

# Chapter 1: Why Redux?

The screenshot shows a 'todos' application interface on the left and its Redux state in DevTools on the right.

**Application Interface:**

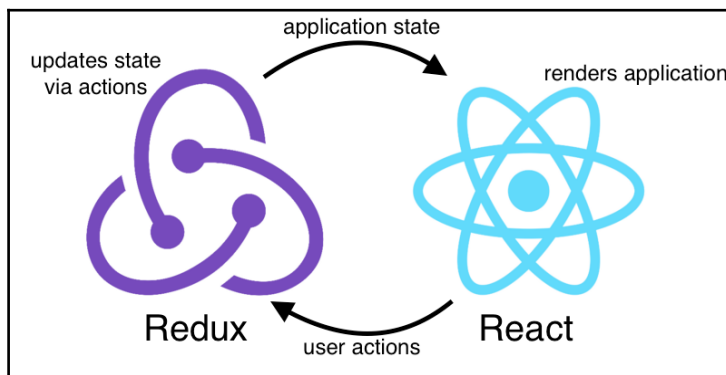
- Header: todos
- Input:  What needs to be done?
- Item 1:  Finish reading "Learning Redux" book
- Item 2:  Use Redux
- Footer: 1 item left | **All** | Active | Completed | Clear completed

**Redux DevTools State:**

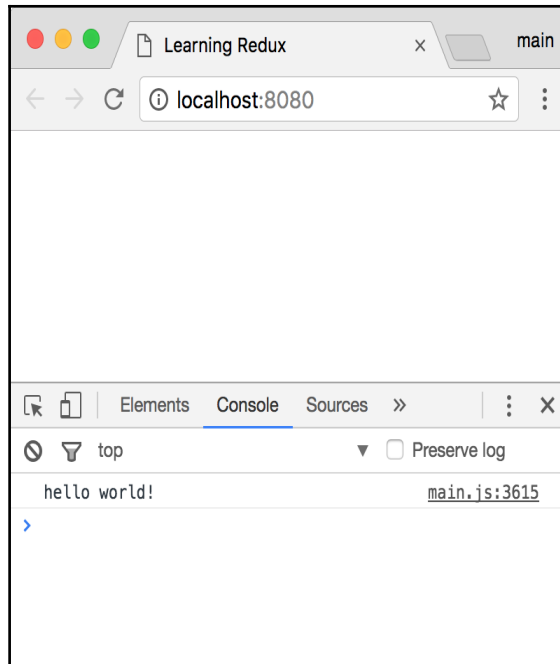
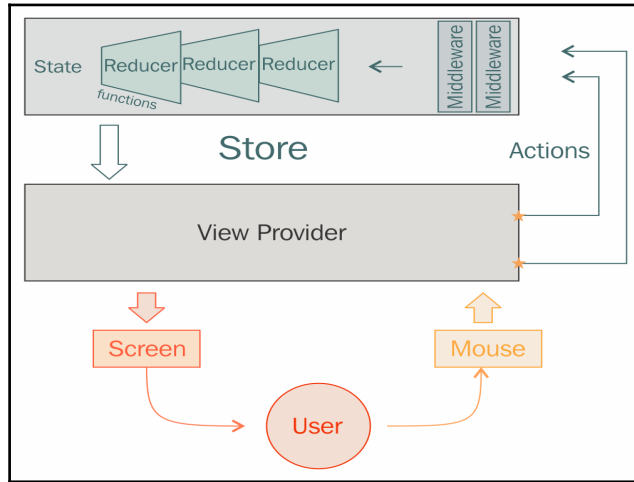
- Buttons: Commit, Rollback, Reset
- MARK\_TODO: `disable`
- State: 

```
root: {} 2 keys
  type: "MARK_TODO"
  id: 0
```
- todos.1.marked: `false true`
- ADD\_TODO: `disable`
- State: 

```
root: {} 2 keys
  type: "ADD_TODO"
  text: "Finish reading \"Learning Redux\" book"
```
- todos.0.text: `"Use-Redux" "Finish reading \\\"Learning Redux\\\" book"`
- todos.0.id: `0 1`
- todos.1: `undefined {"text": "Use Redux", "marked": false, "id": 0}`
- Footer: @@INIT | `disable`



# Chapter 2: Implementing the Elements of Redux



```
▼ Object {type: "CREATE_POST", user: "dan", text: "New post"} ⓘ  
  text: "New post"  
  type: "CREATE_POST"  
  user: "dan"
```

```
state changed:  
▼ Object {posts: Array(1), filter: "all"}  
  filter: "all"  
  ▼ posts: Array(1)  
    ▼ 0: Object  
      text: "hello world"  
      user: "dan"
```

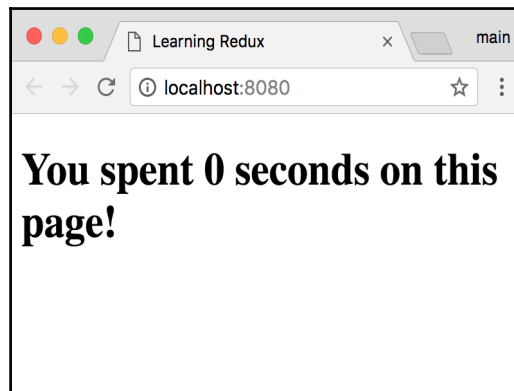
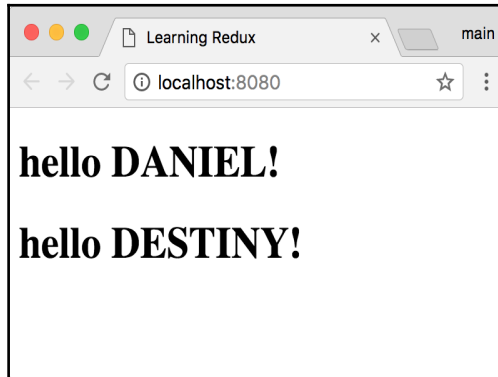
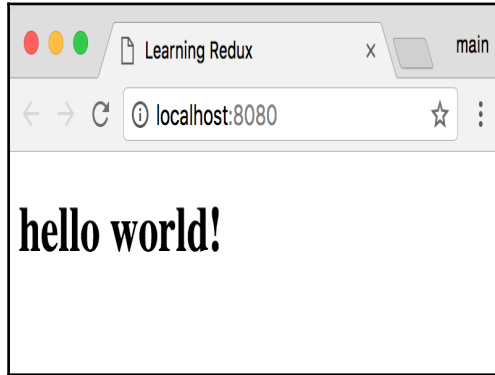
The screenshot shows a web browser window titled "Learning Redux" at localhost:8080. The page content displays a list of two posts:

