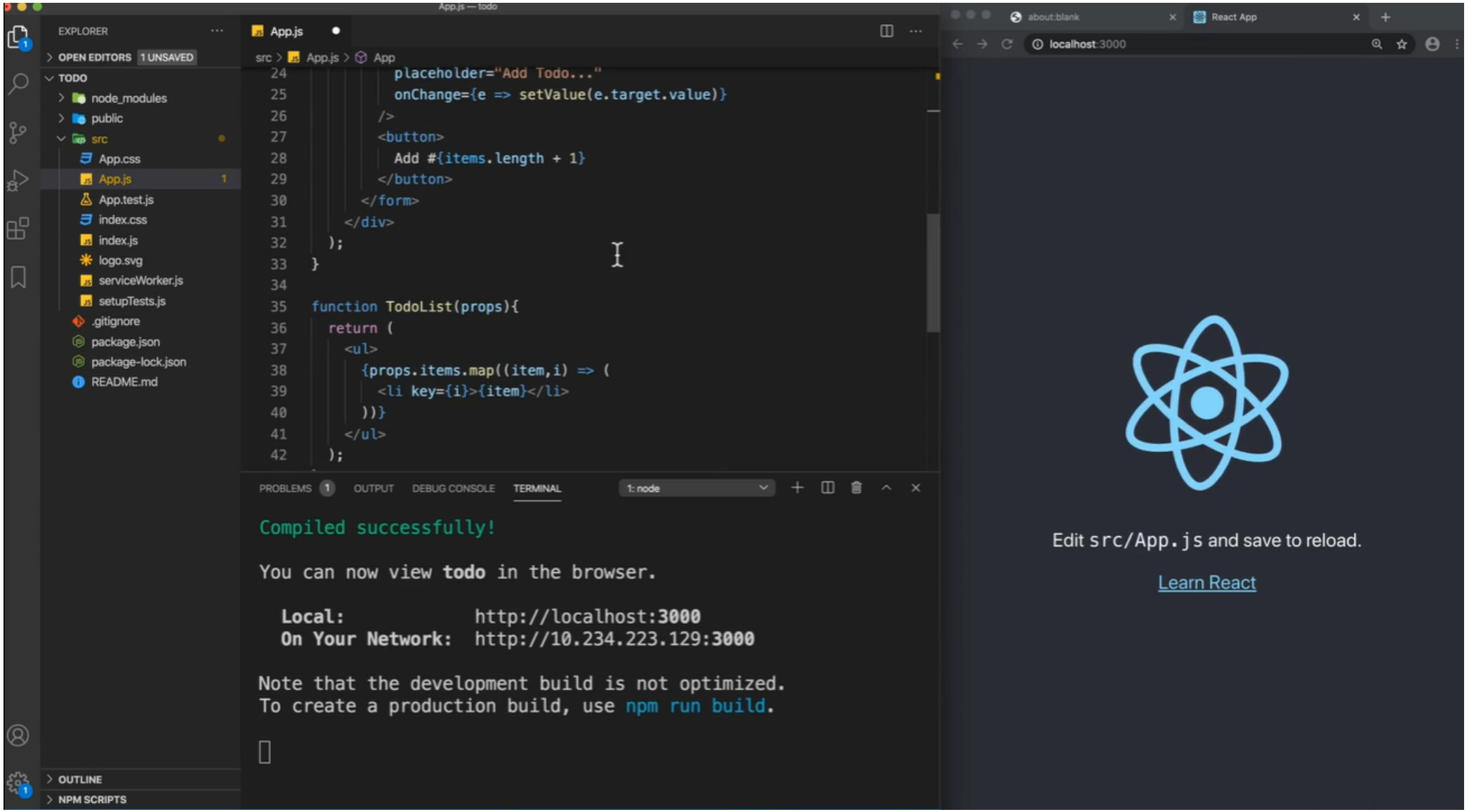
Testing A Simple DOM Application (8/25)



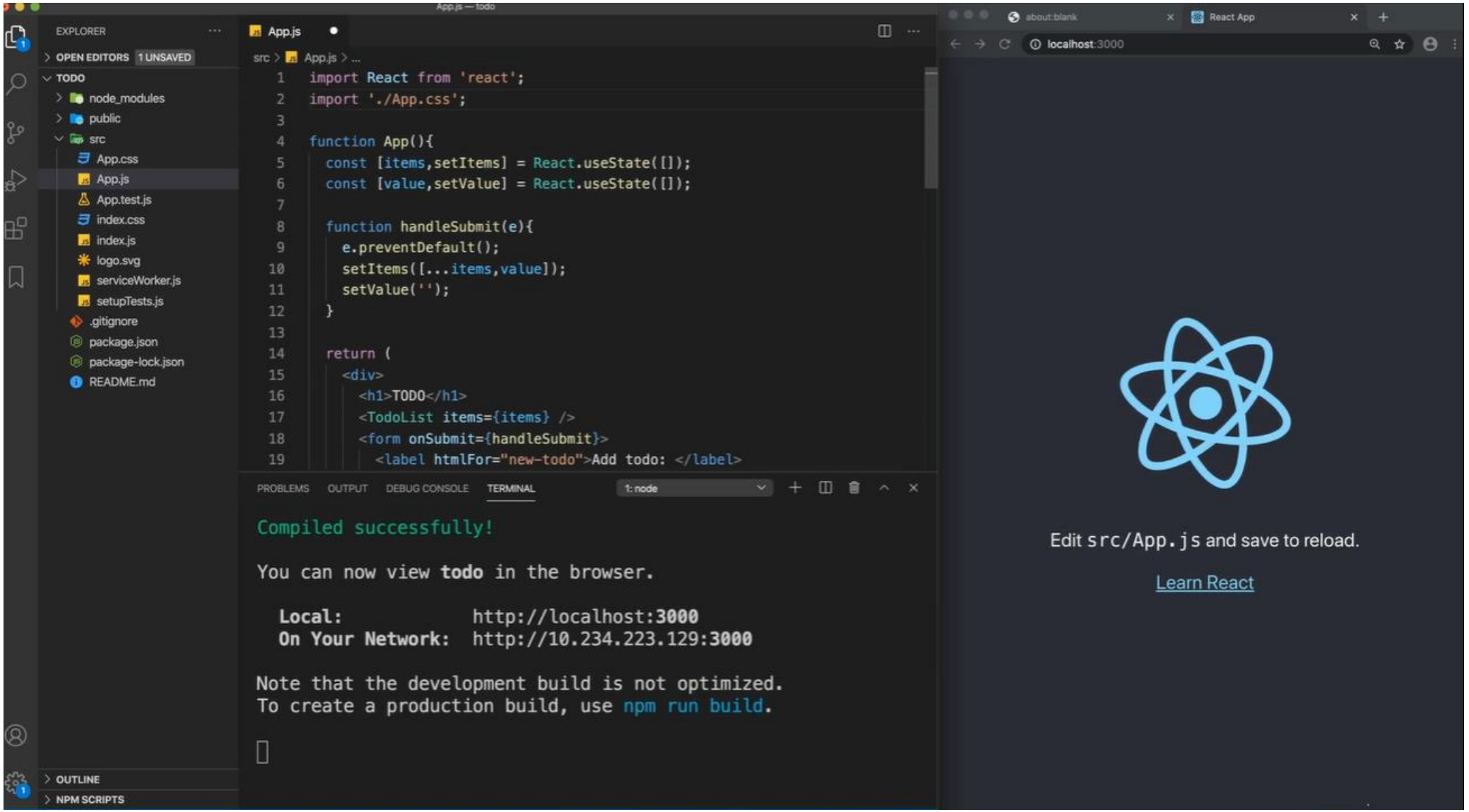
Testing A Simple DOM Application (9/25)



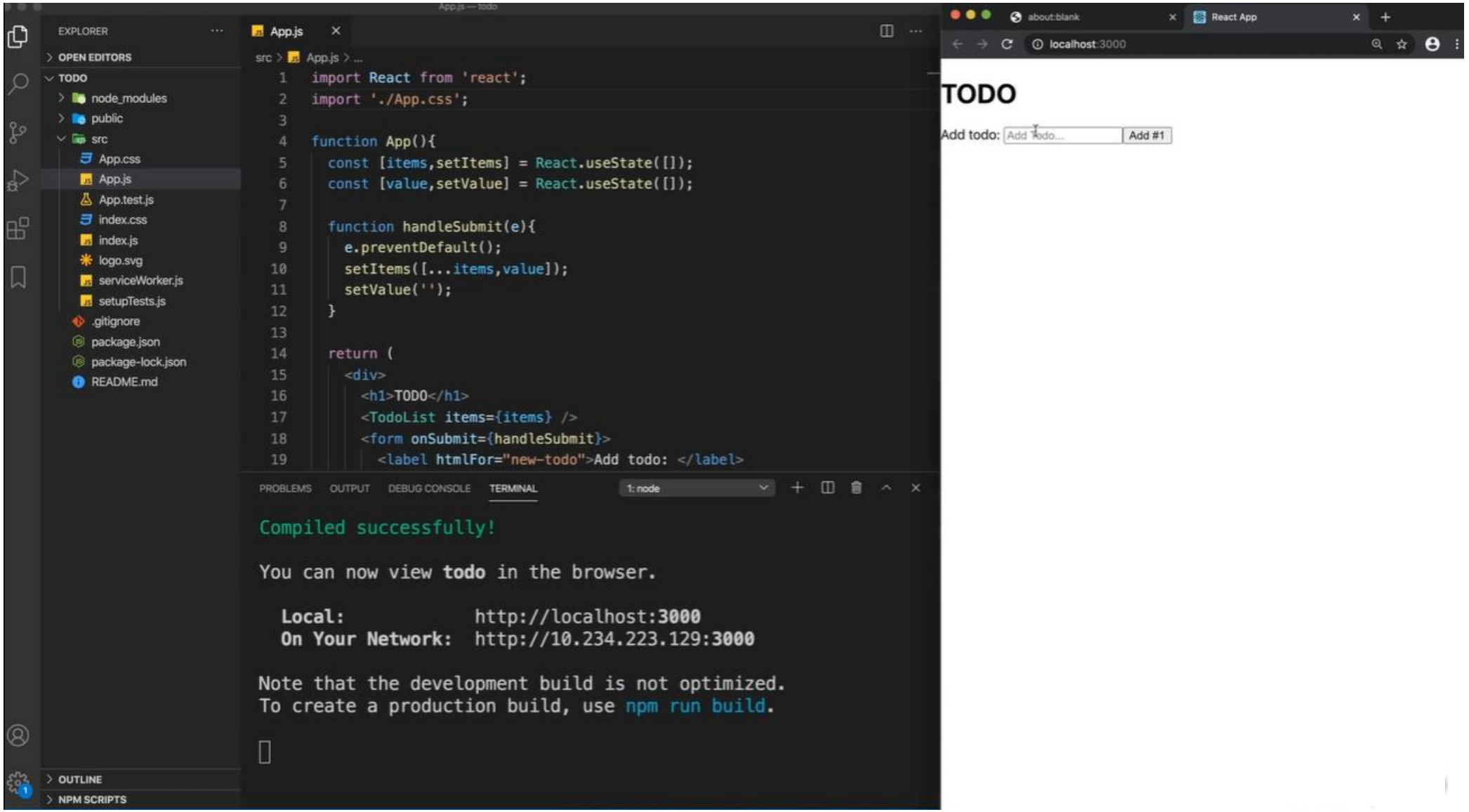
Testing A Simple DOM Application (10/25)



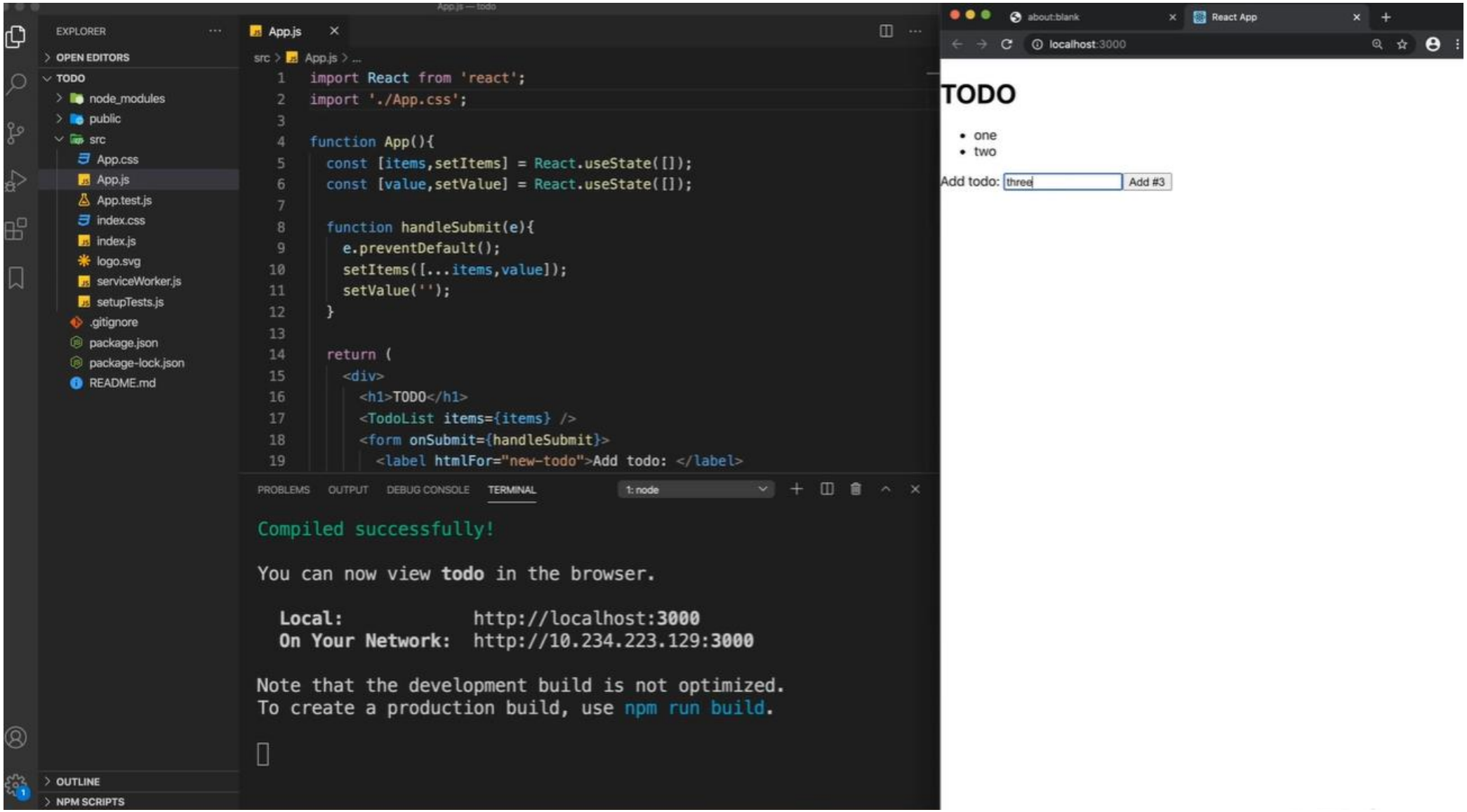
Testing A Simple DOM Application (11/25)



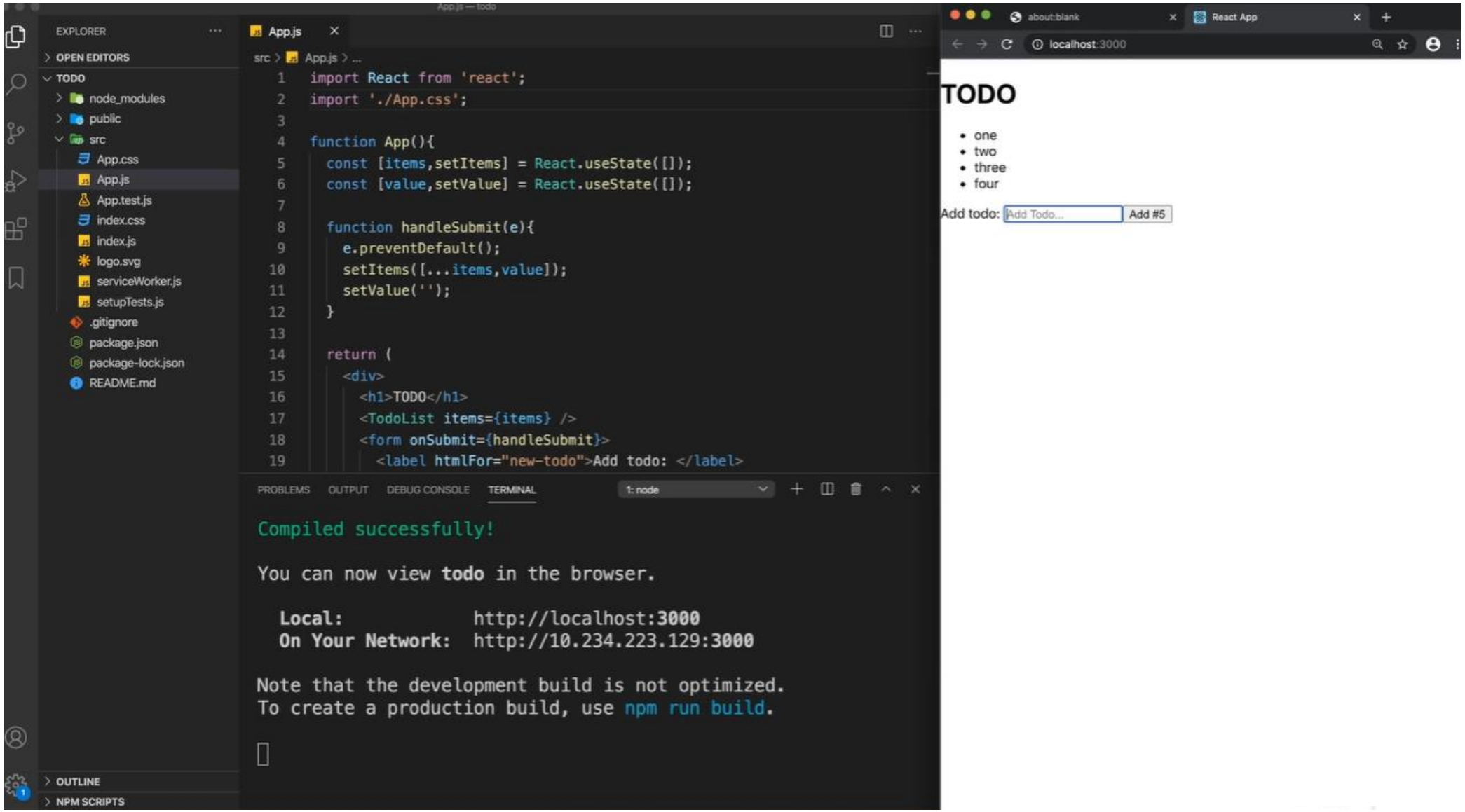
Testing A Simple DOM Application (12/25)



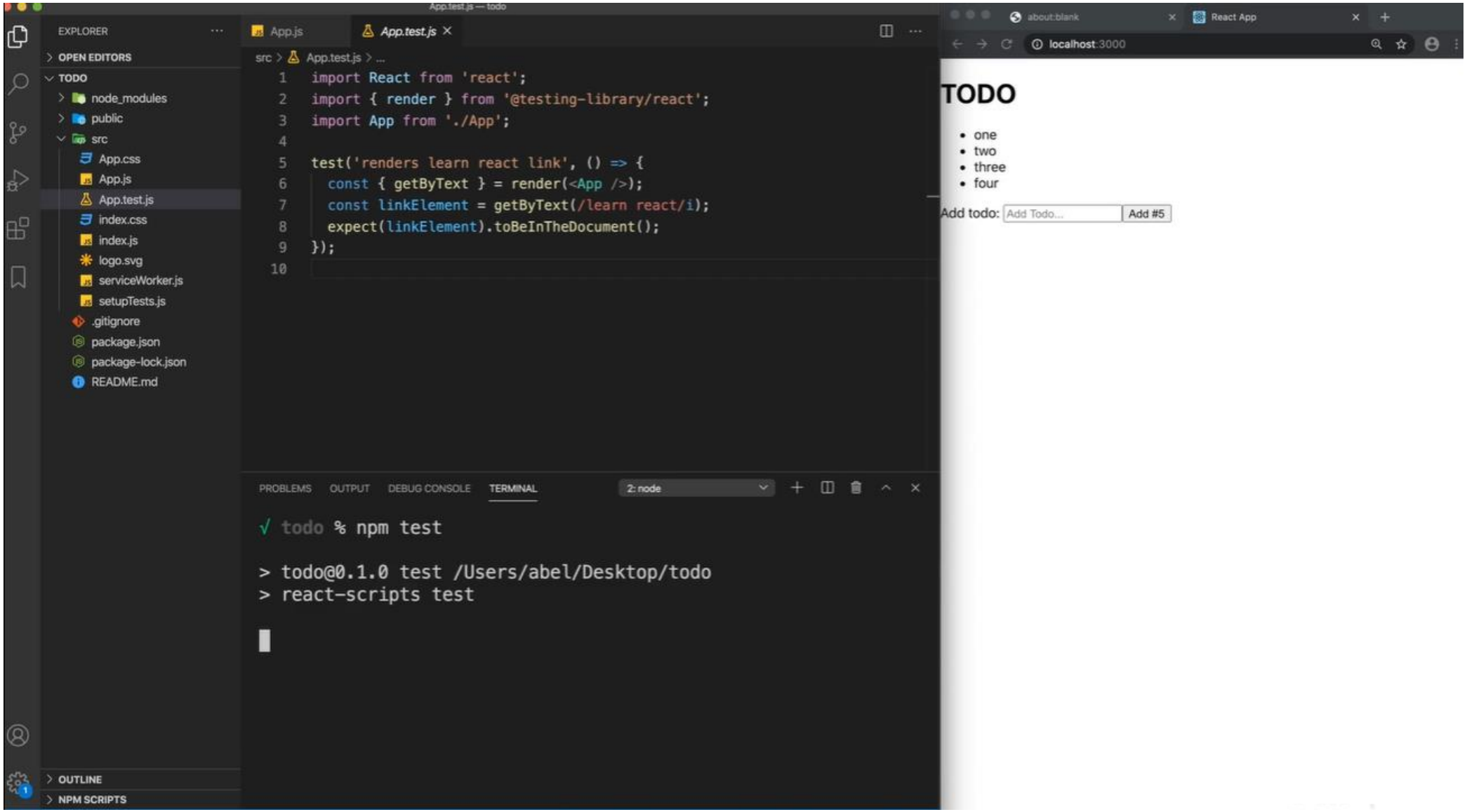
Testing A Simple DOM Application (13/25)



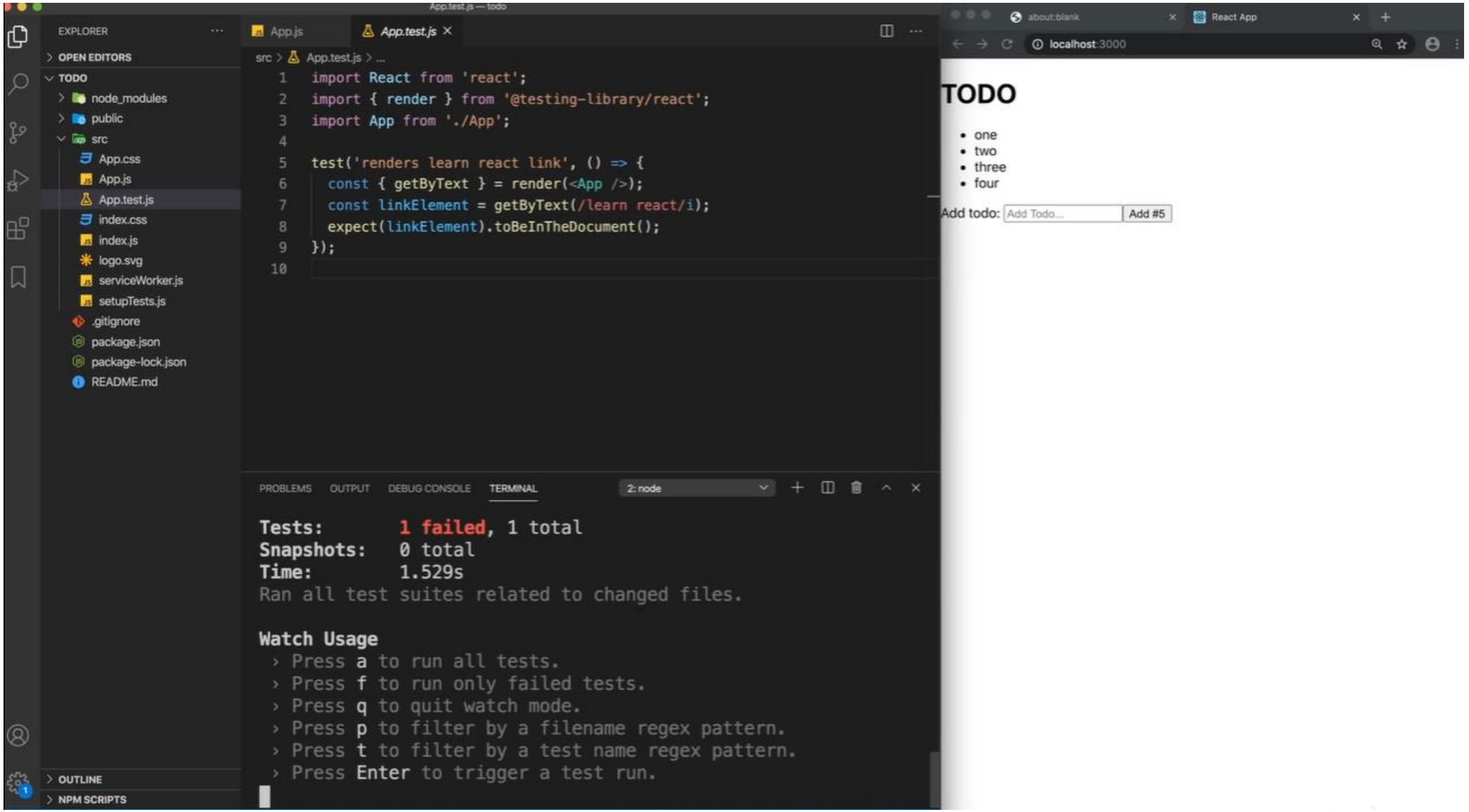
Testing A Simple DOM Application (14/25)



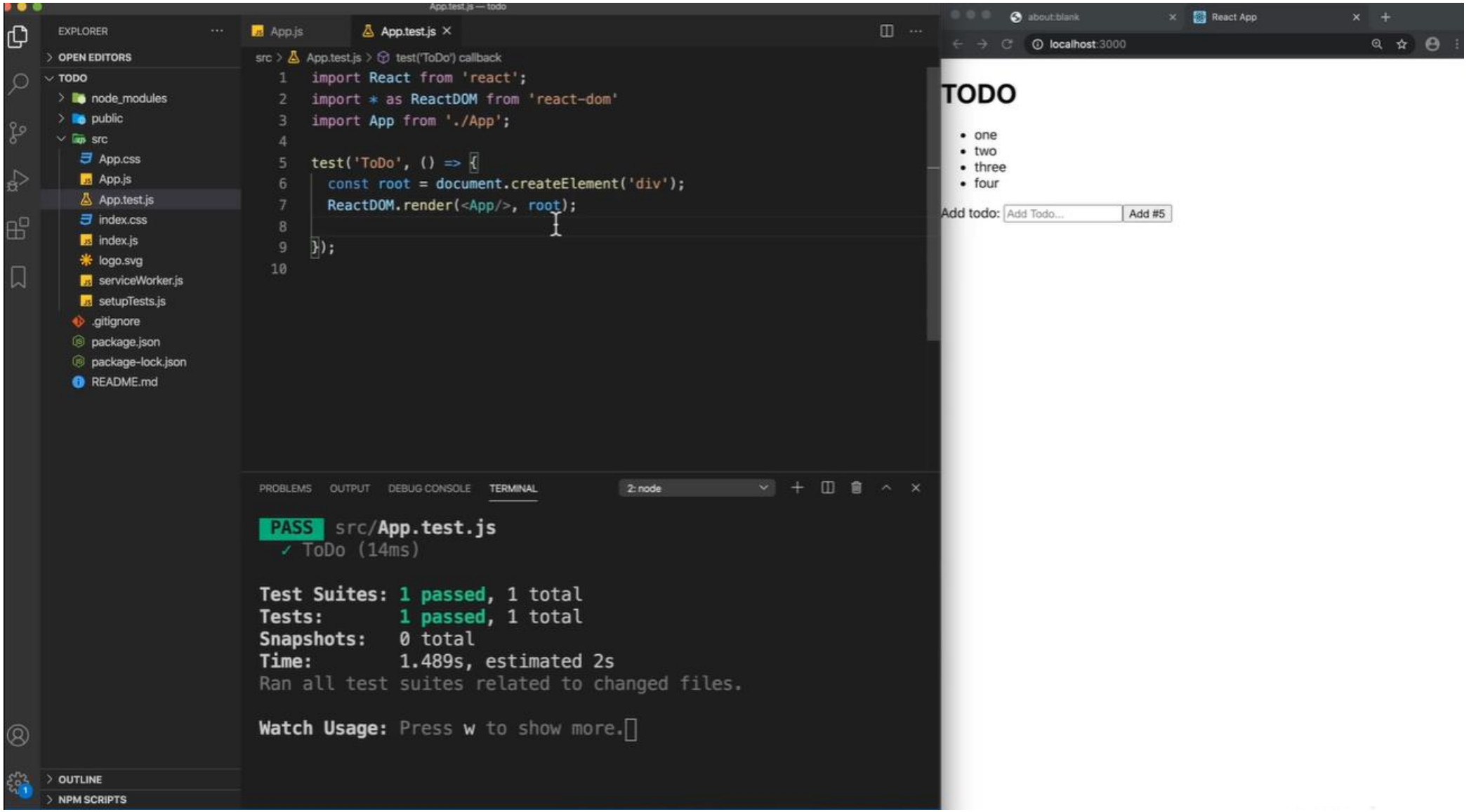
Testing A Simple DOM Application (15/25)



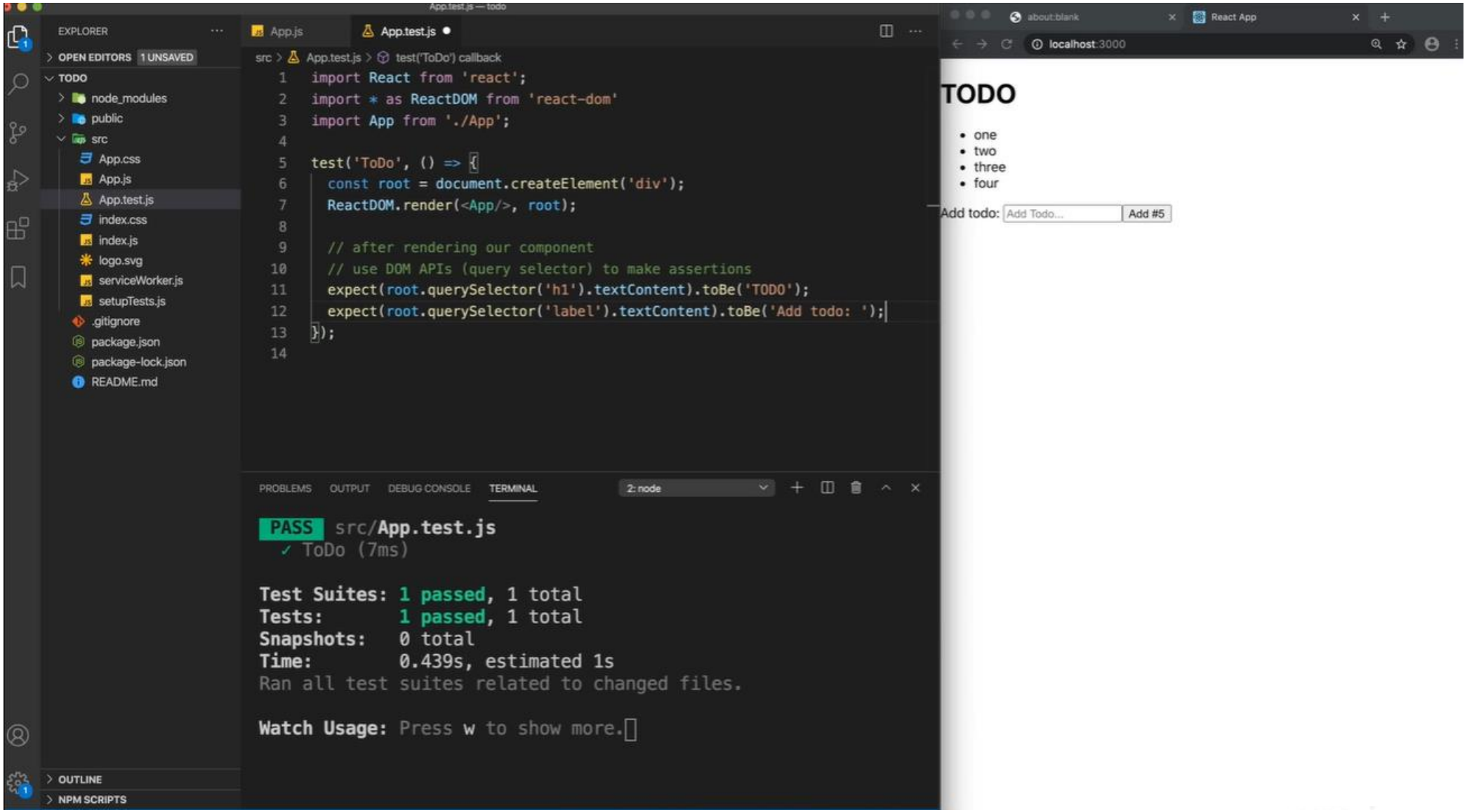
Testing A Simple DOM Application (16/25)



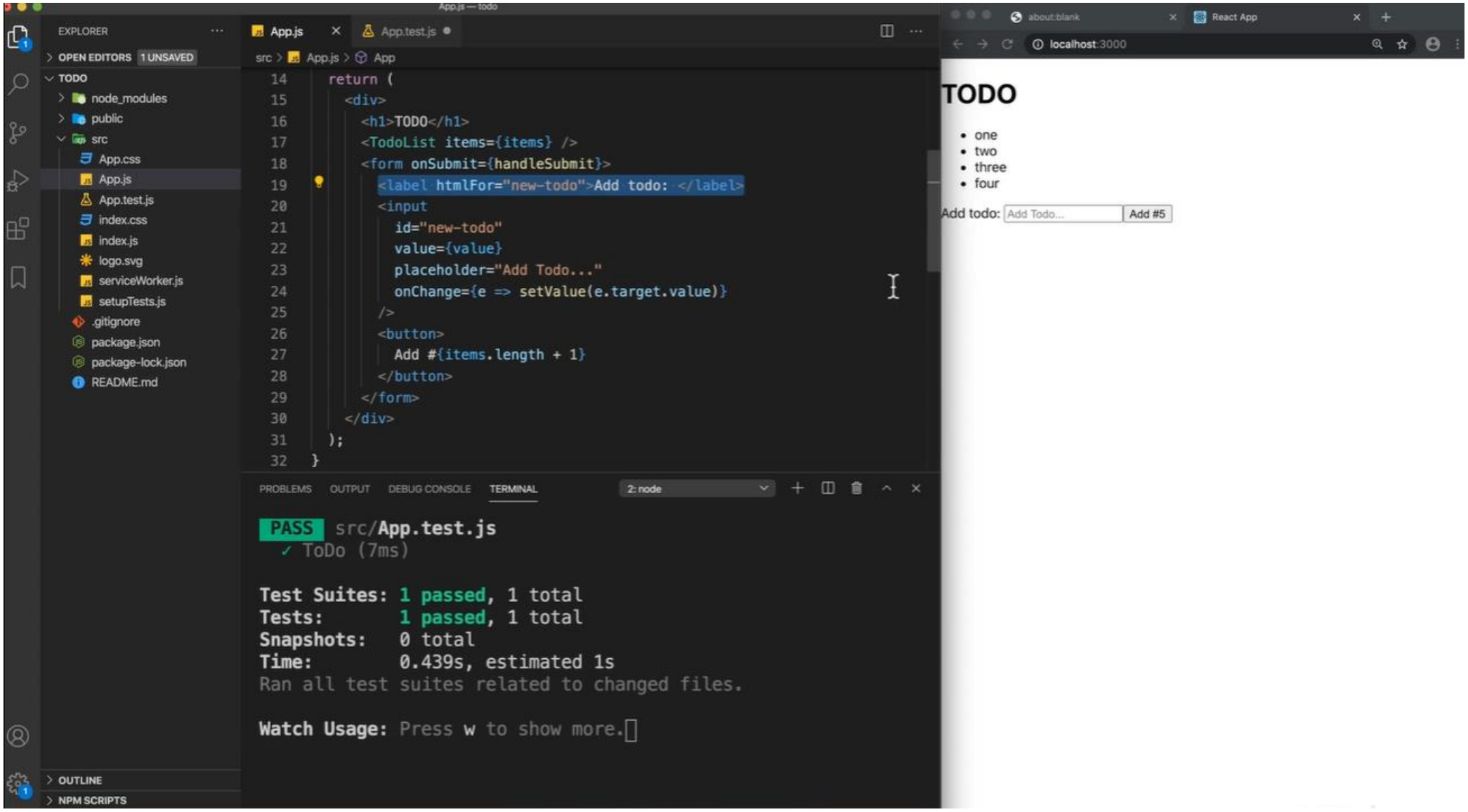
Testing A Simple DOM Application (17/25)



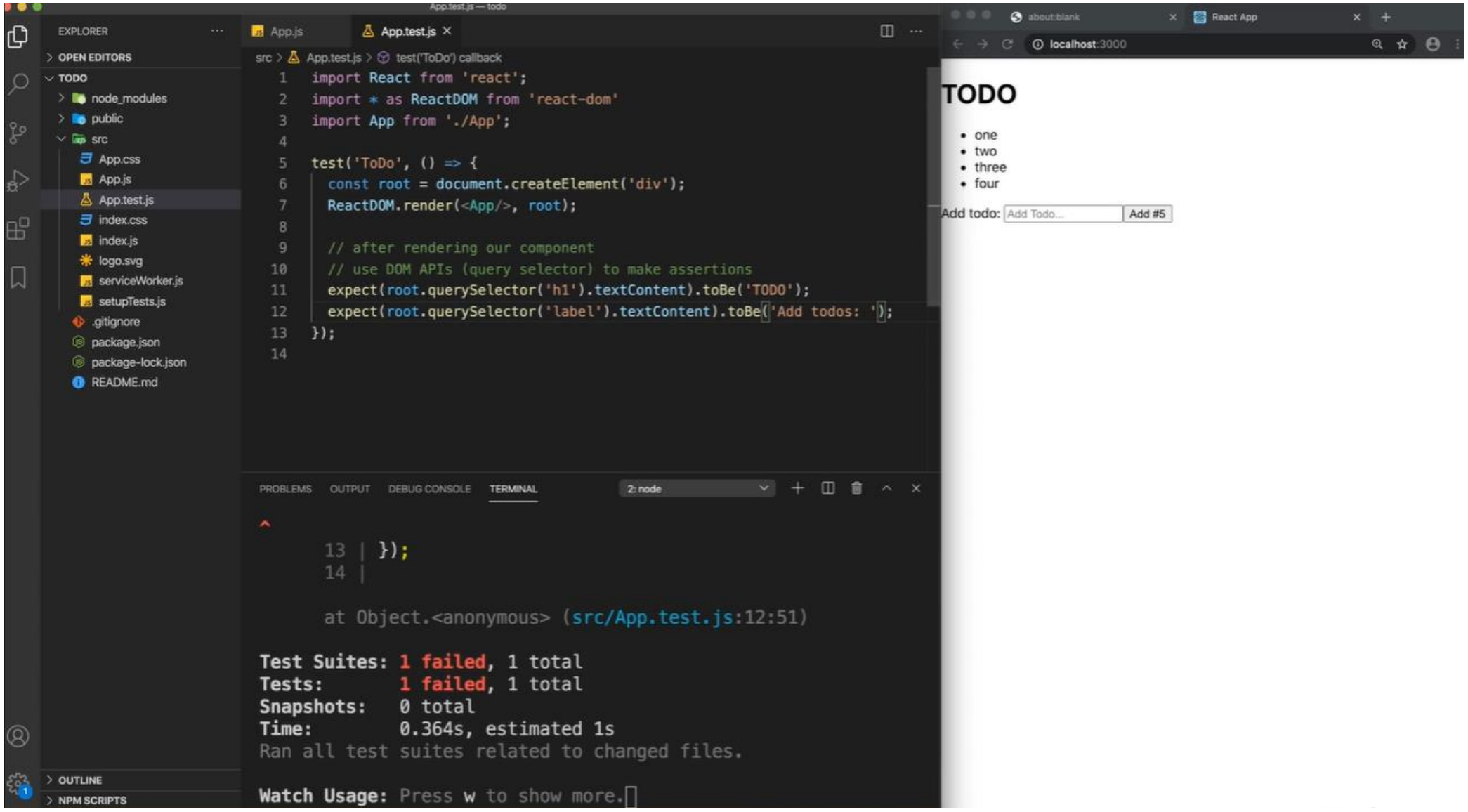
Testing A Simple DOM Application (18/25)



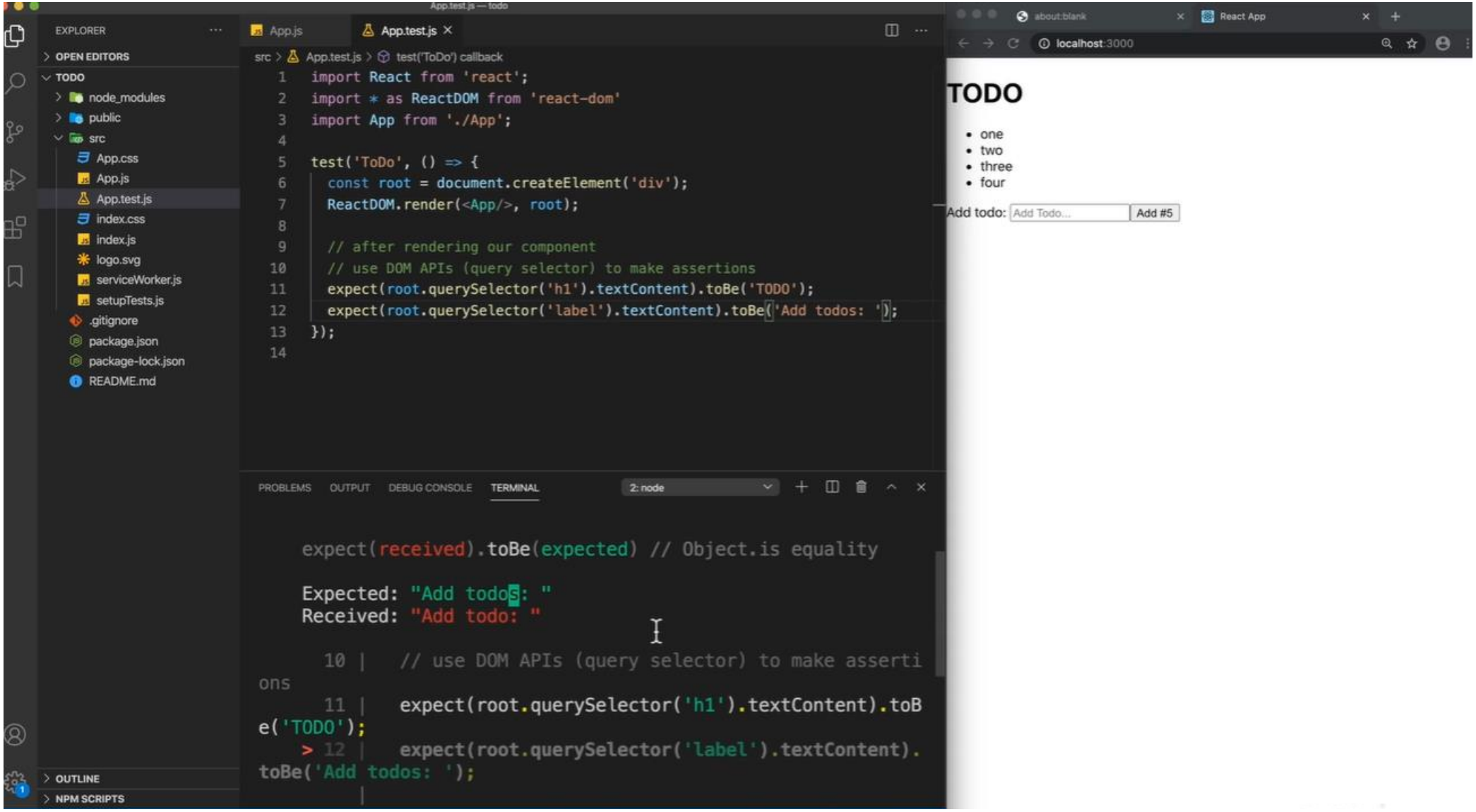
Testing A Simple DOM Application (19/25)



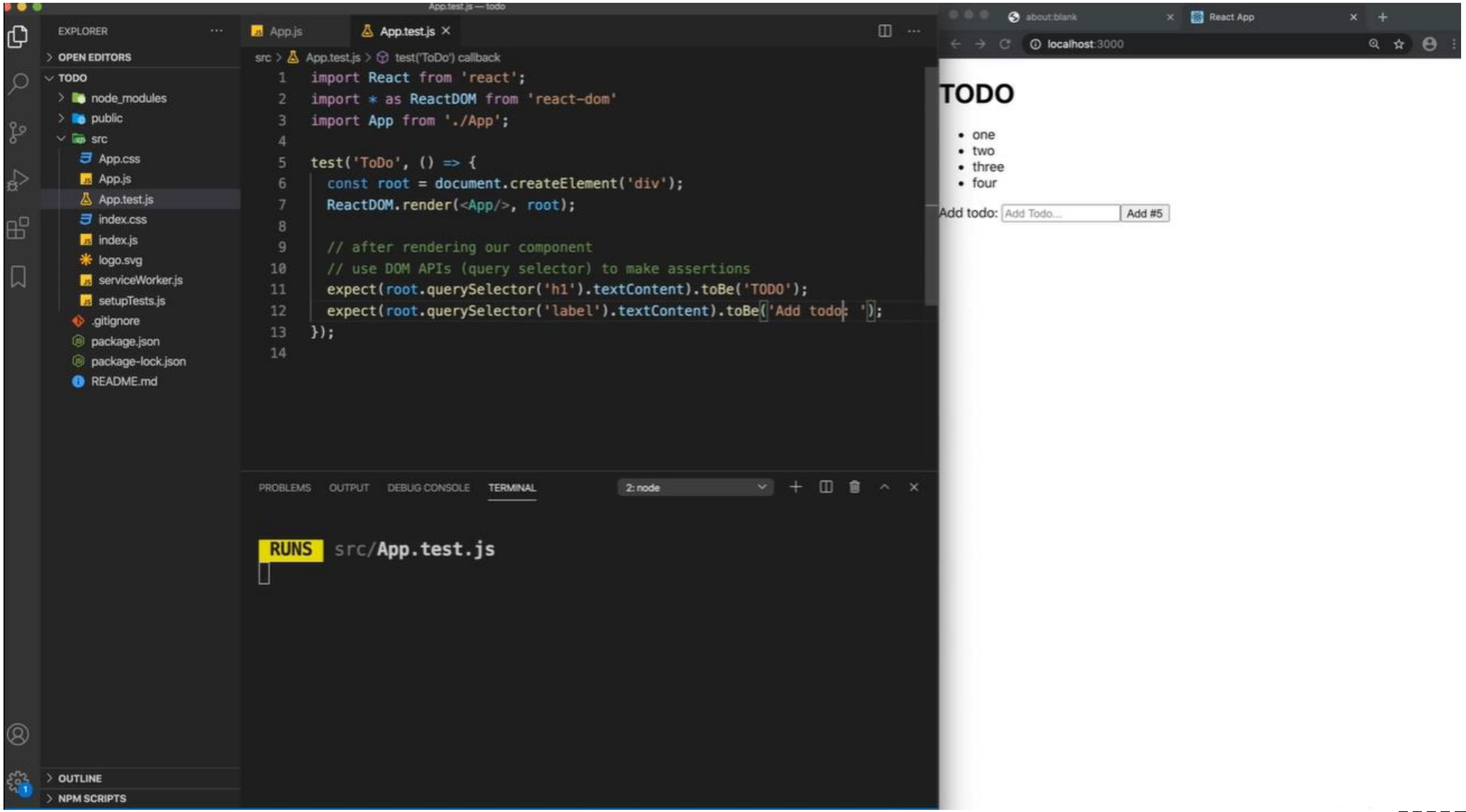
Testing A Simple DOM Application (20/25)



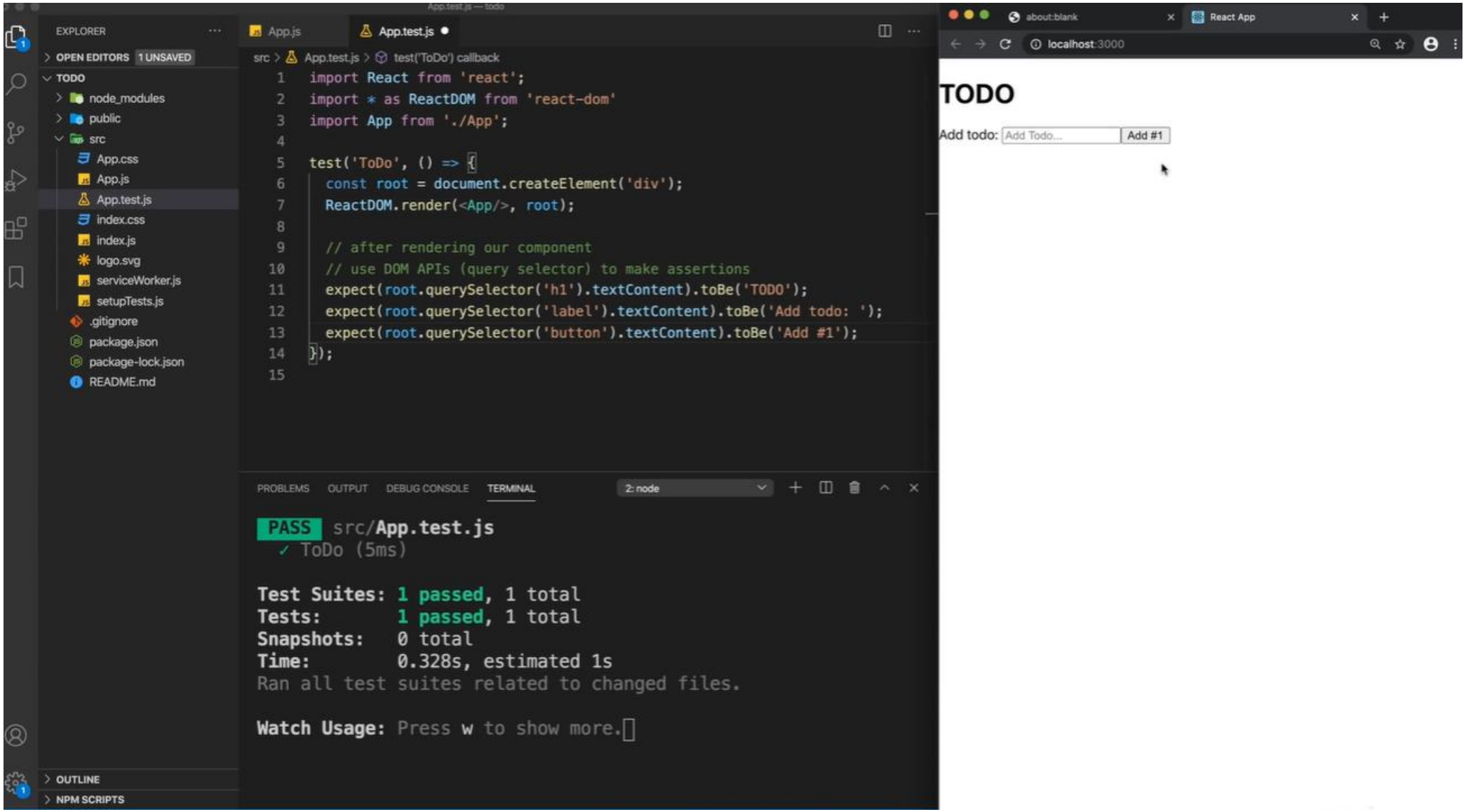
Testing A Simple DOM Application (21/25)



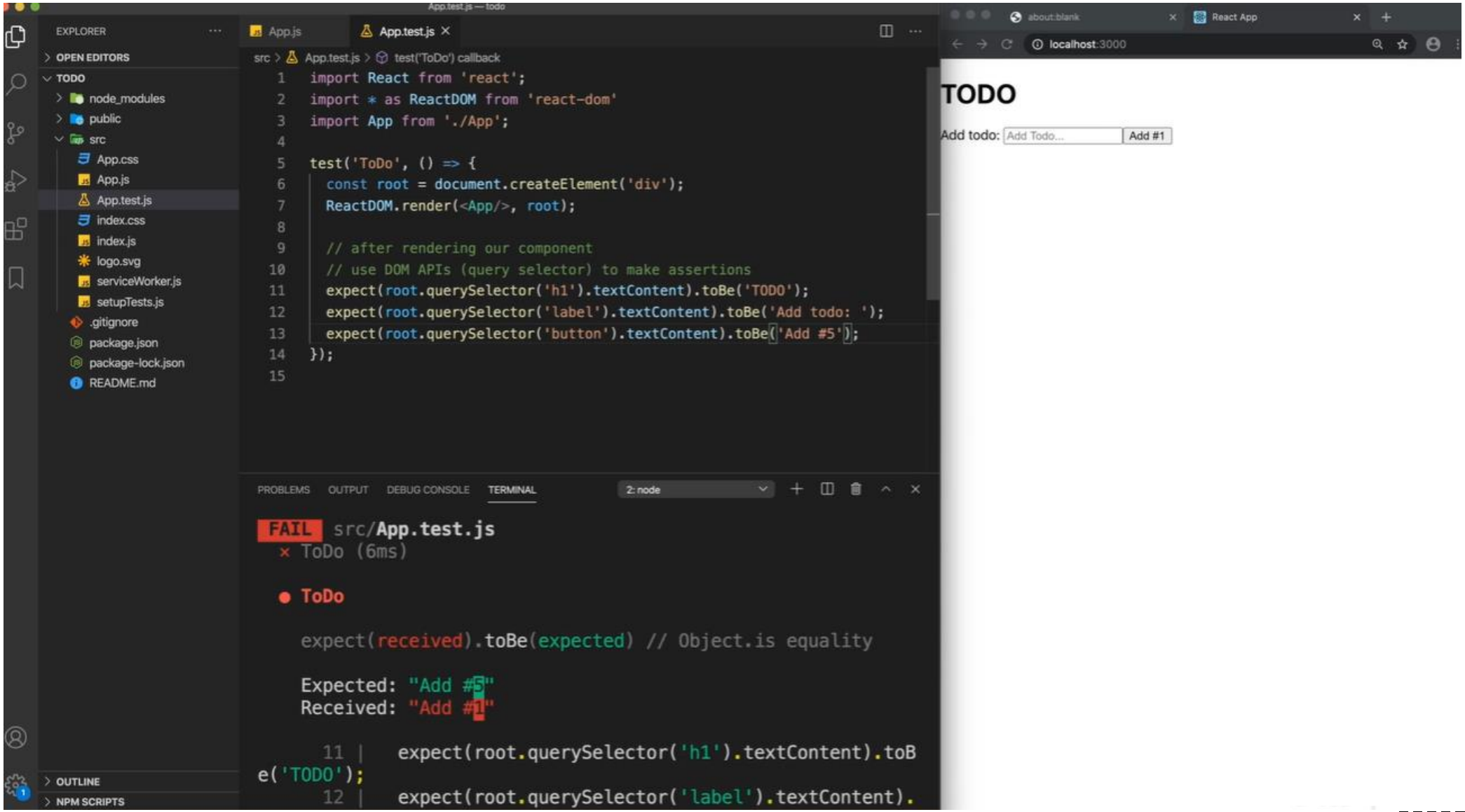
Testing A Simple DOM Application (22/25)



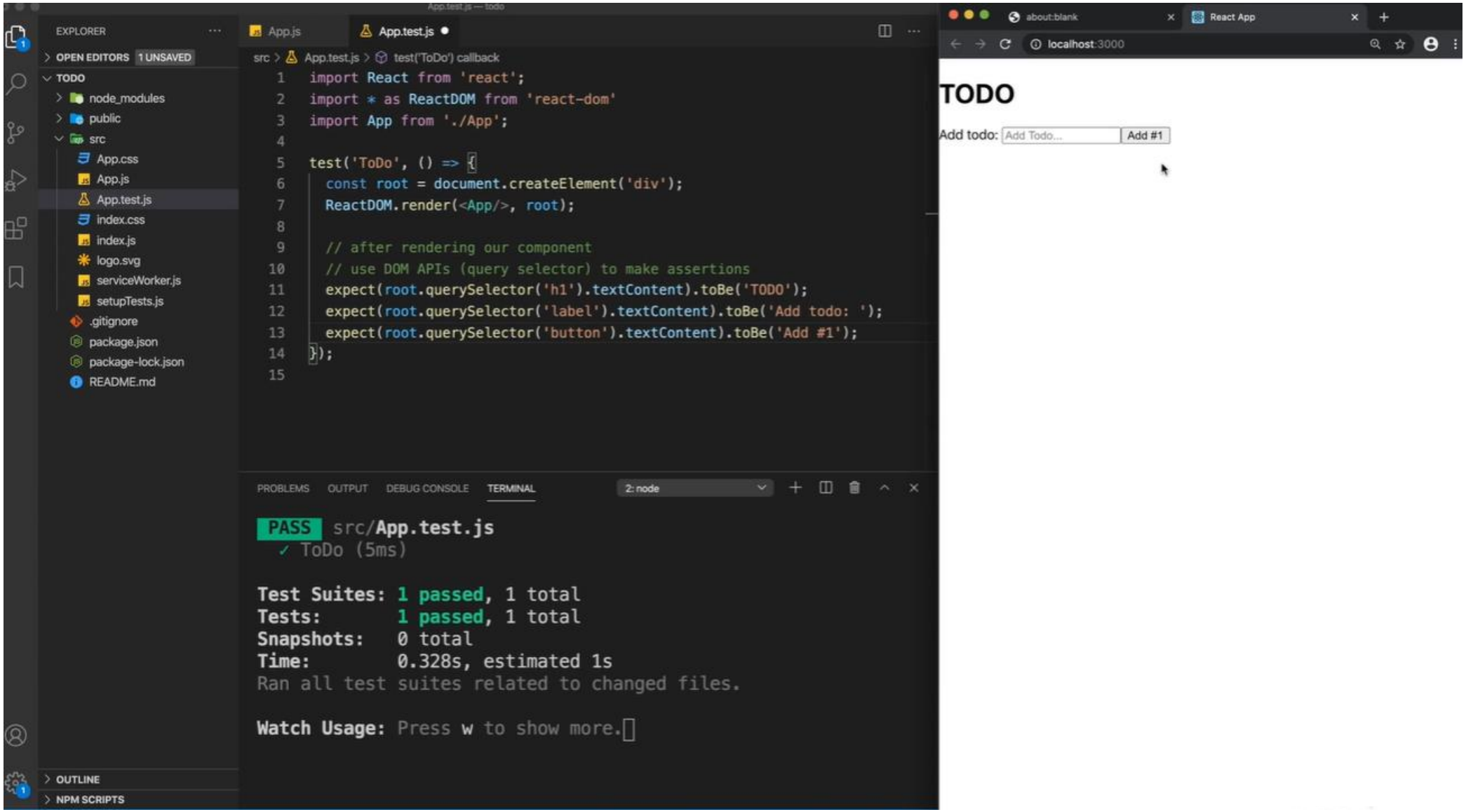
Testing A Simple DOM Application (23/25)



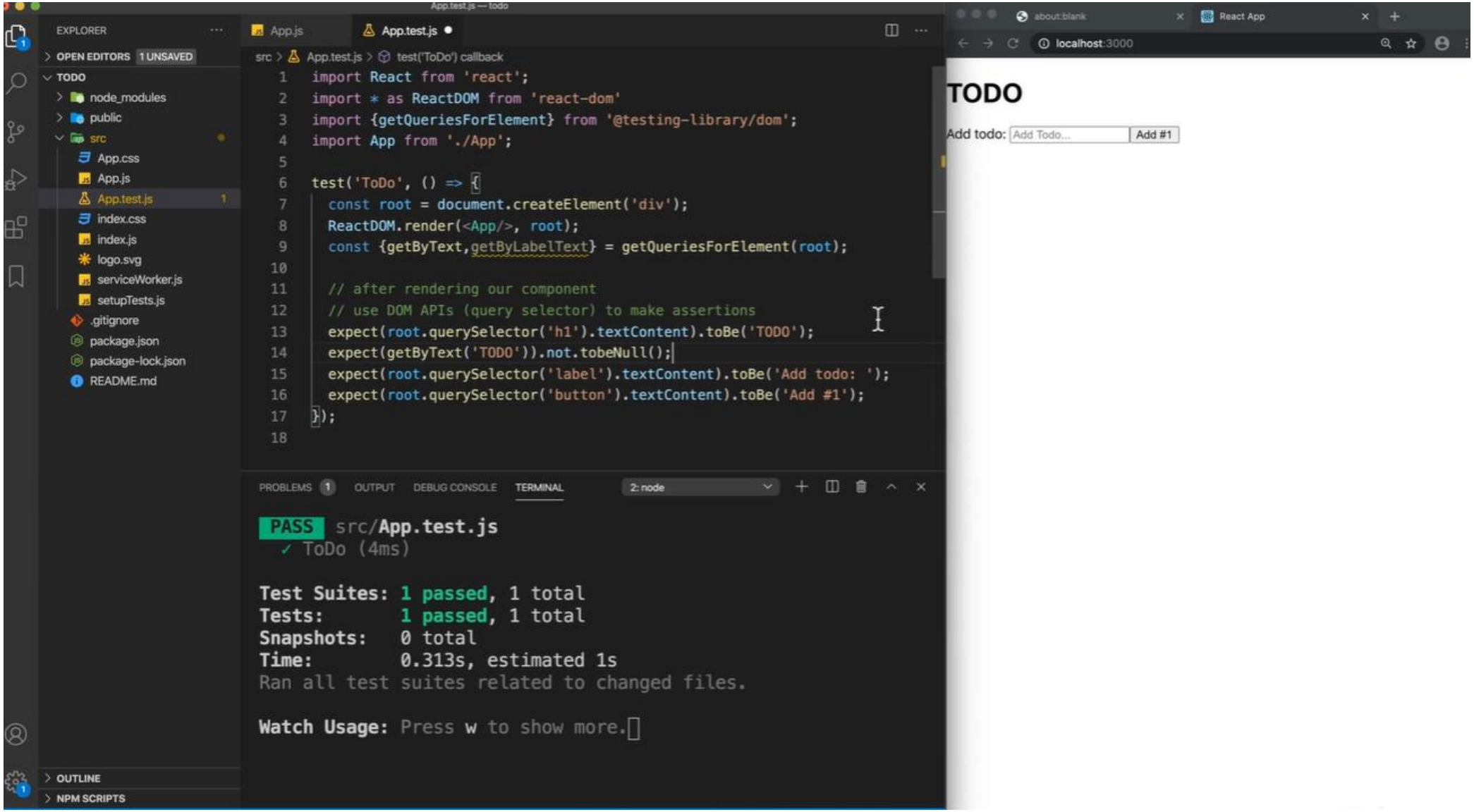
Testing A Simple DOM Application (24/25)



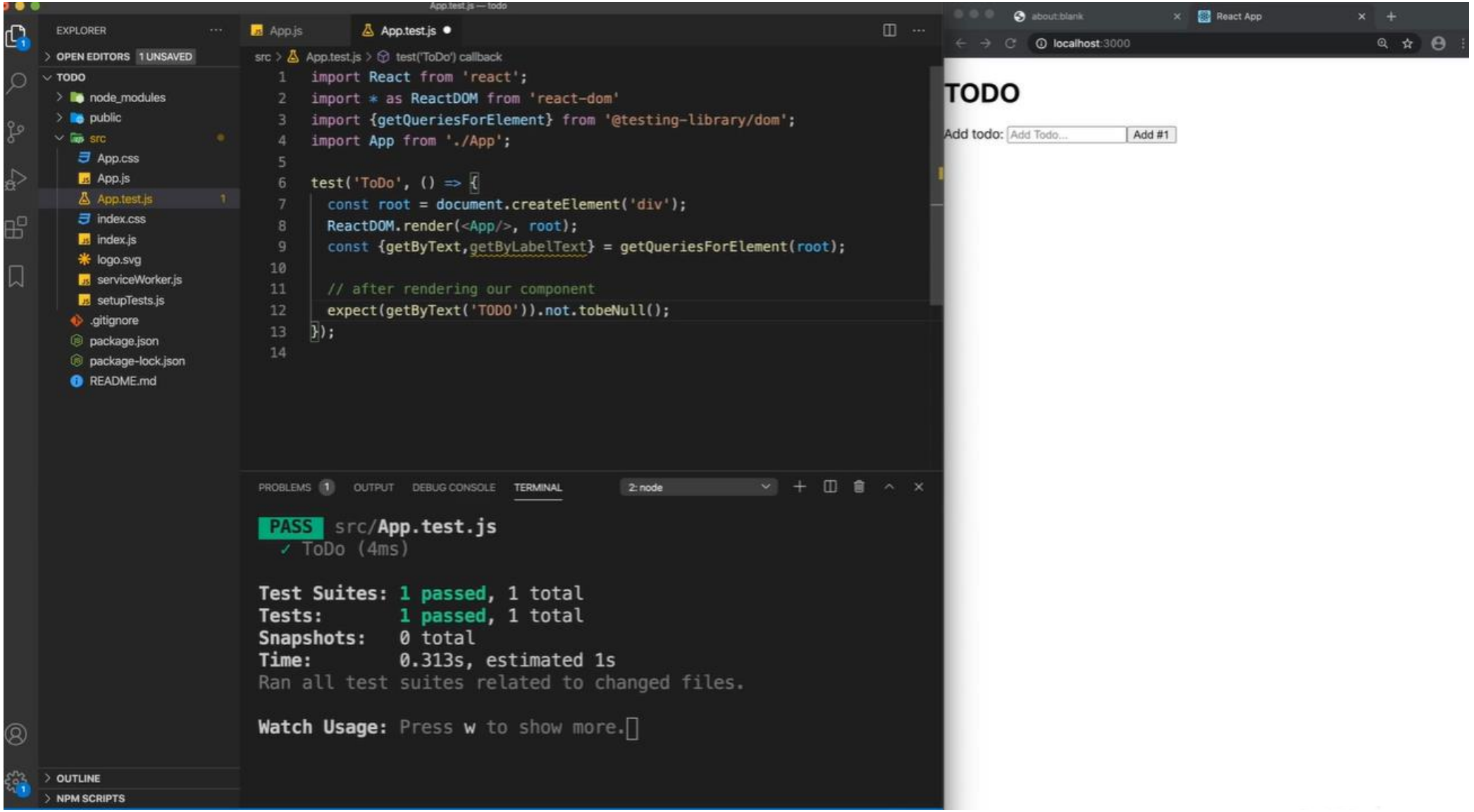
Testing A Simple DOM Application (25/25)



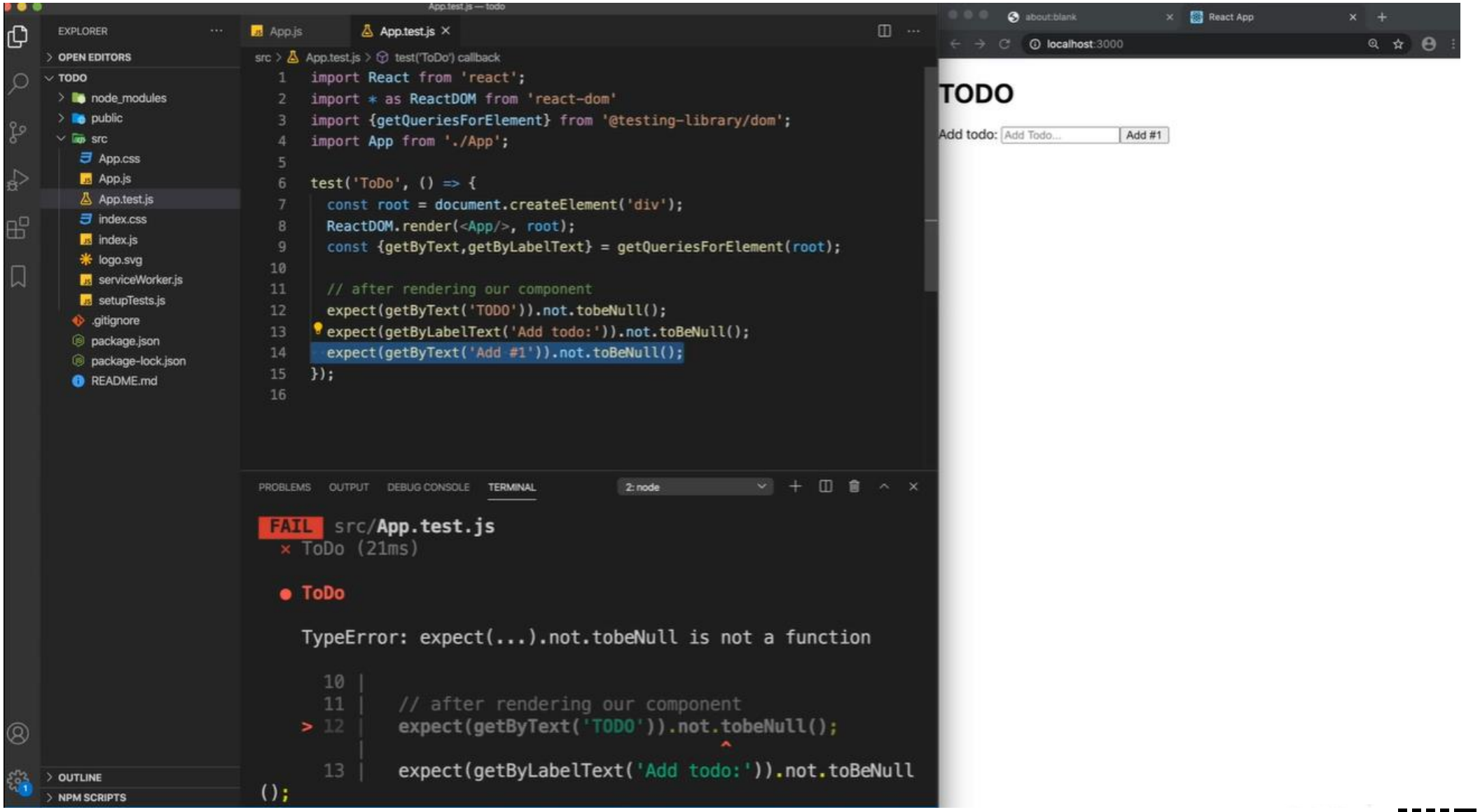
Testing Using The React Library (1/9)



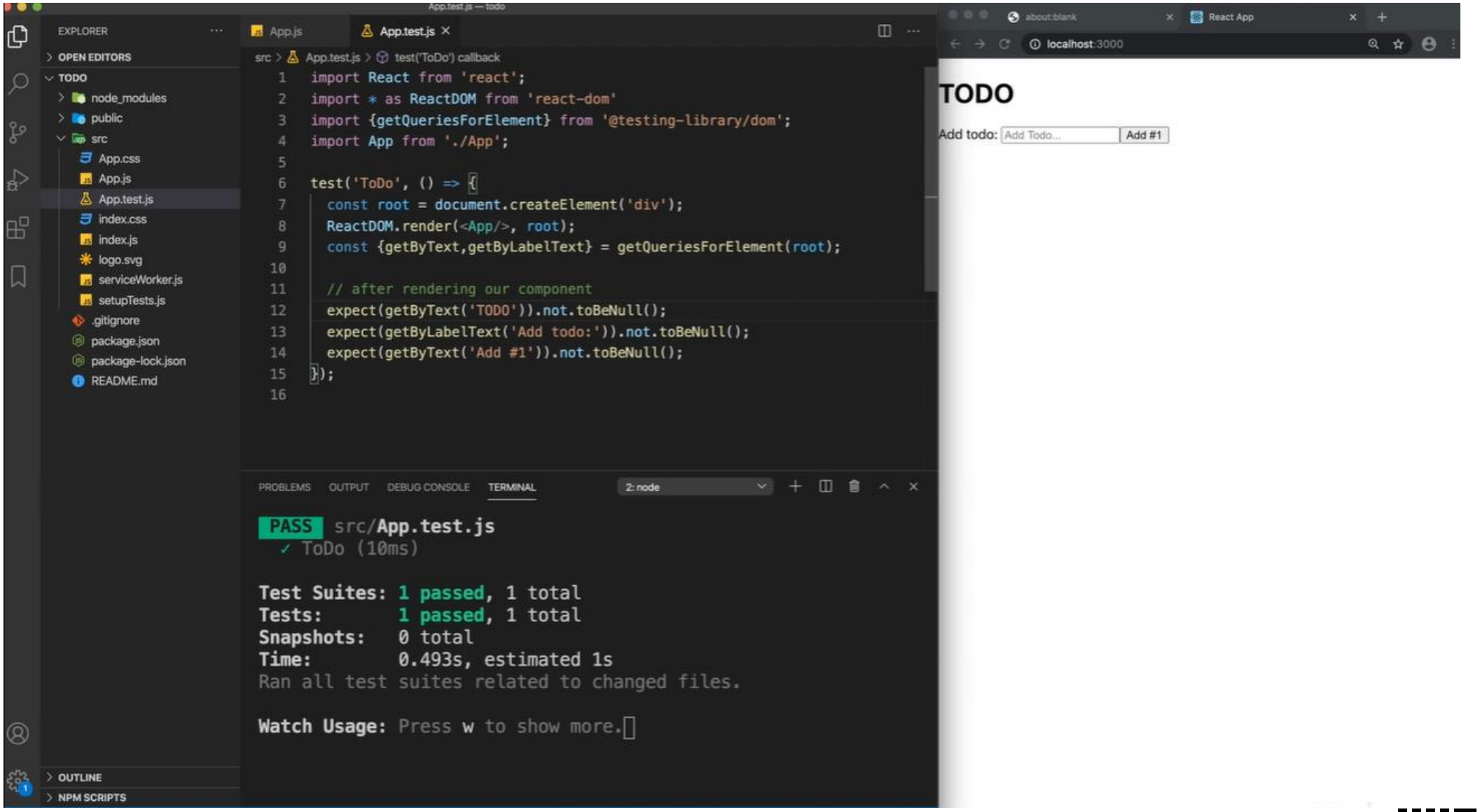
Testing Using The React Library (2/9)



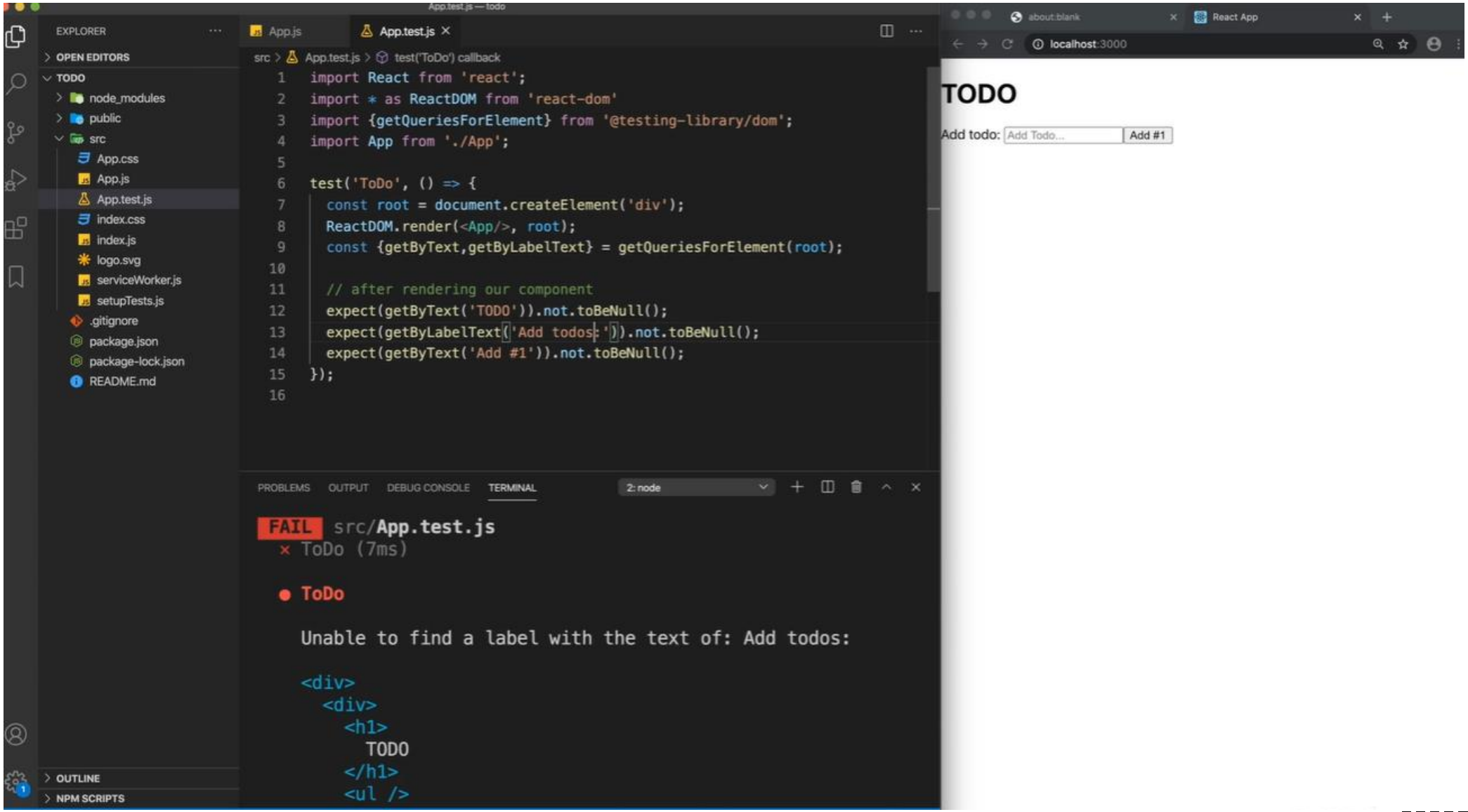
Testing Using The React Library (3/9)



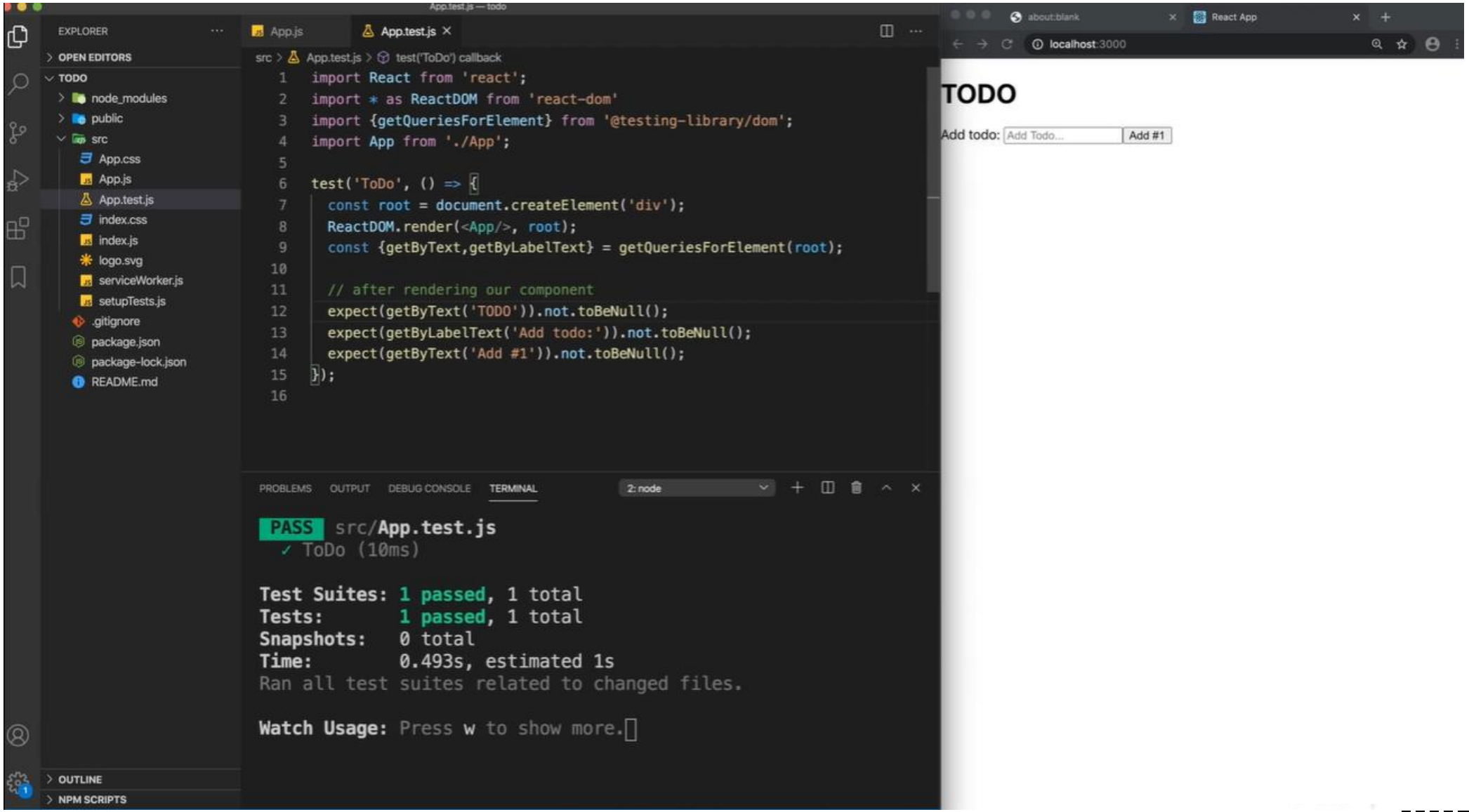
Testing Using The React Library (4/9)



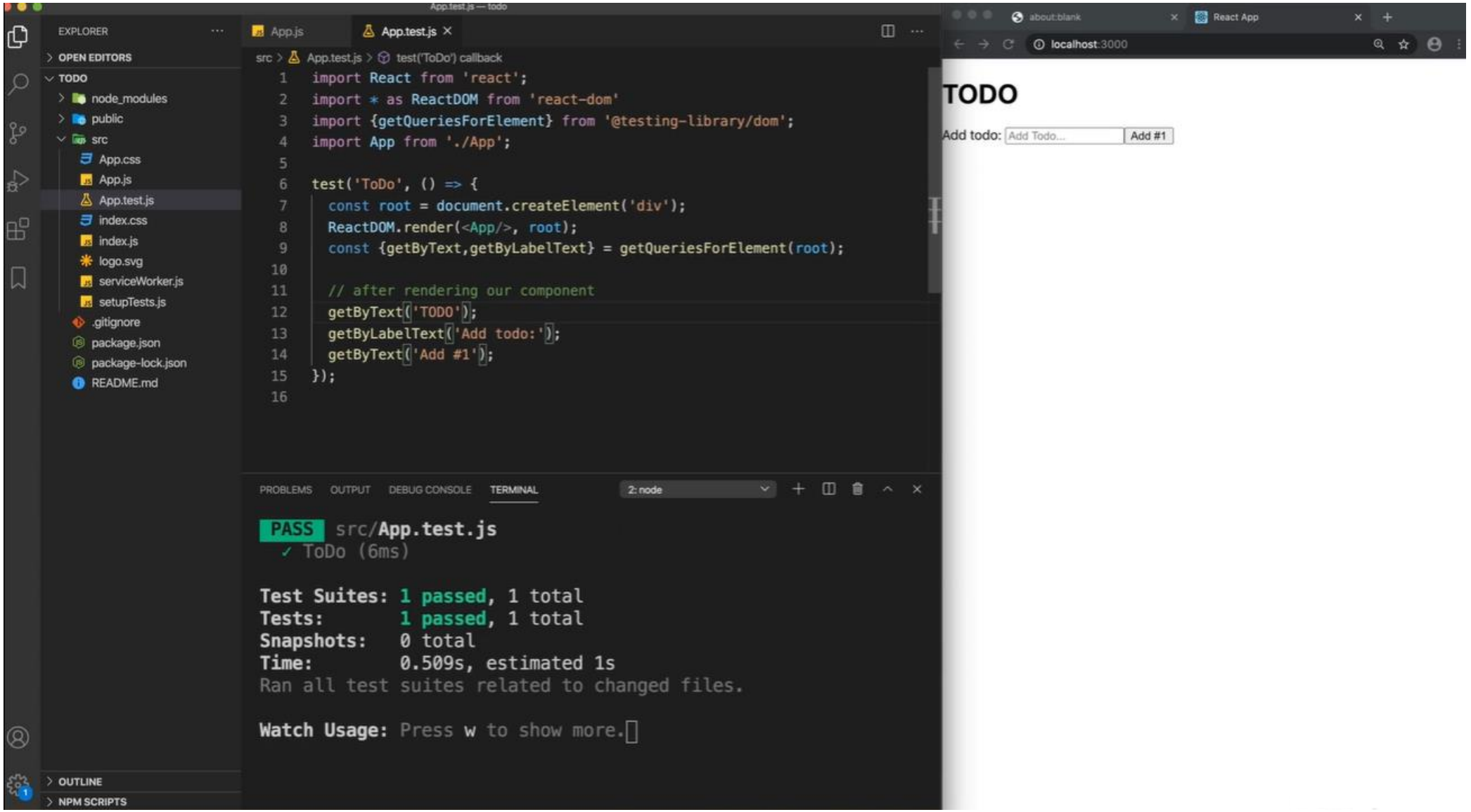
Testing Using The React Library (5/9)



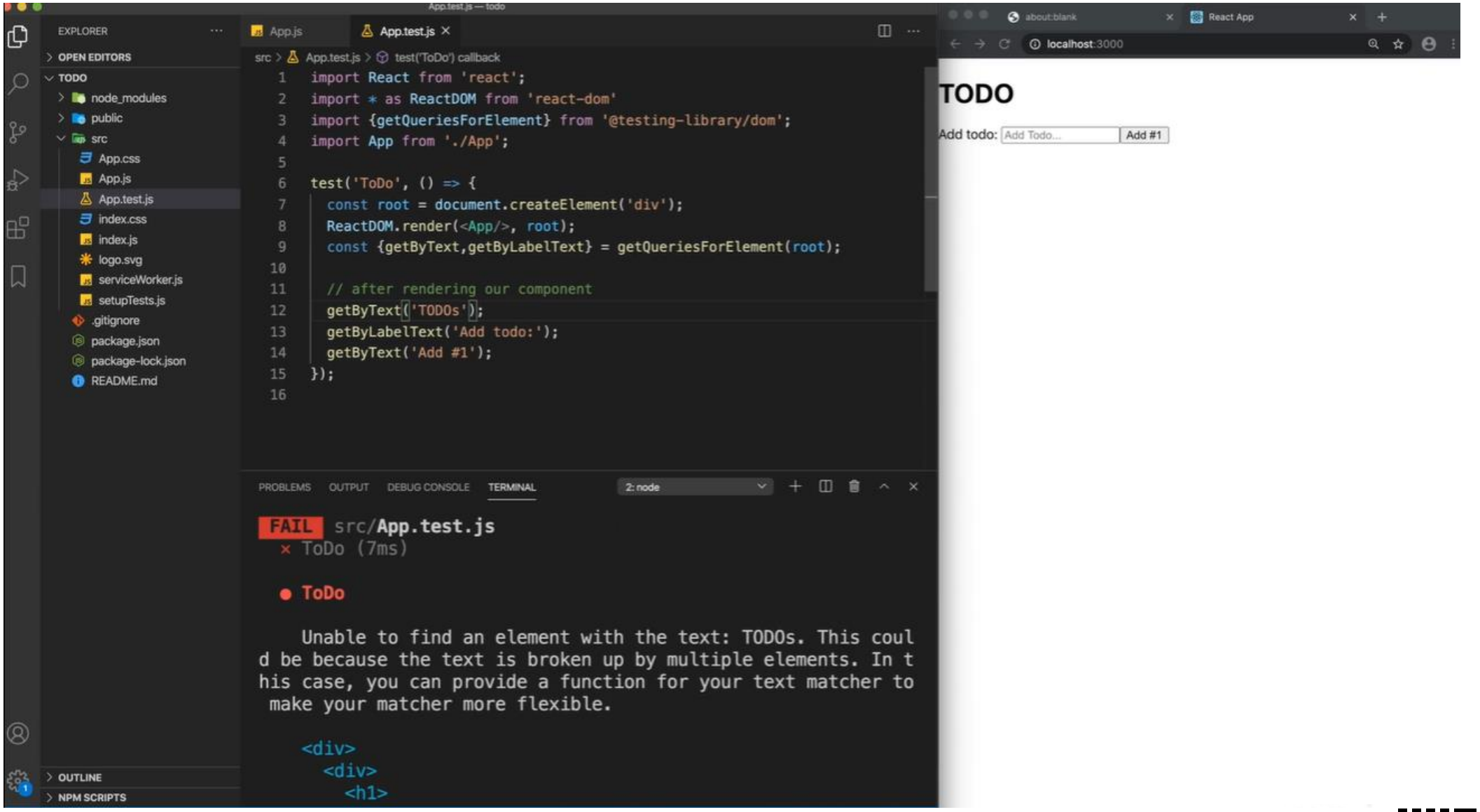
Testing Using The React Library (6/9)



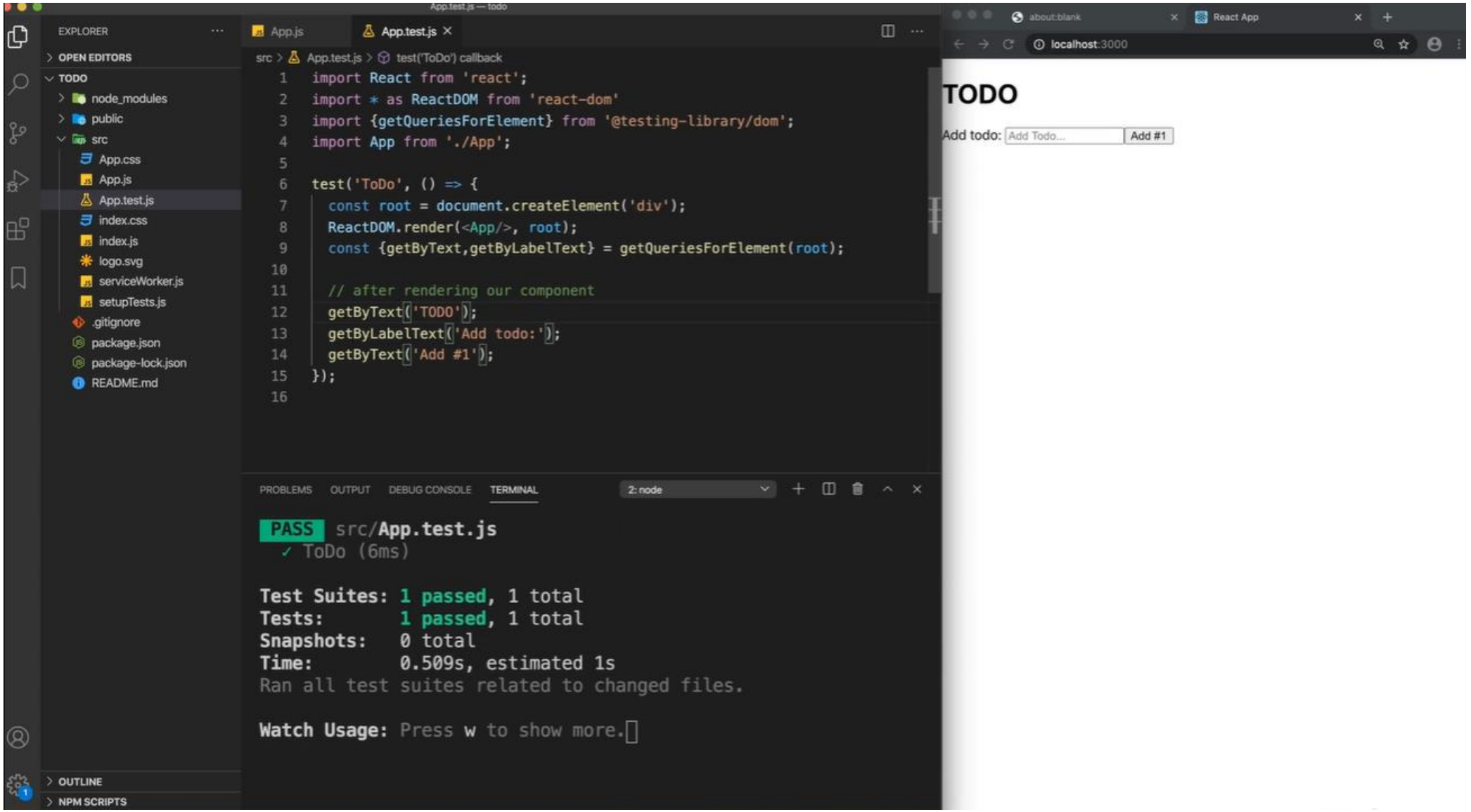
Testing Using The React Library (7/9)



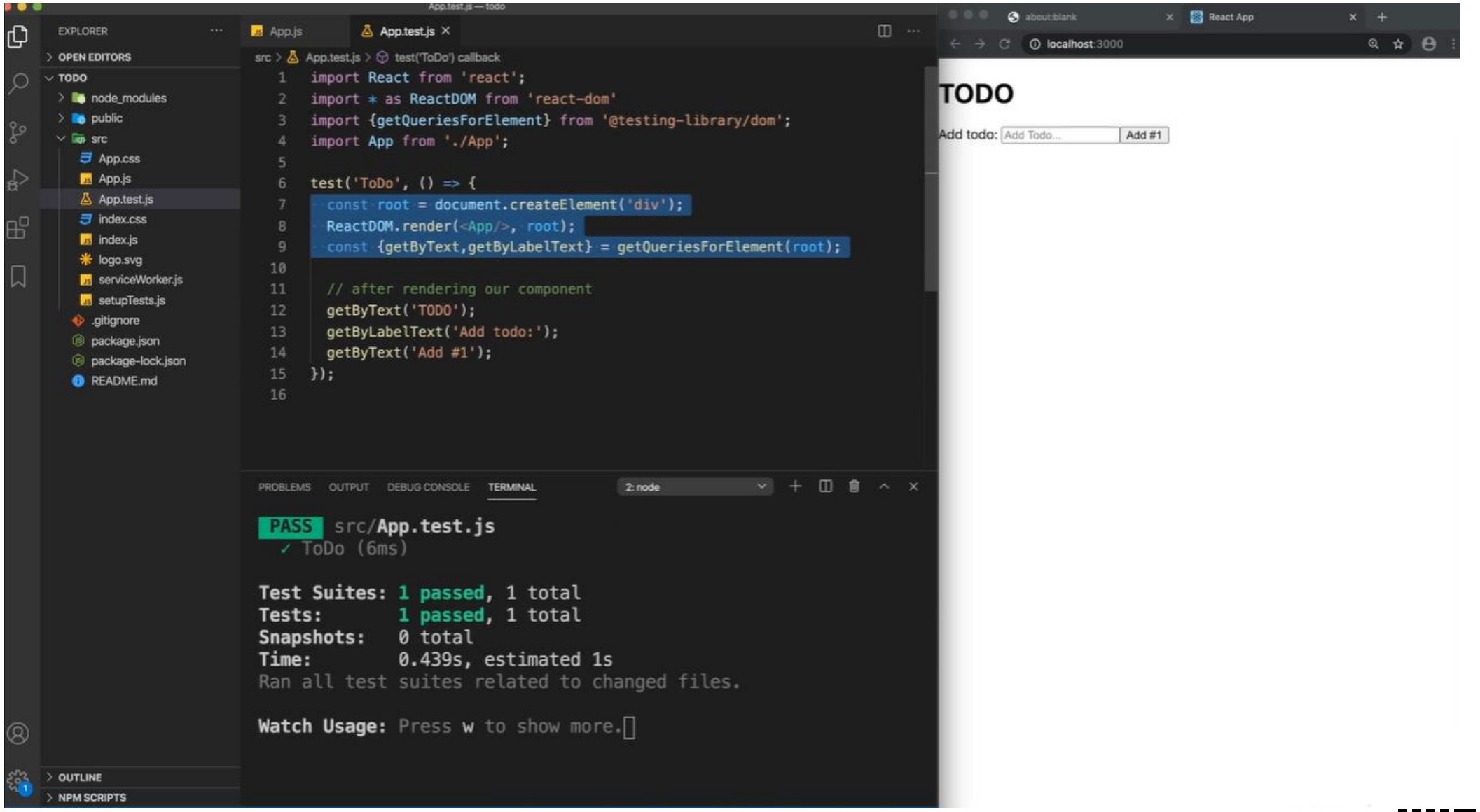
Testing Using The React Library (8/9)



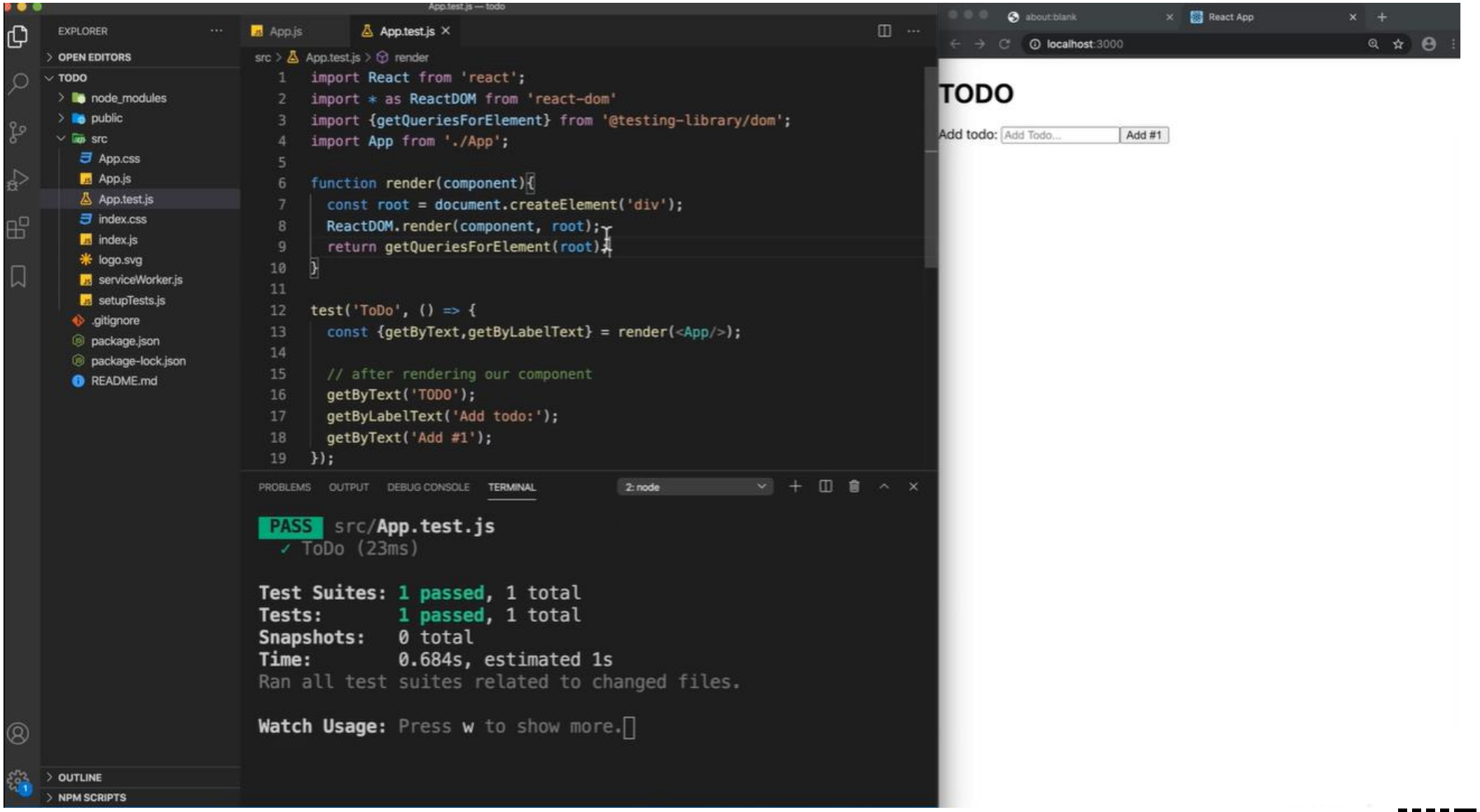
Testing Using The React Library (9/9)



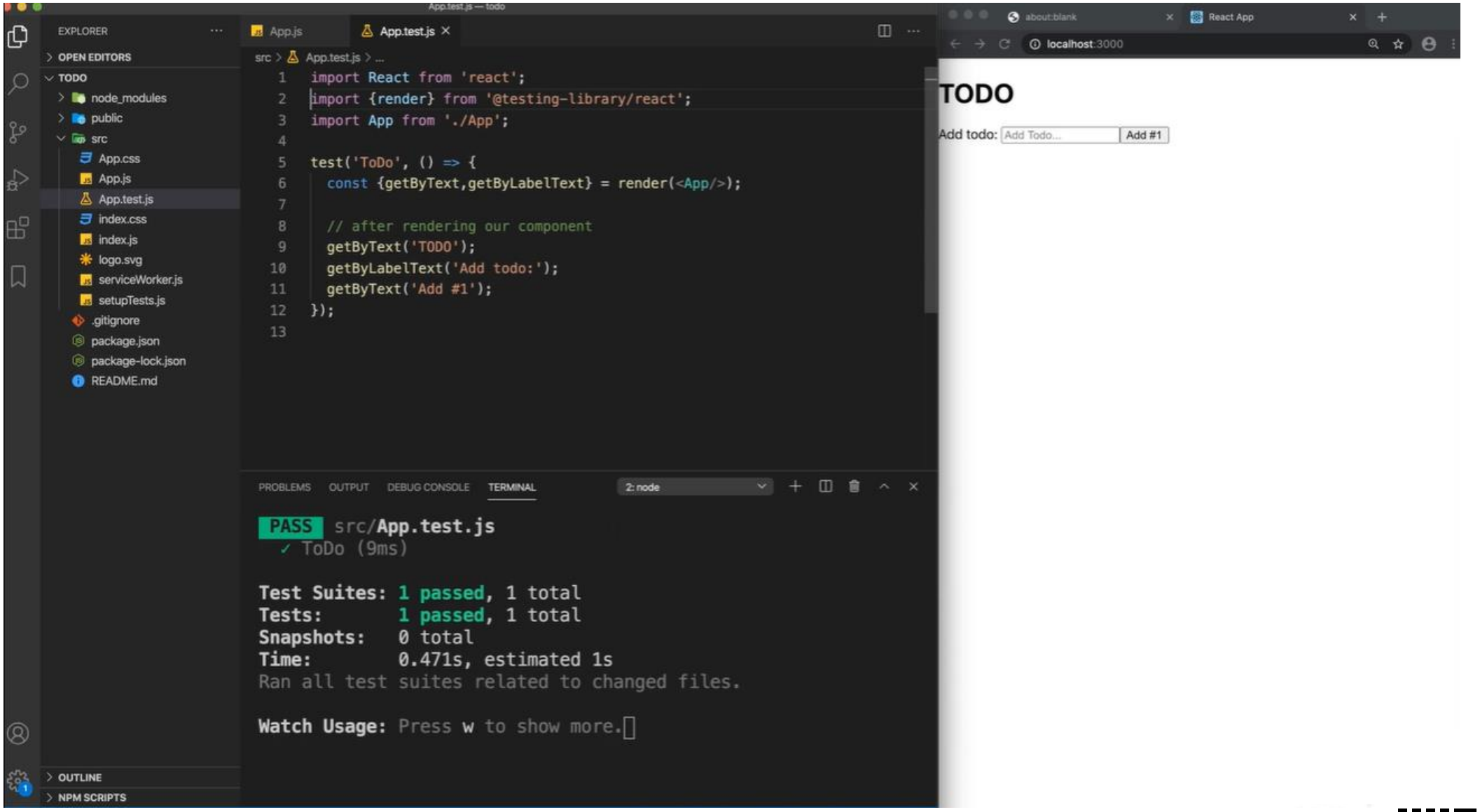
Testing Render (1/3)



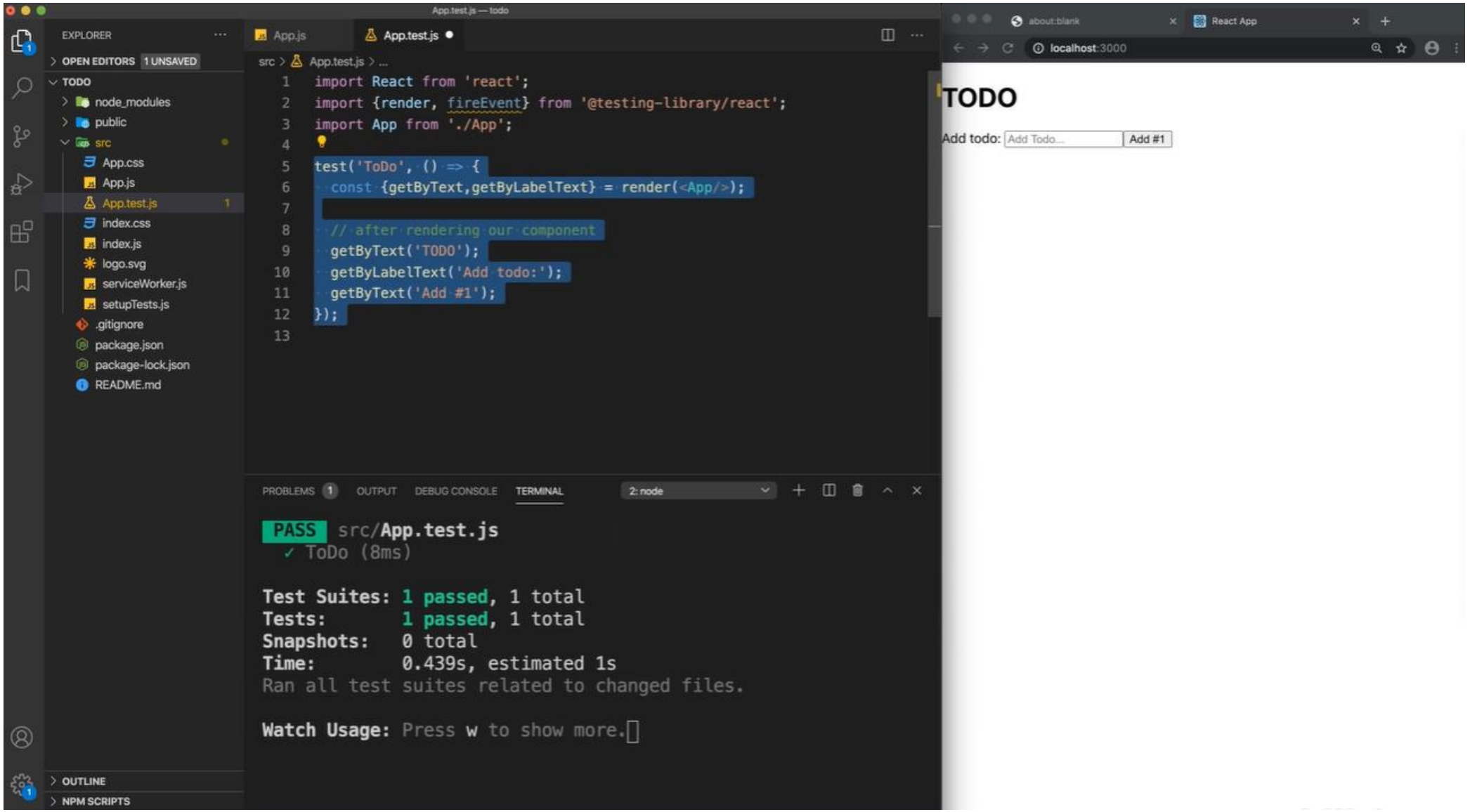
Testing Render (2/3)



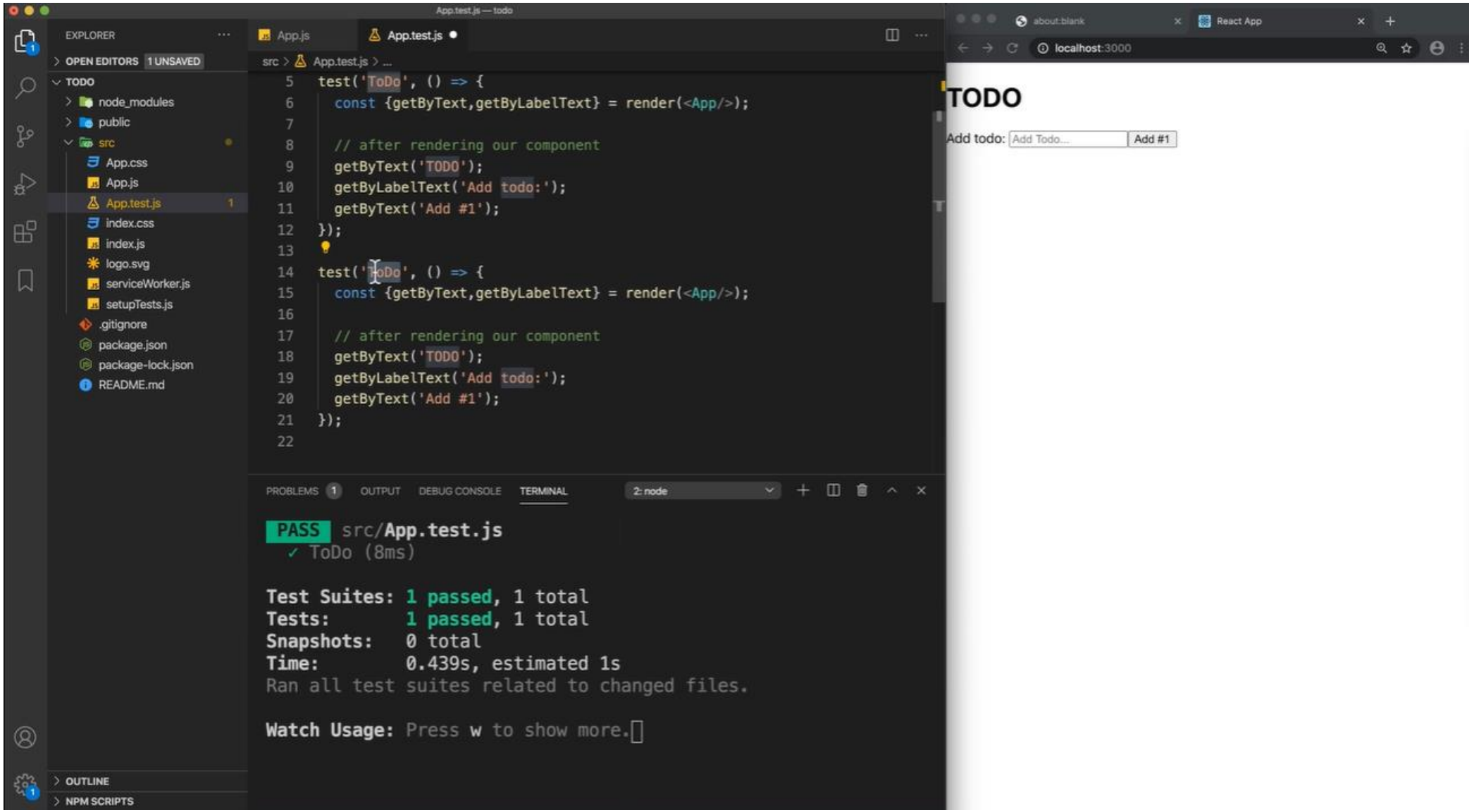
Testing Render (3/3)



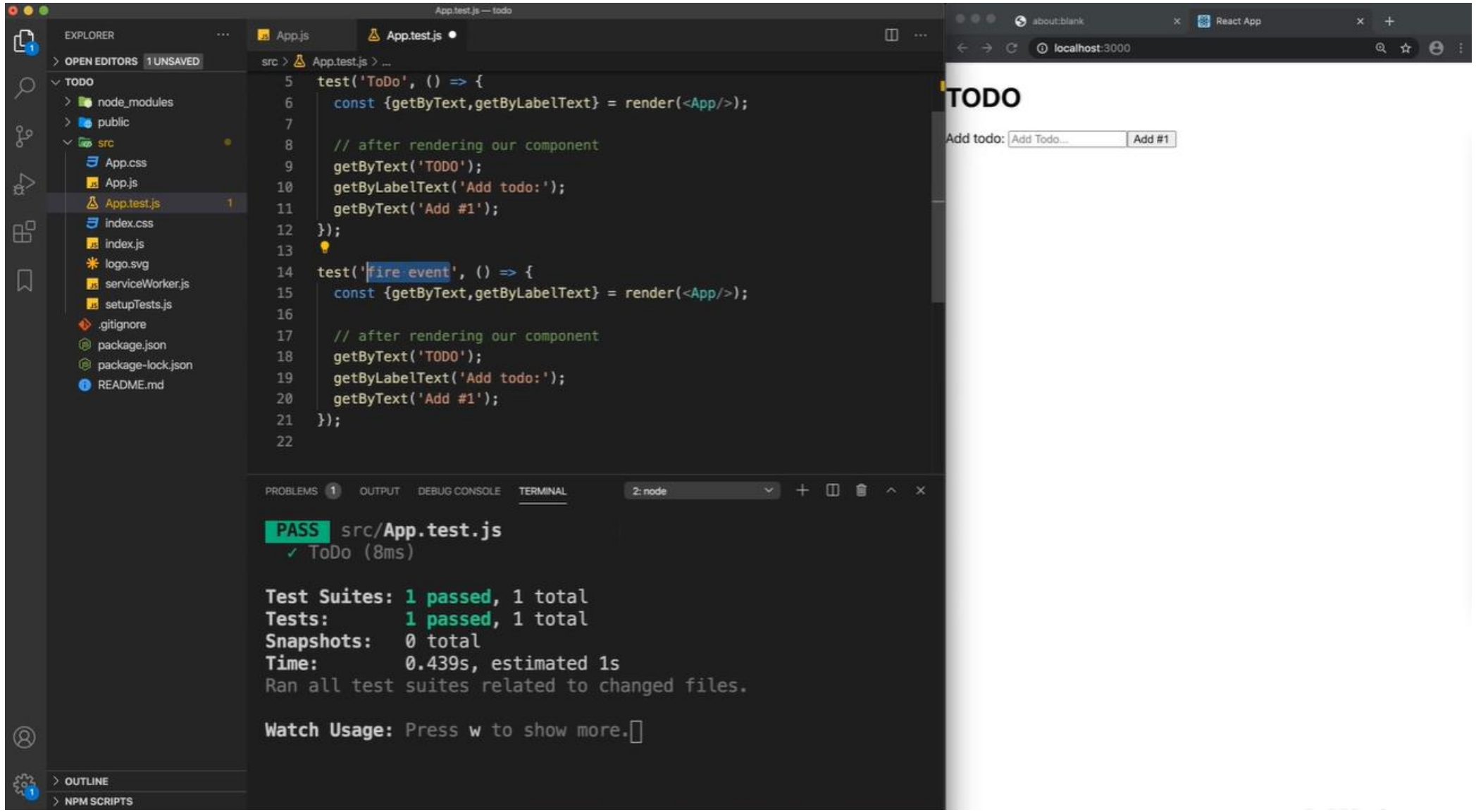
Testing Fire Event (1/7)



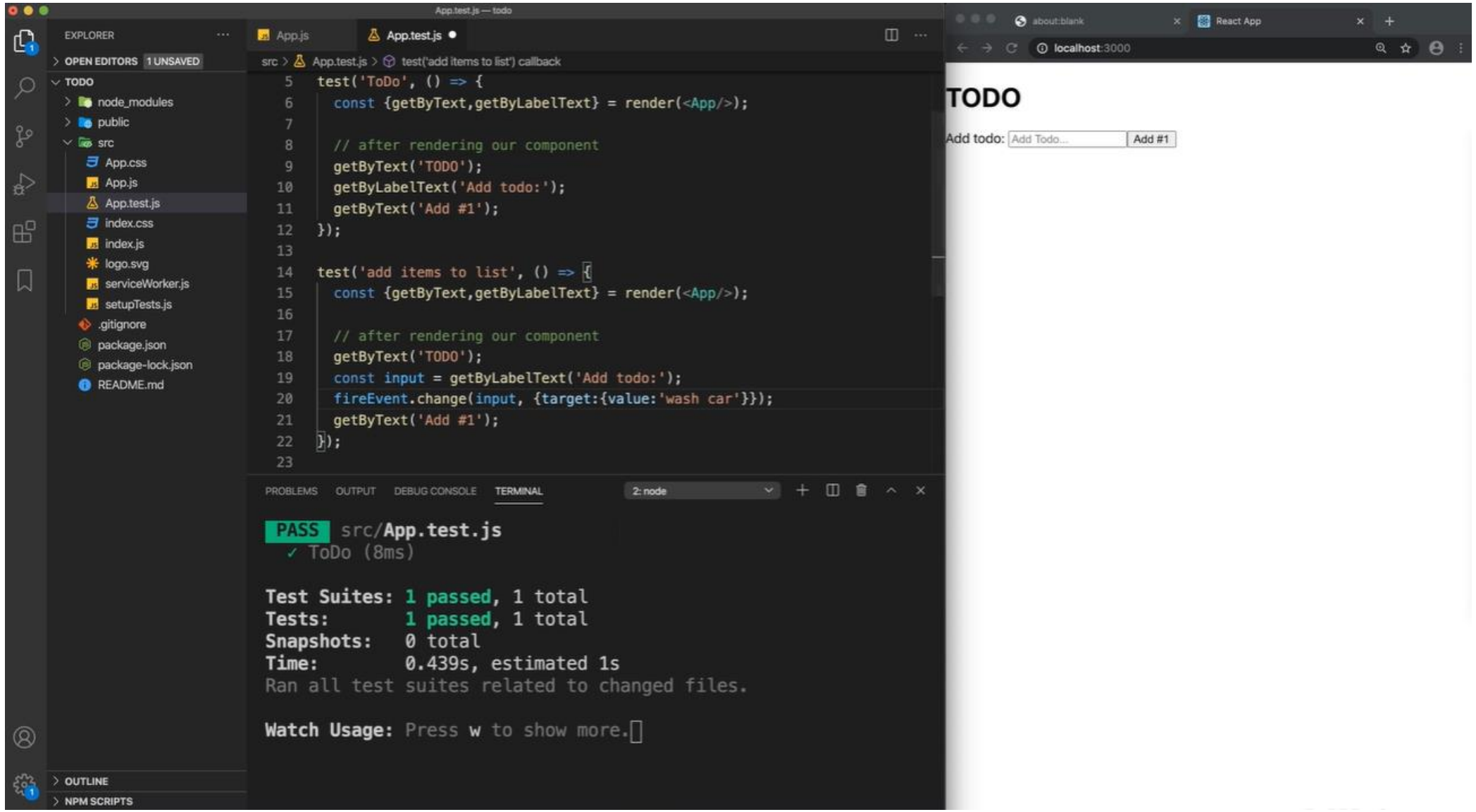
Testing Fire Event (2/7)



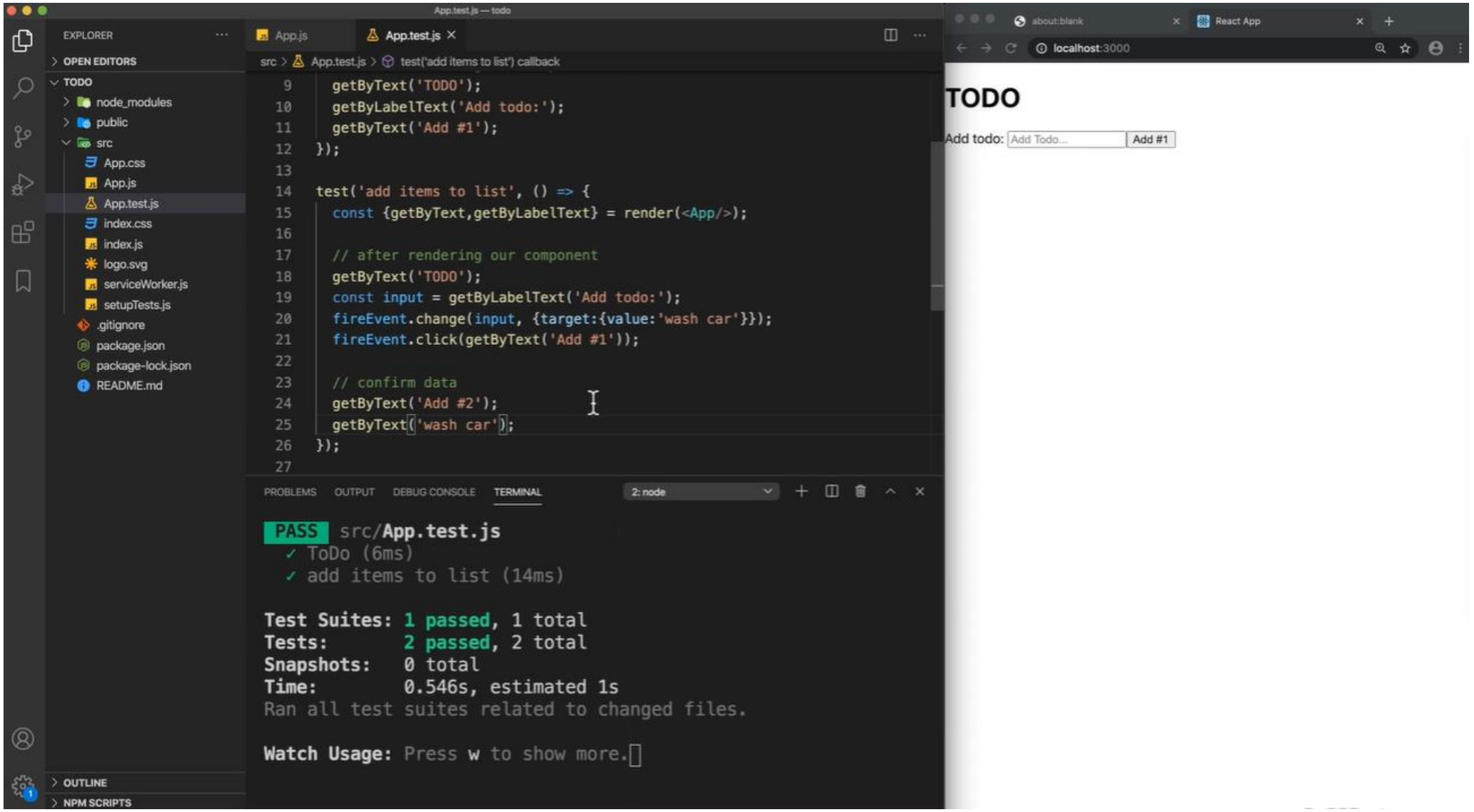
Testing Fire Event (3/7)



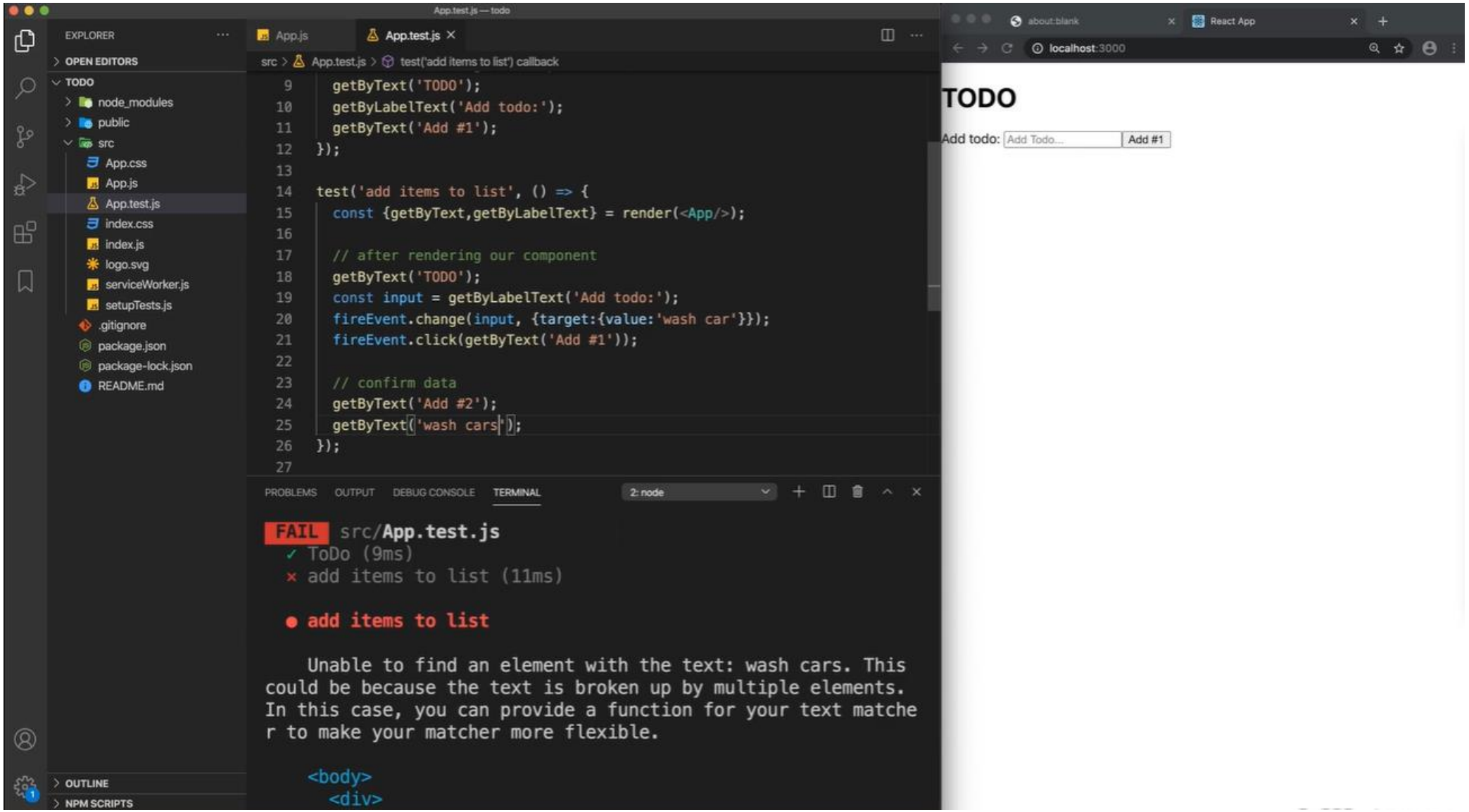
Testing Fire Event (4/7)



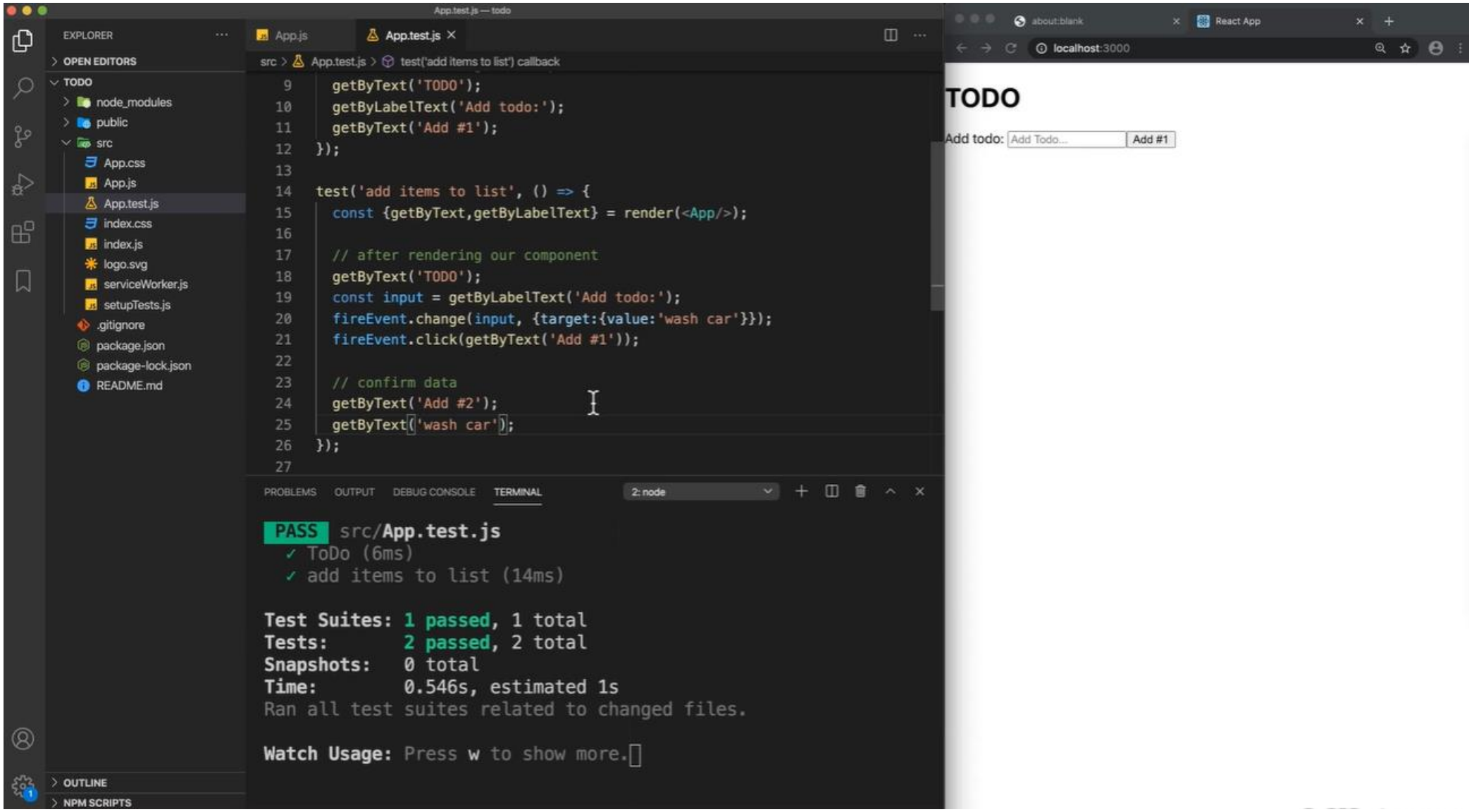
Testing Fire Event (5/7)



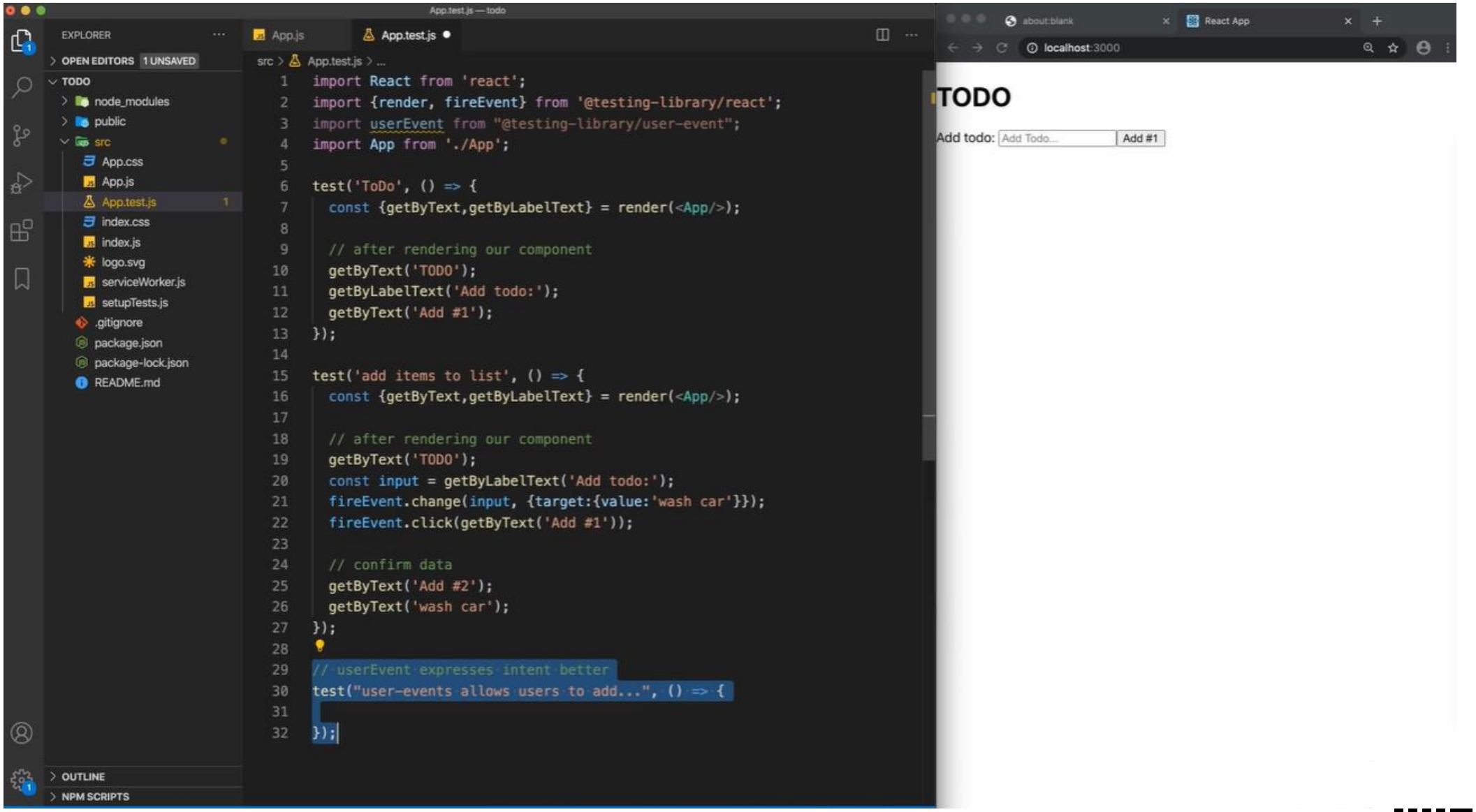
Testing Fire Event (6/7)



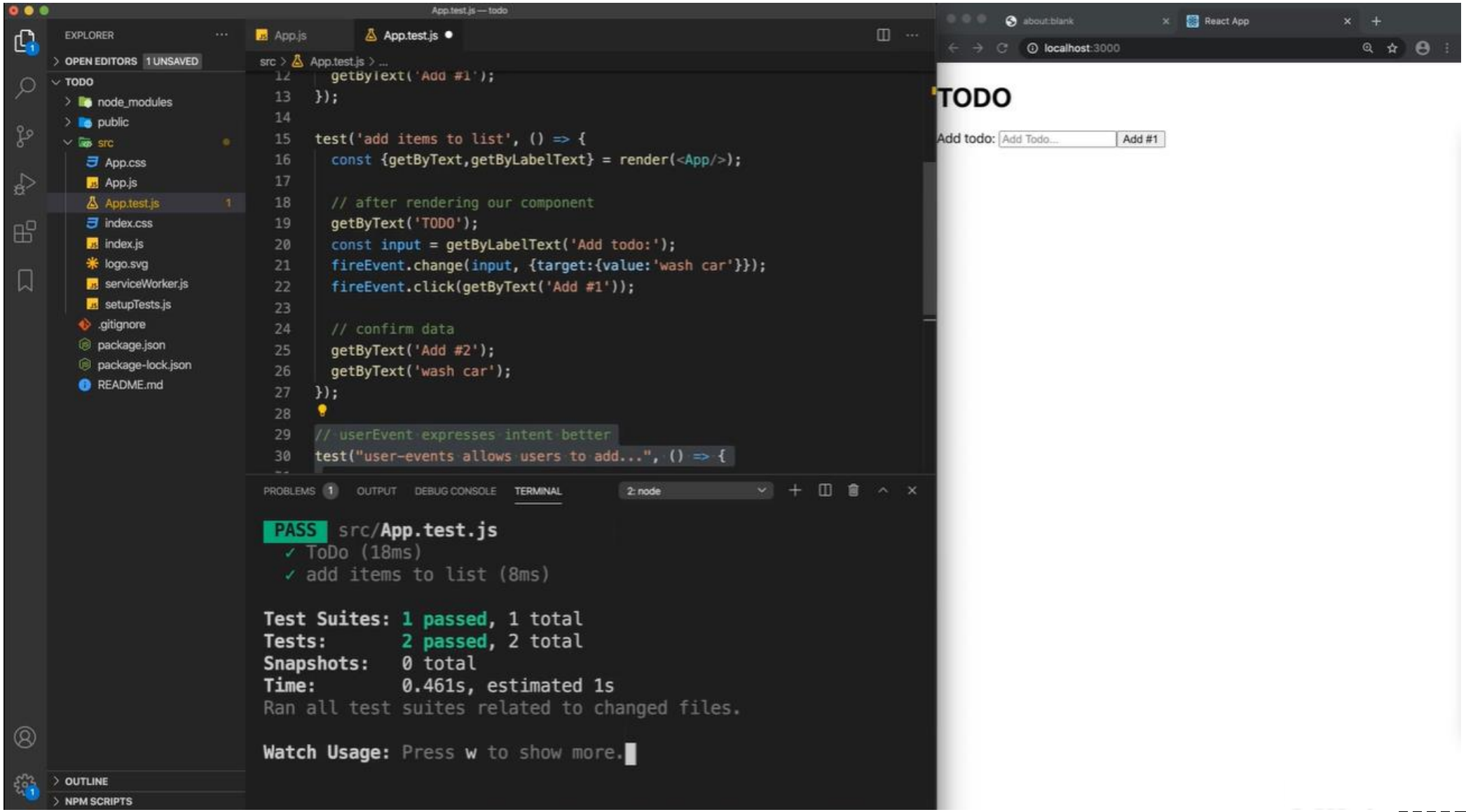
Testing Fire Event (7/7)



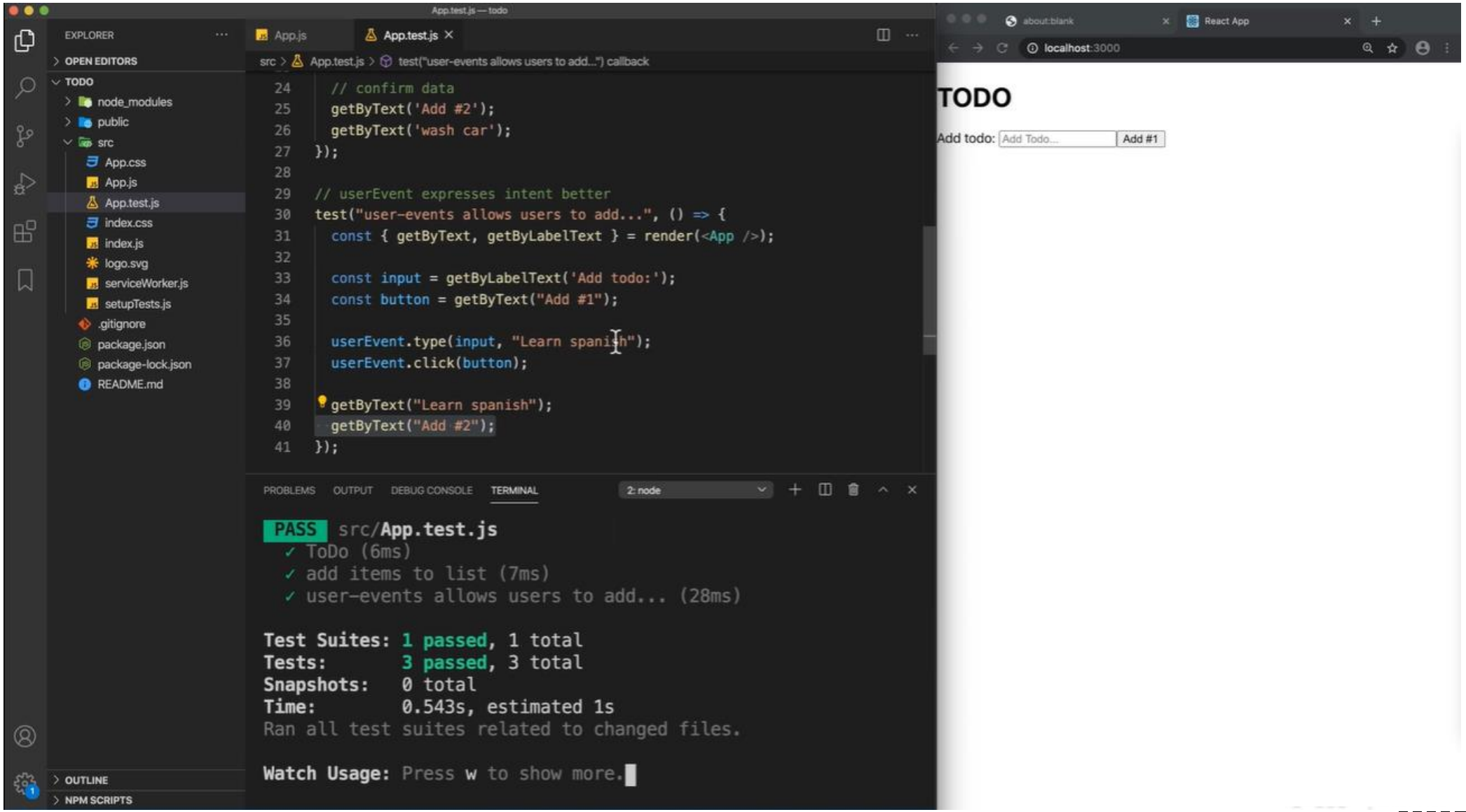
Testing User Event (1/3)



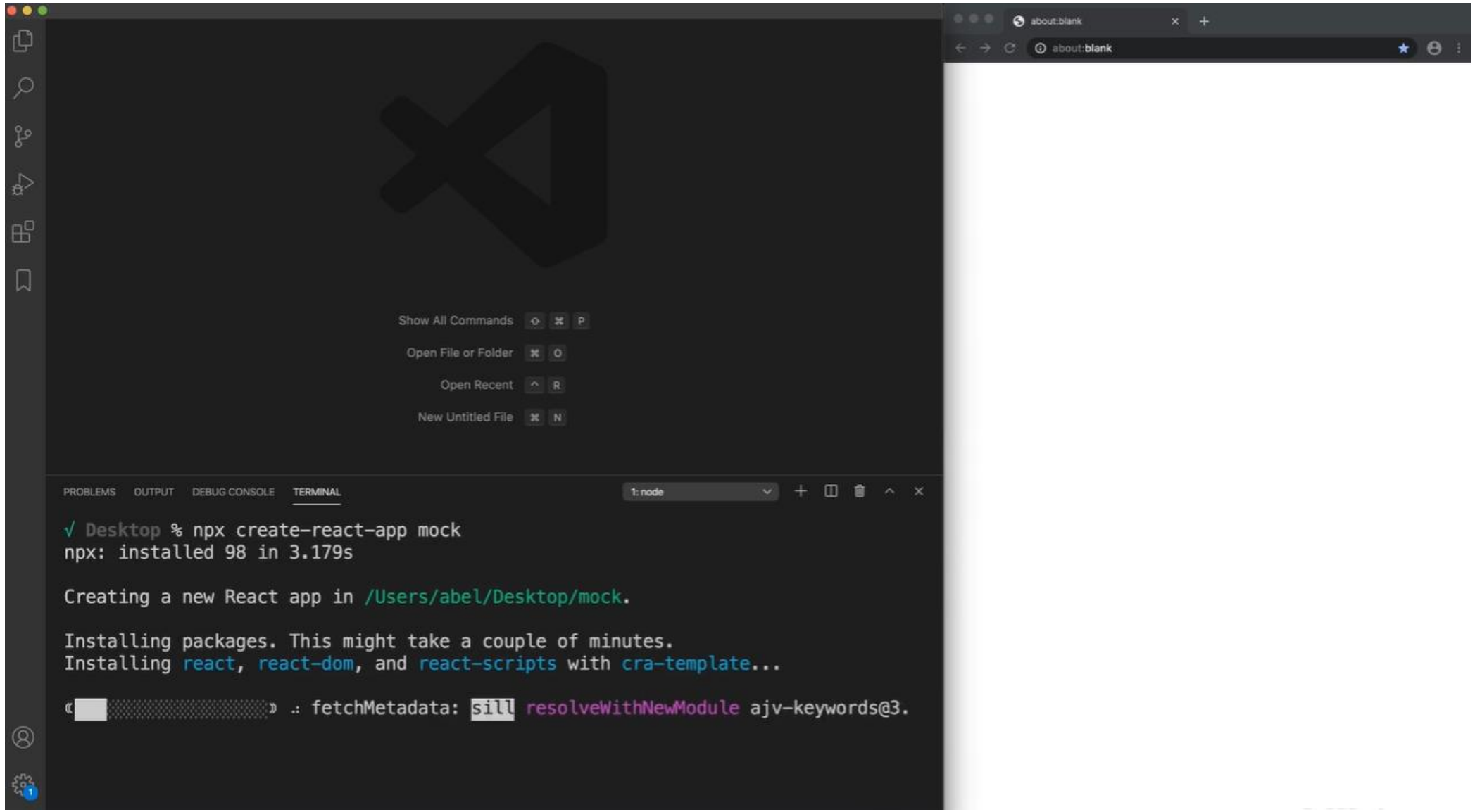
Testing User Event (2/3)



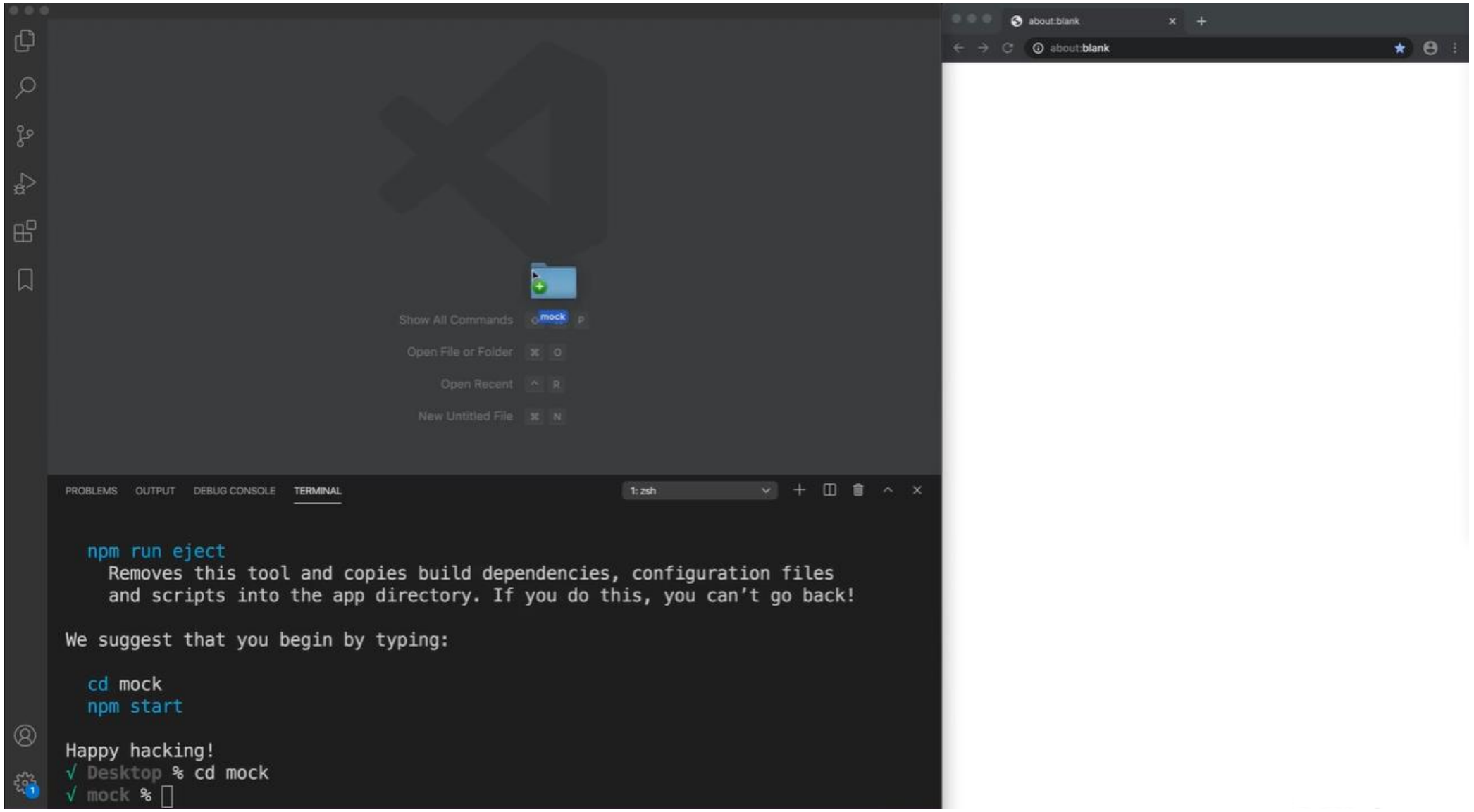
Testing User Event (3/3)



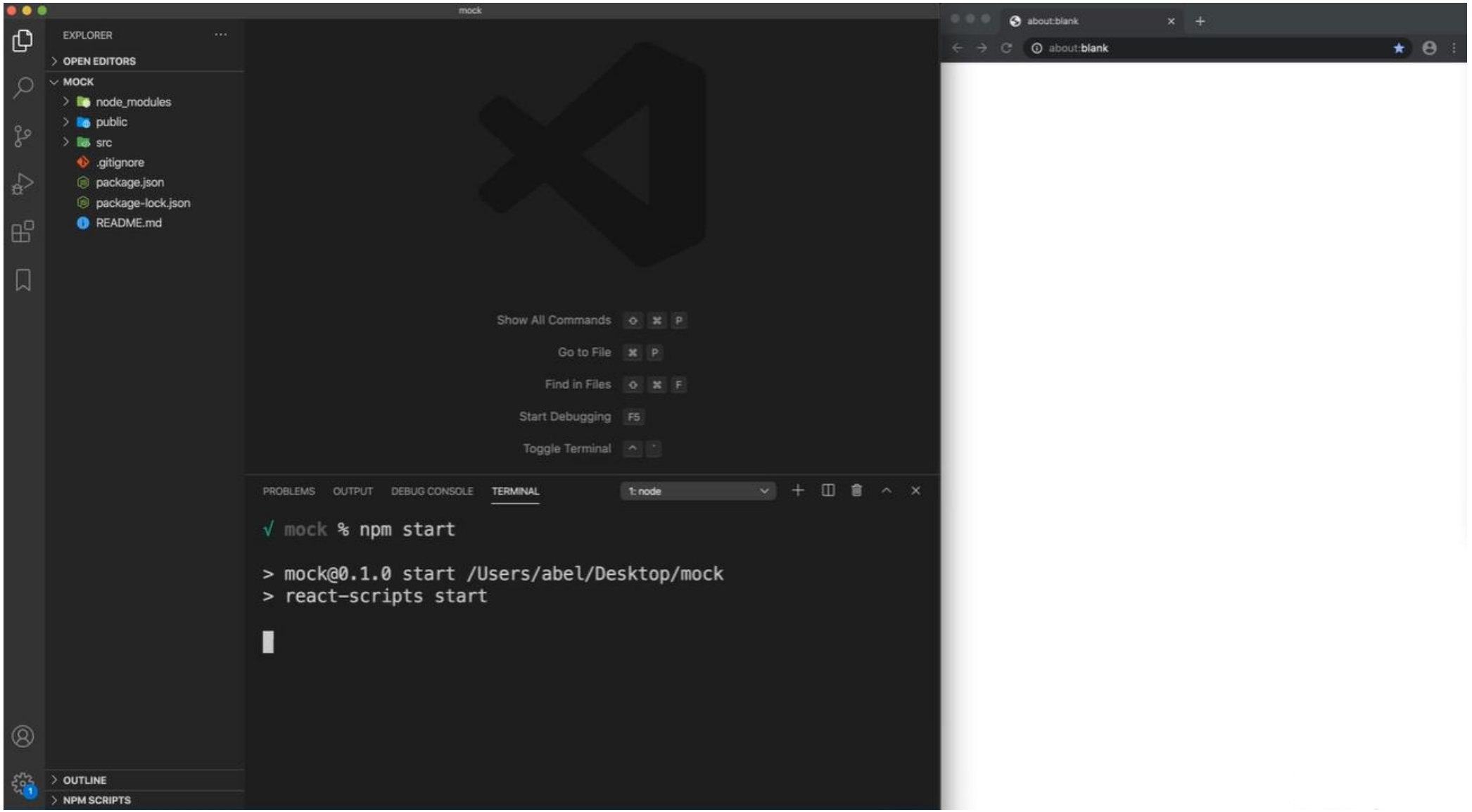
Mock A Dependency (1/11)



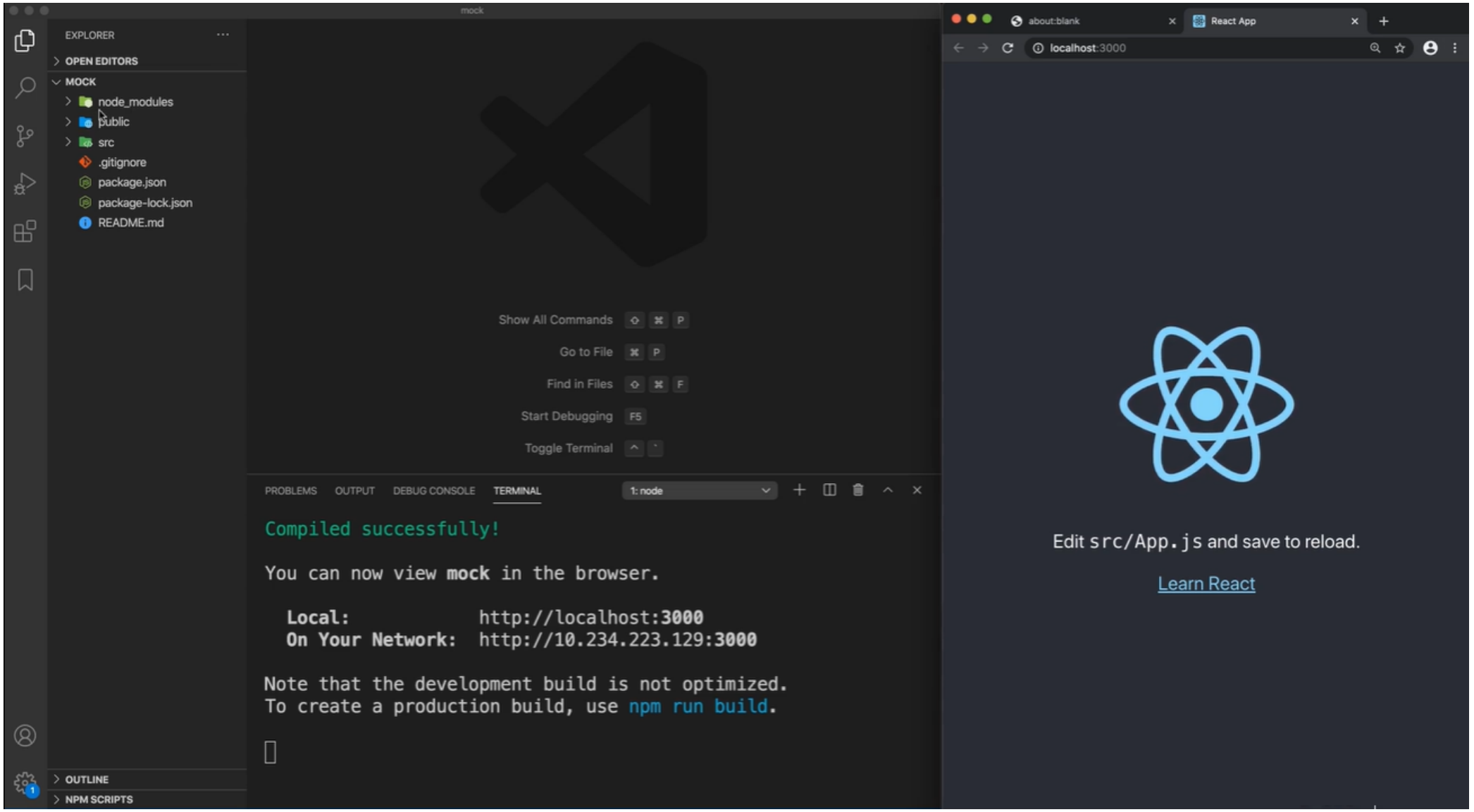
Mock A Dependency (2/11)



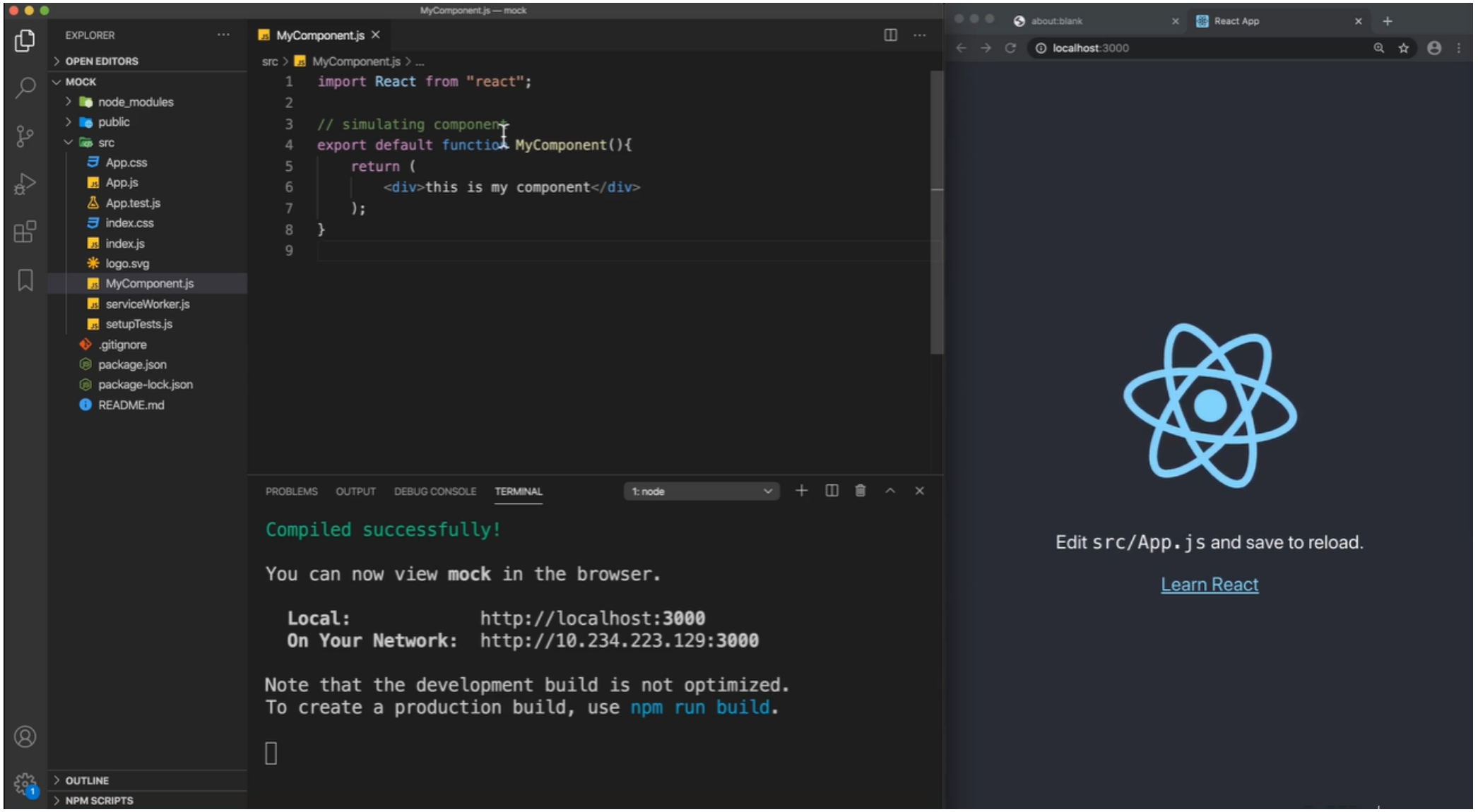
Mock A Dependency (3/11)



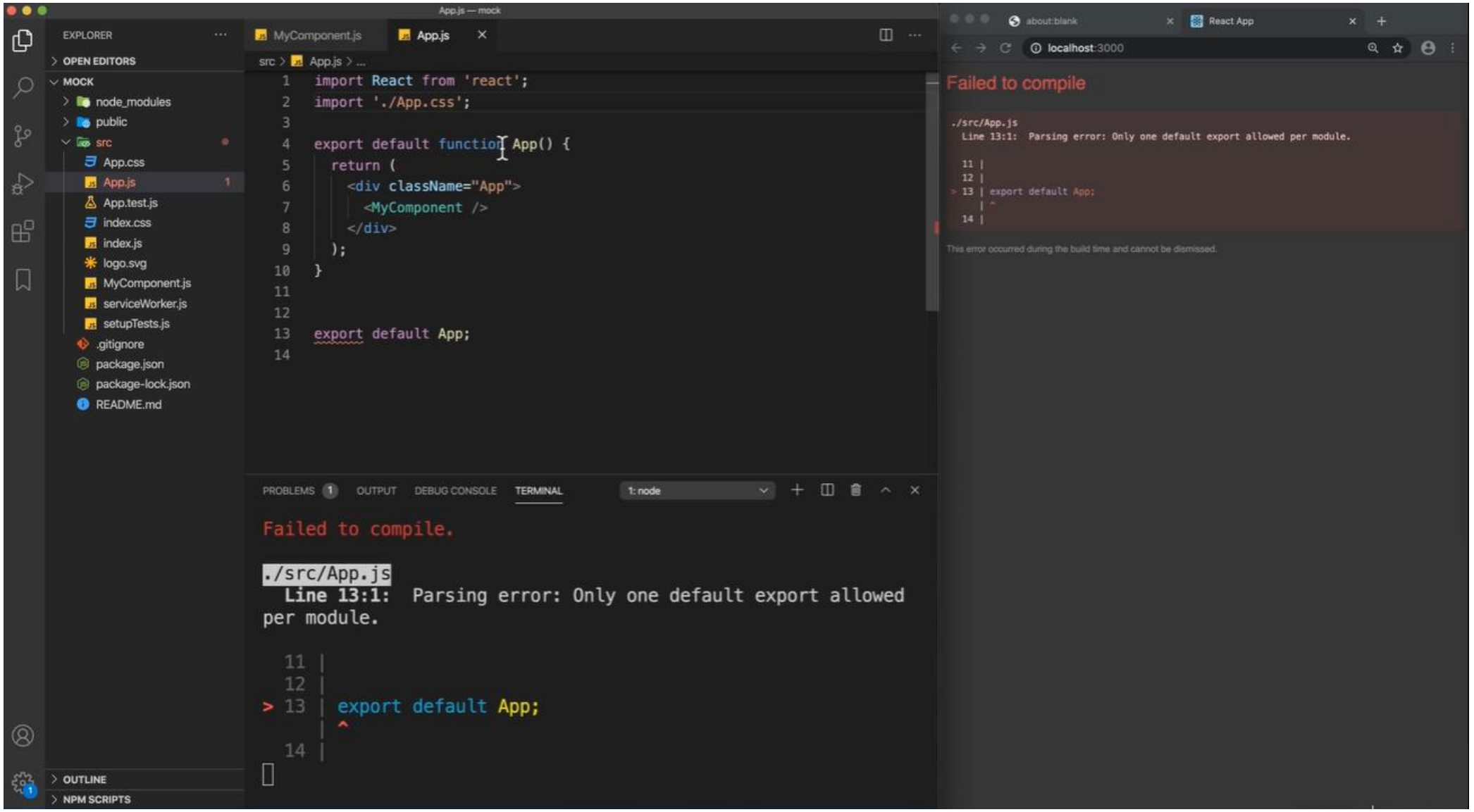
Mock A Dependency (4/11)



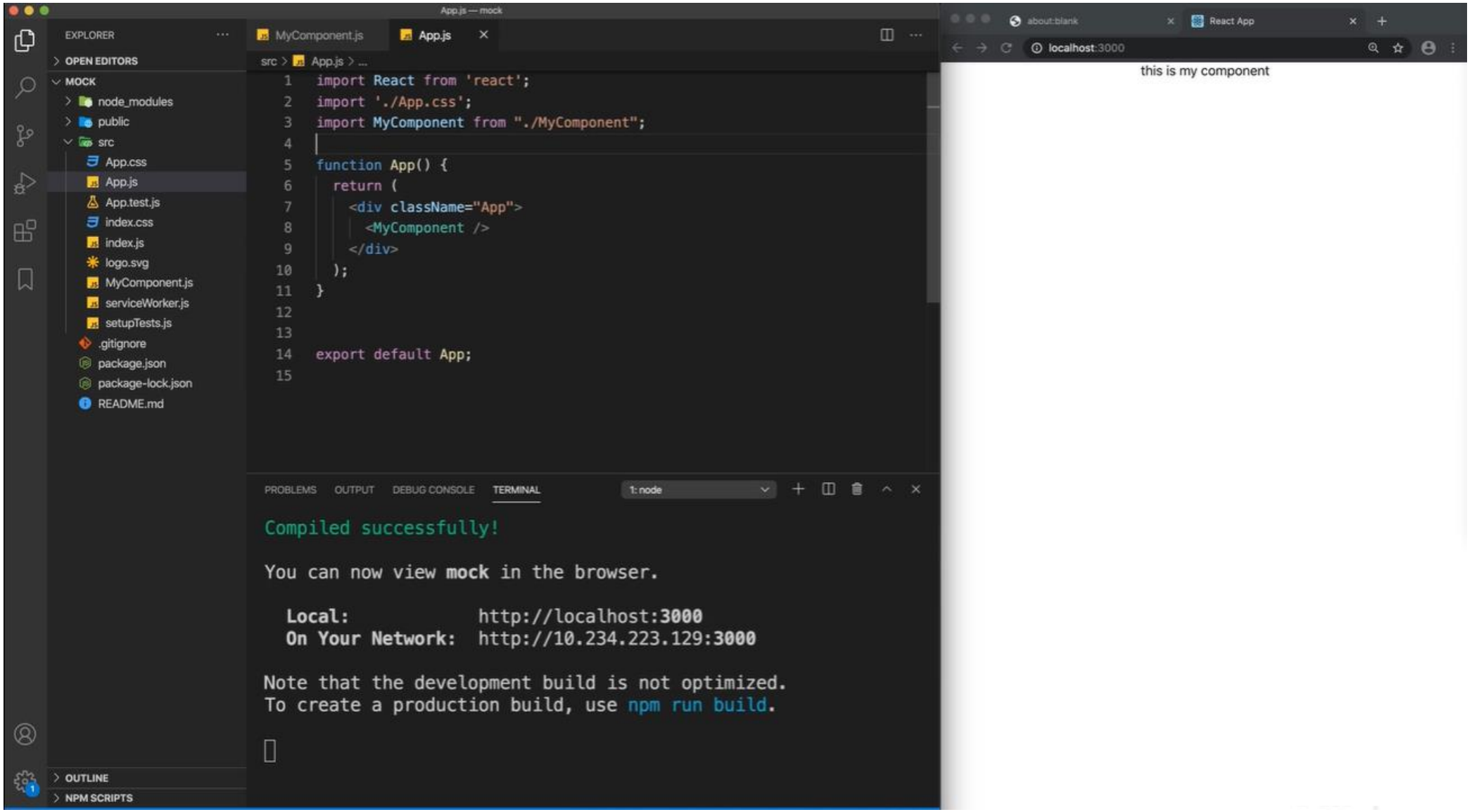
Mock A Dependency (5/11)



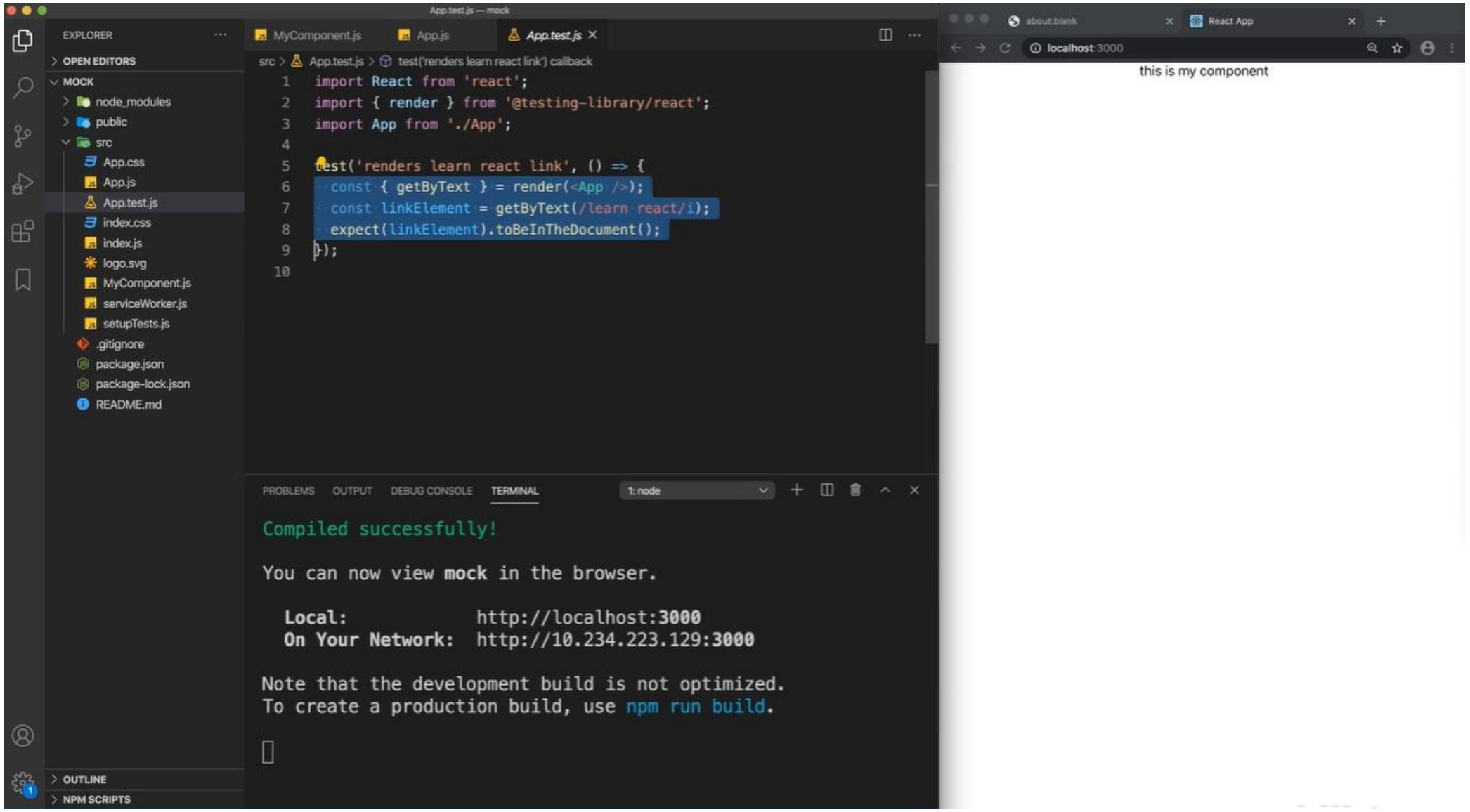
Mock A Dependency (6/11)



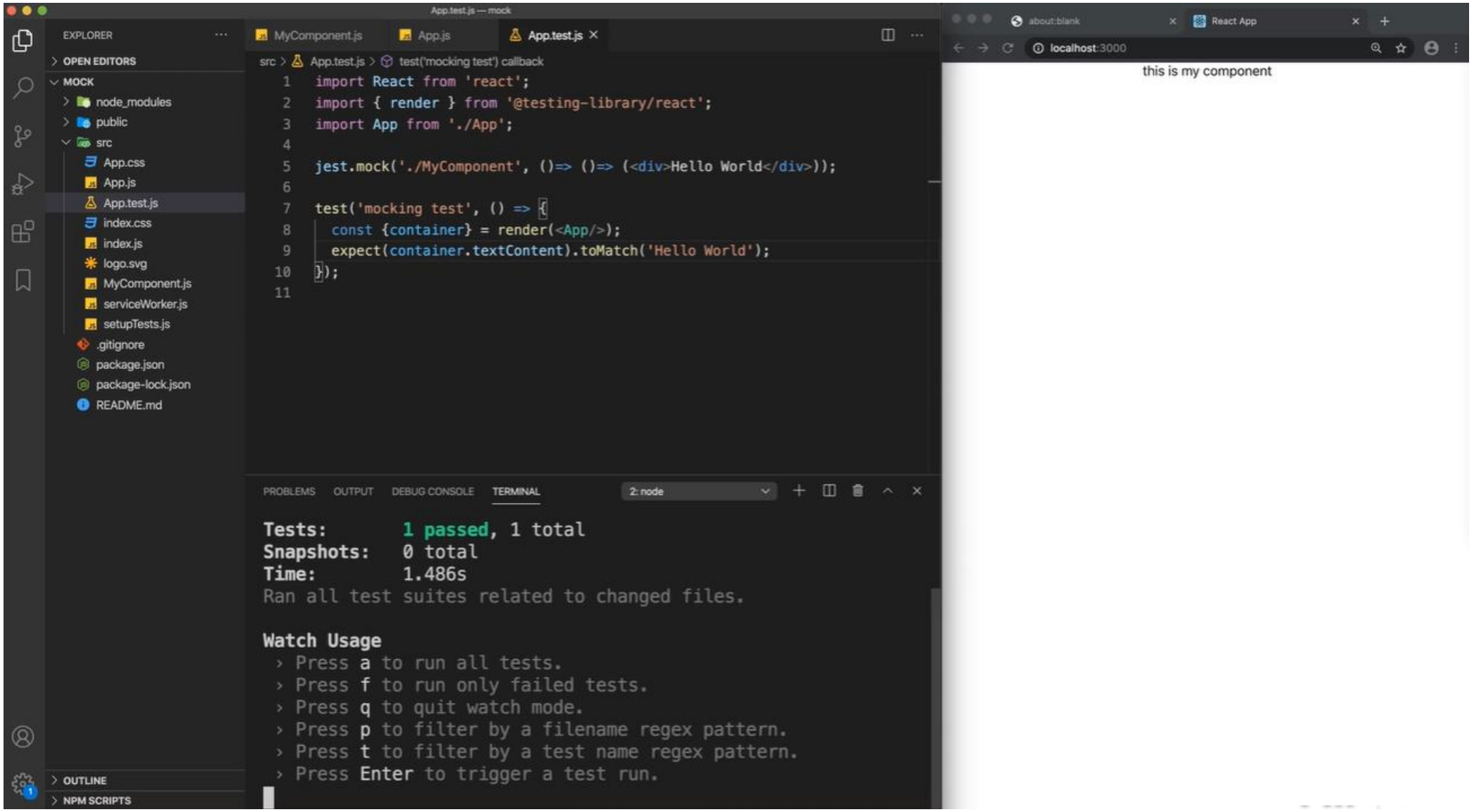
Mock A Dependency (7/11)



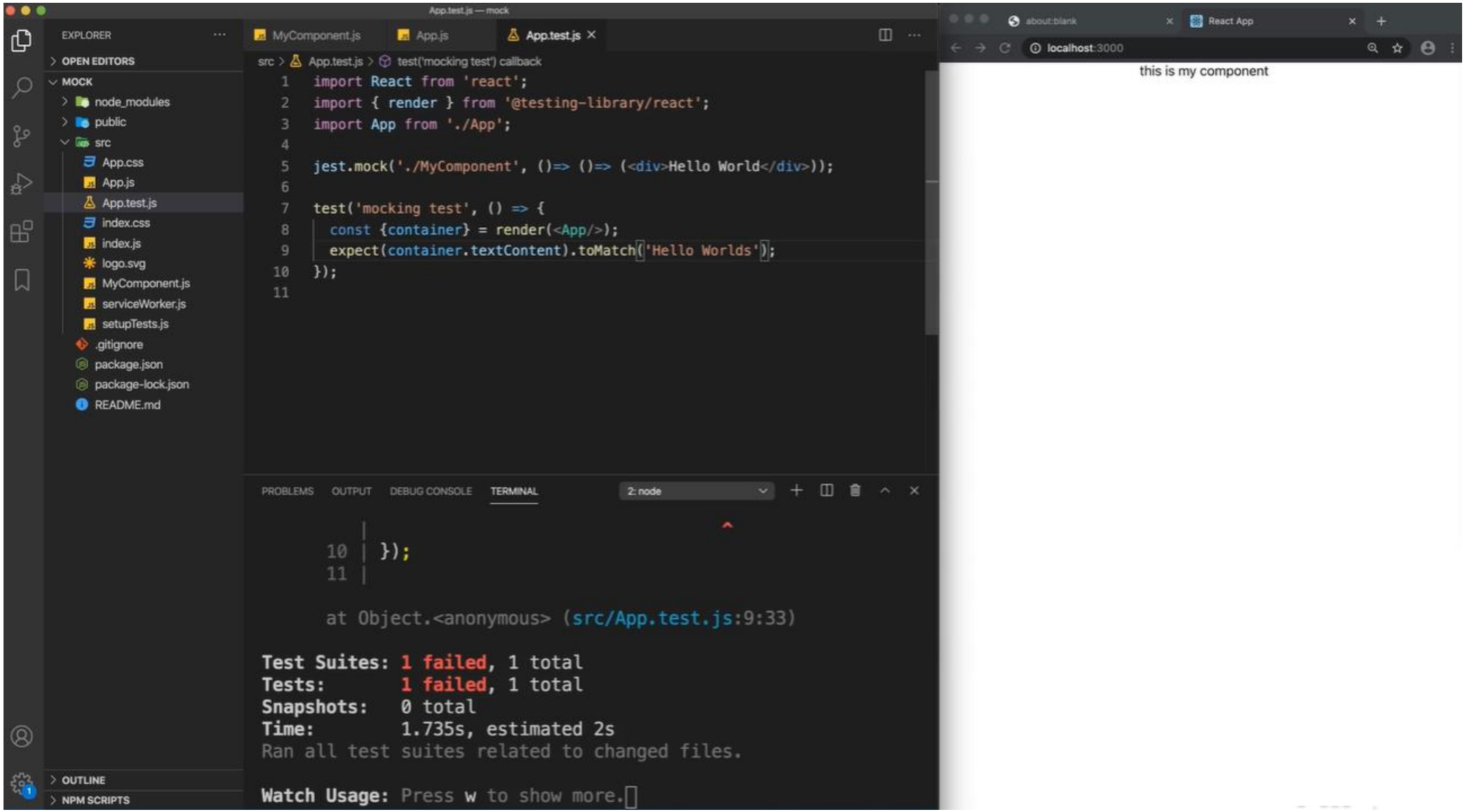
Mock A Dependency (8/11)



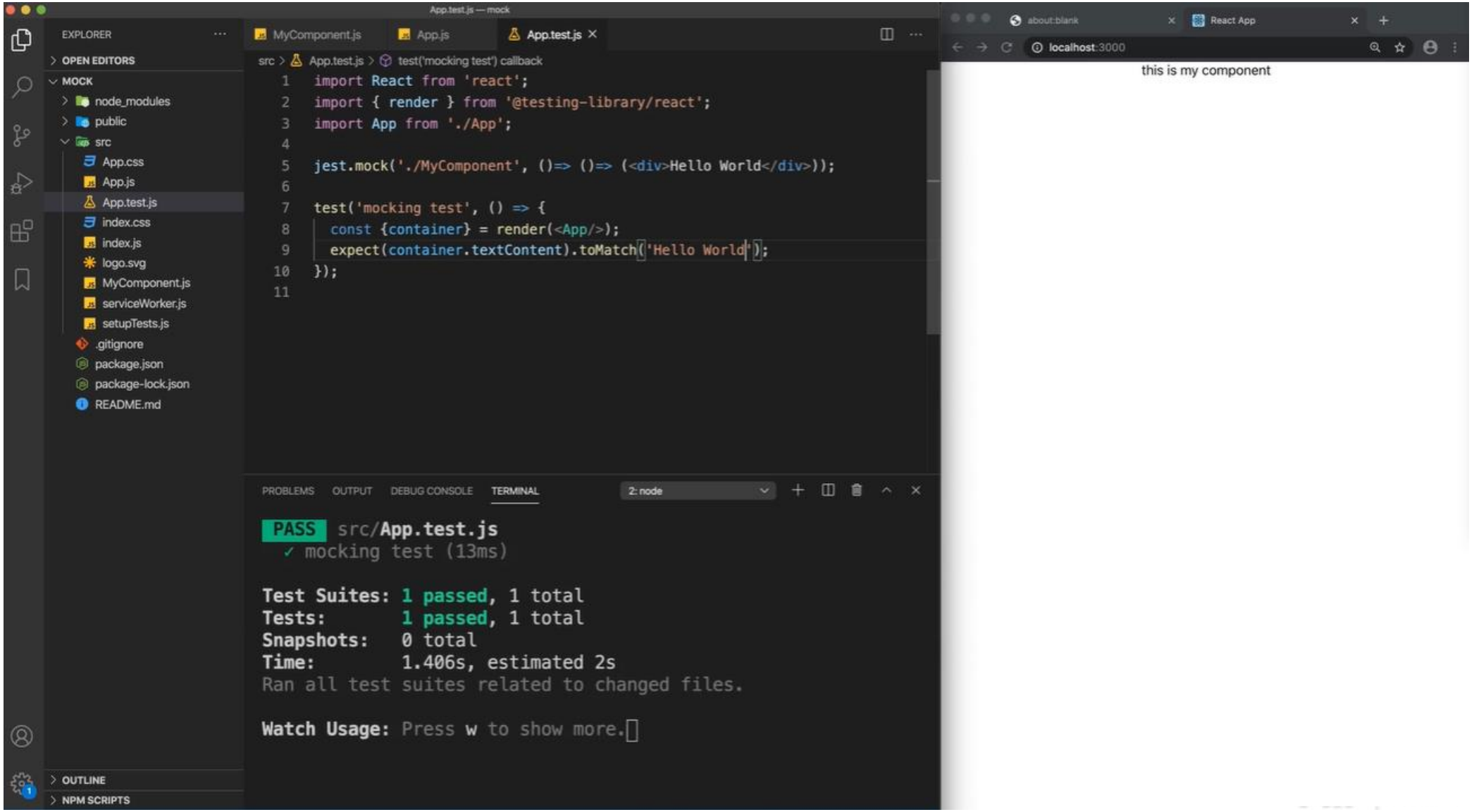
Mock A Dependency (9/11)



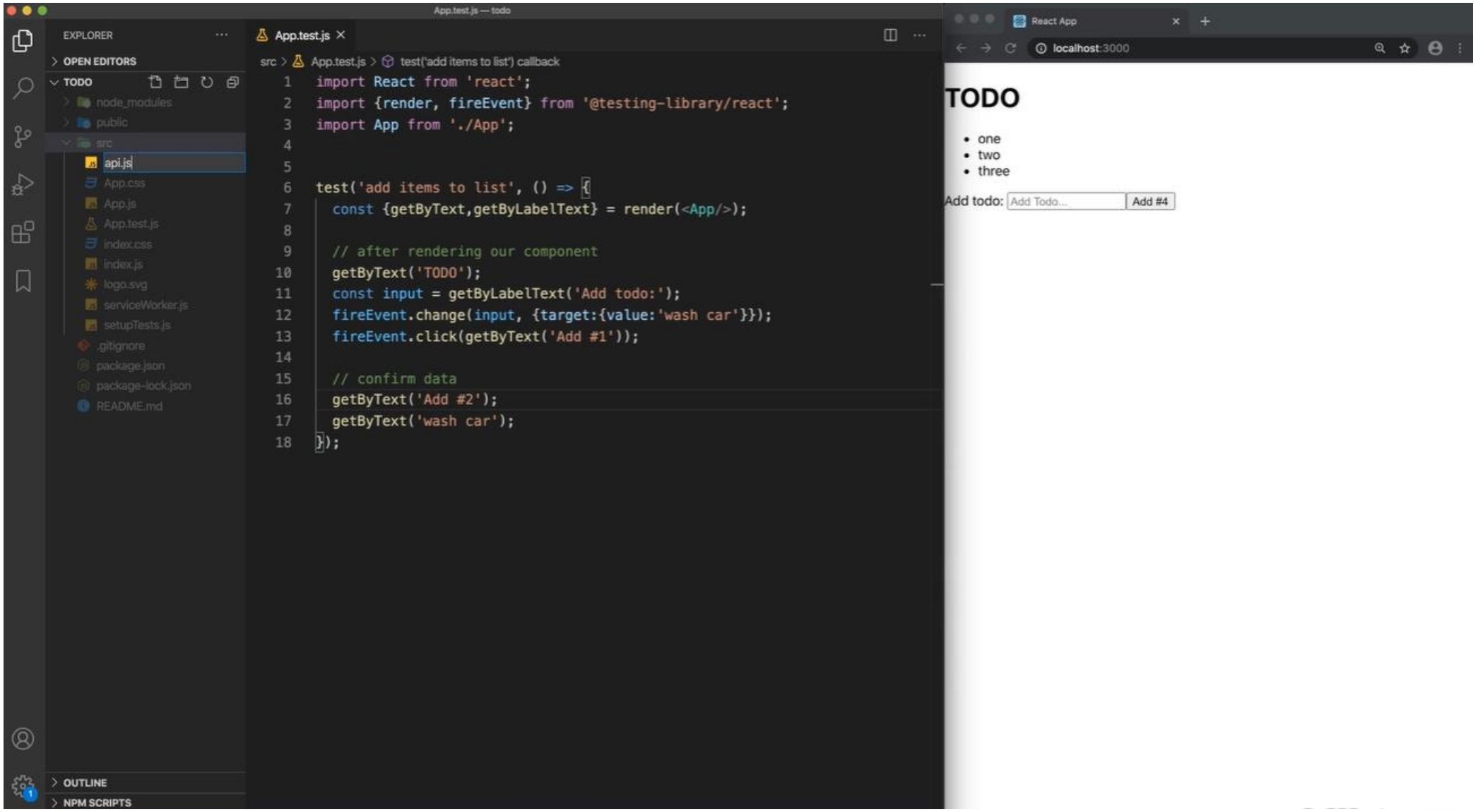
Mock A Dependency (10/11)



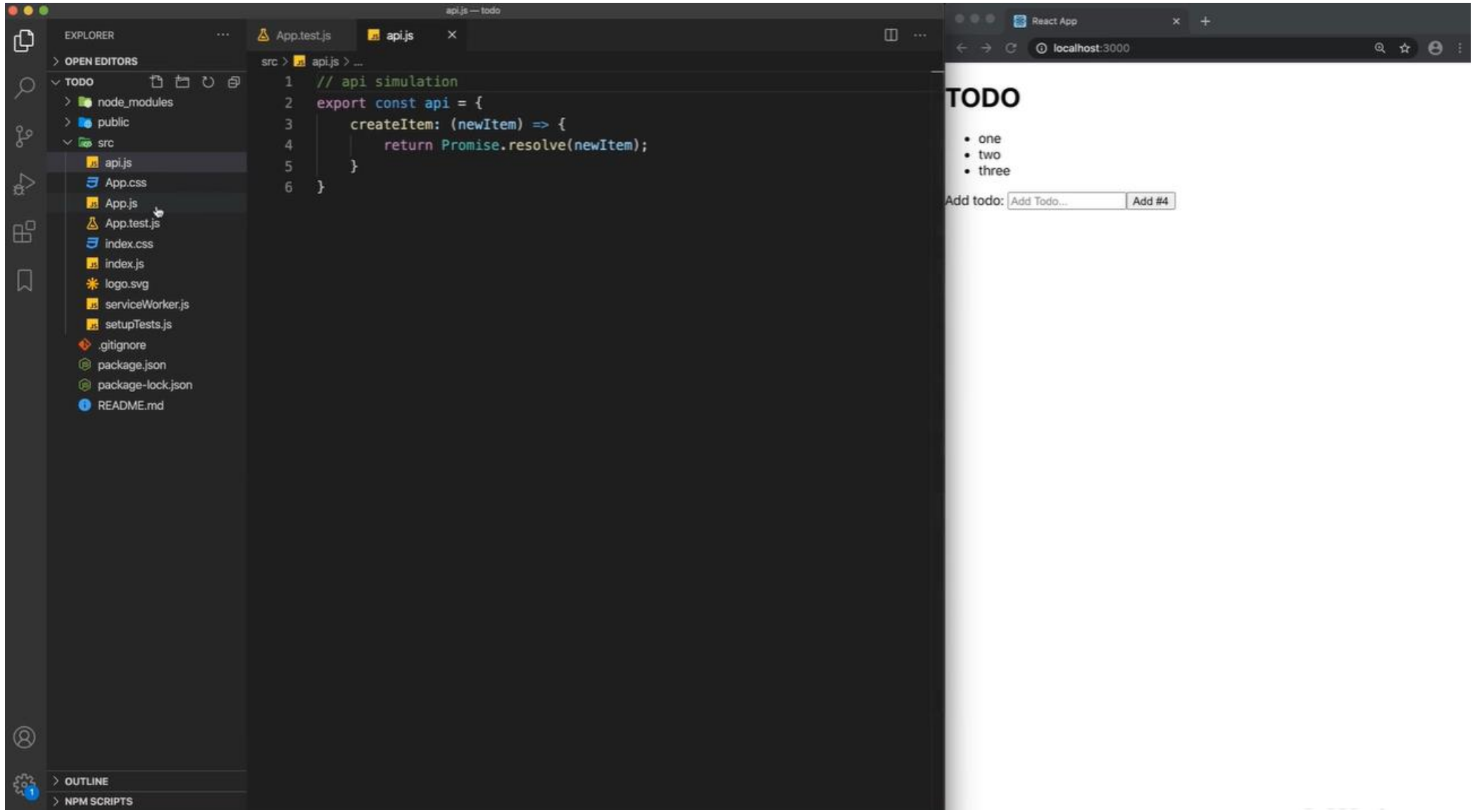
Mock A Dependency (11/11)



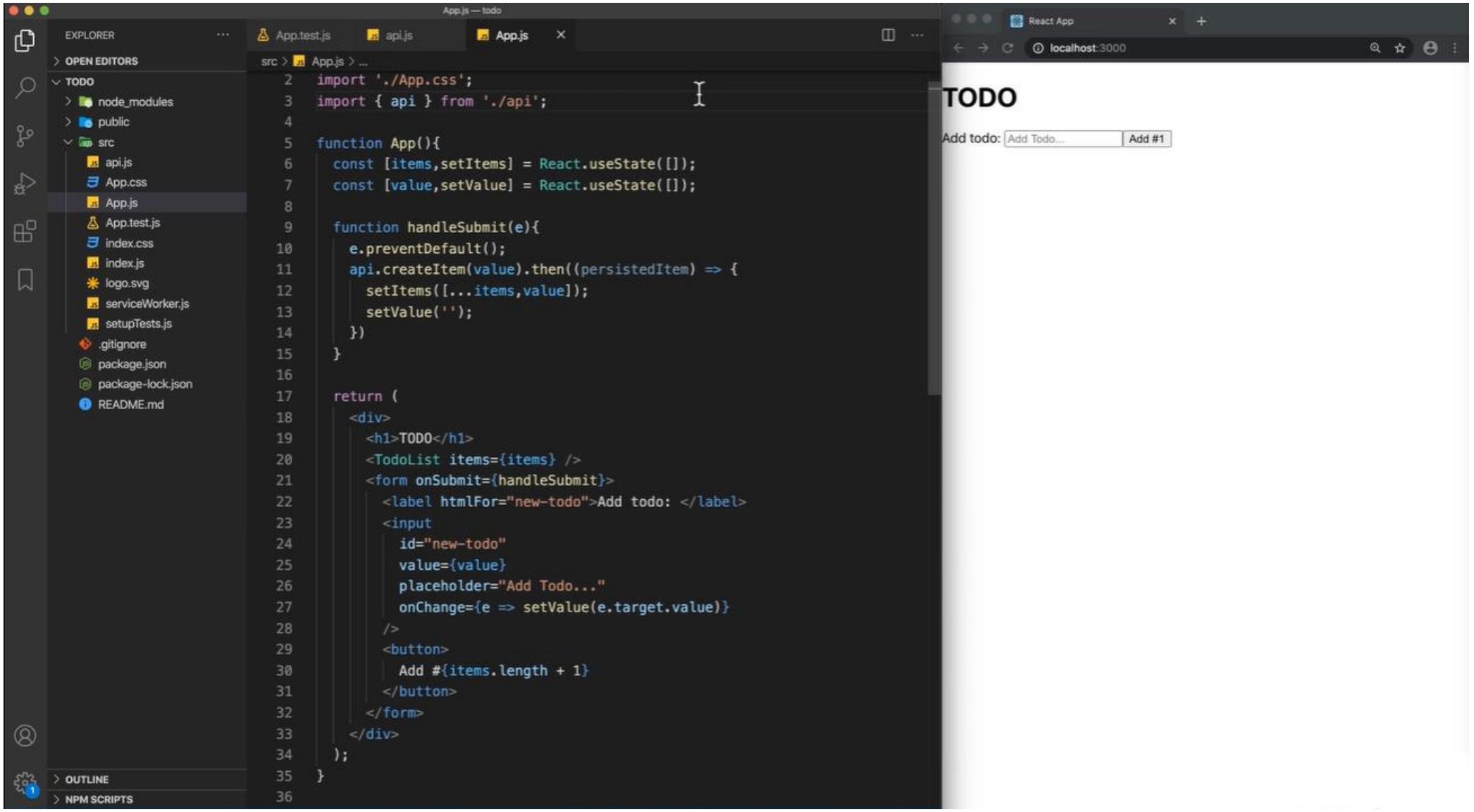
Mock ToDo Application API (1/8)



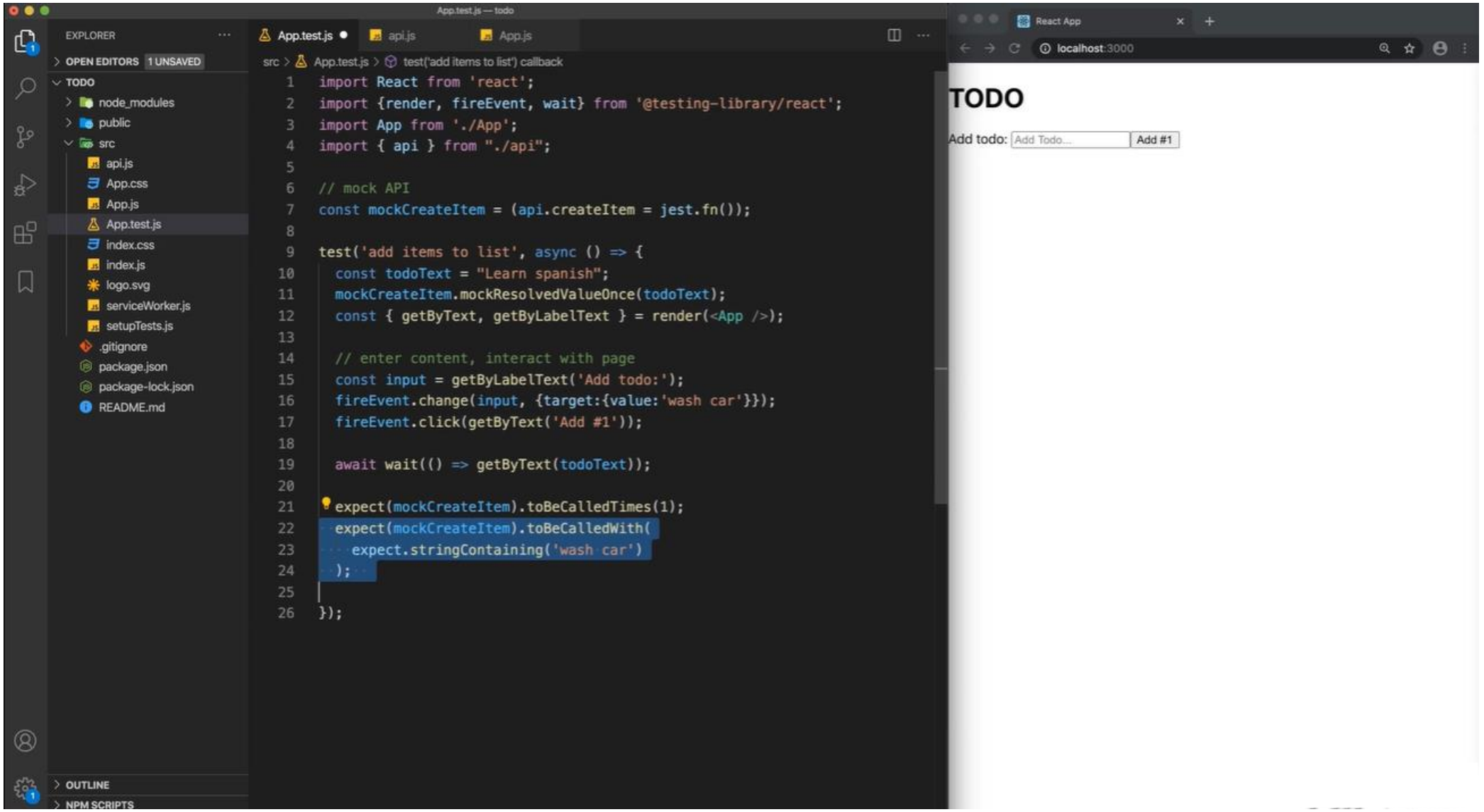
Mock ToDo Application API (2/8)



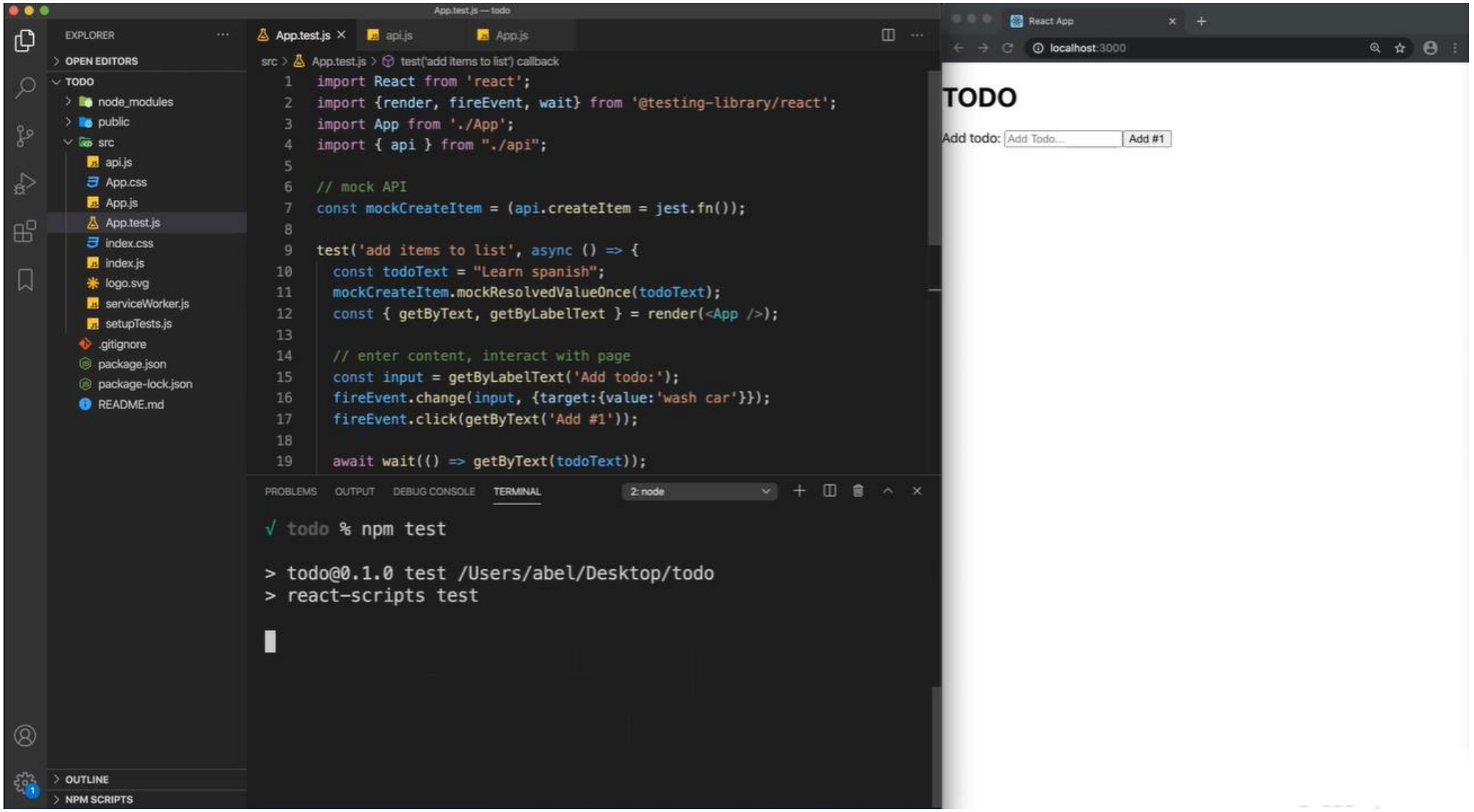
Mock ToDo Application API (3/8)



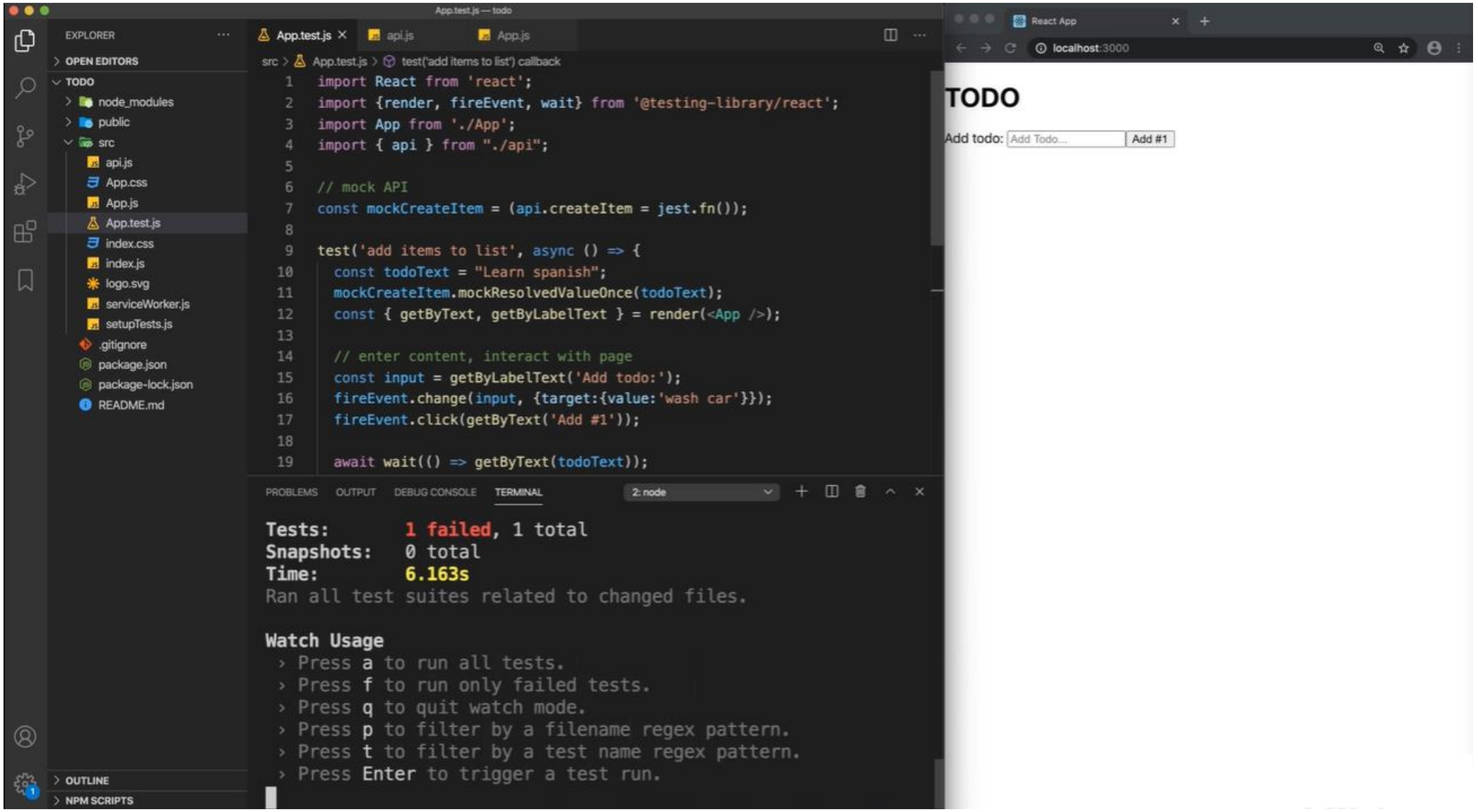
Mock ToDo Application API (4/8)



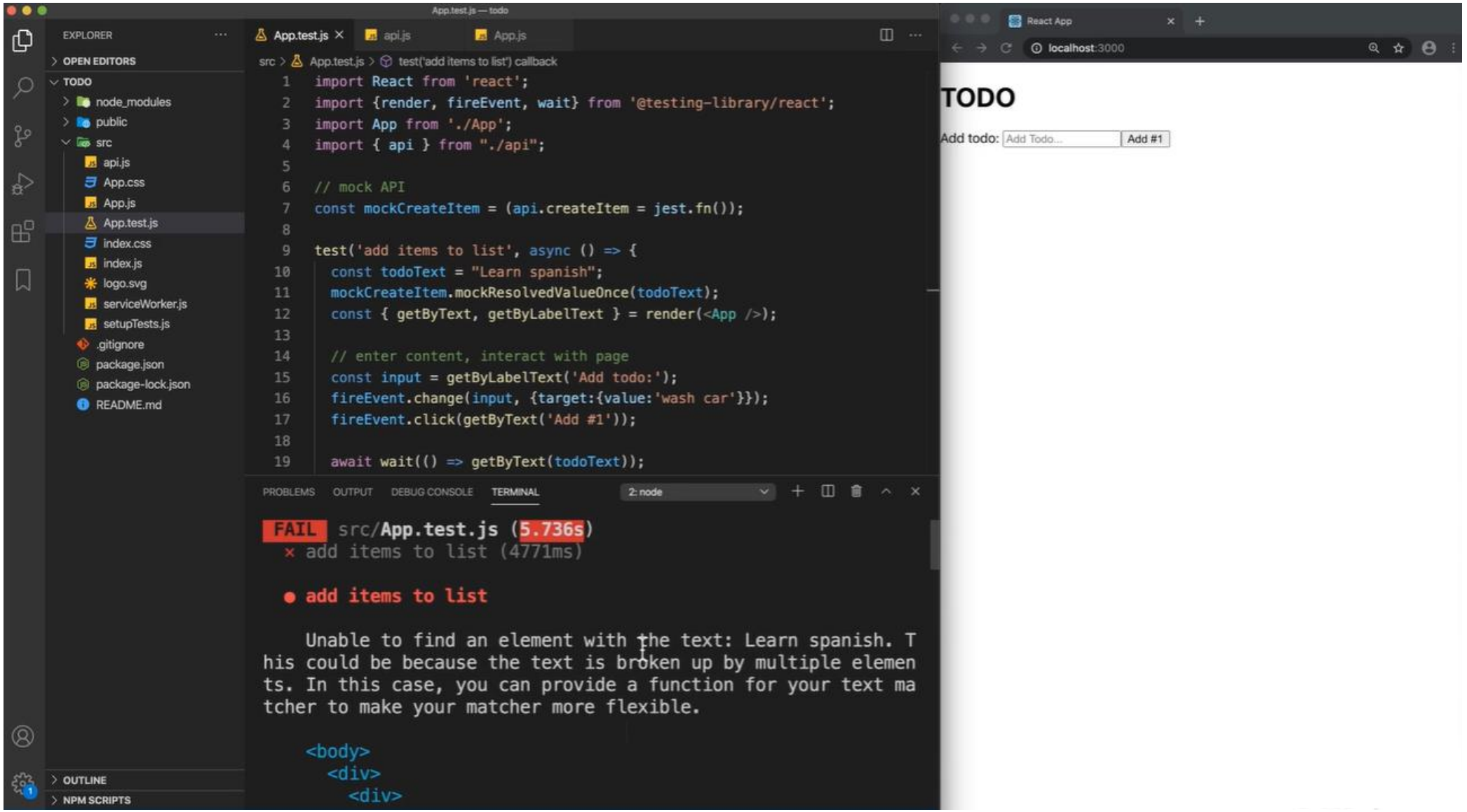
Mock ToDo Application API (5/8)



Mock ToDo Application API (6/8)



Mock ToDo Application API (7/8)



Mock ToDo Application API (8/8)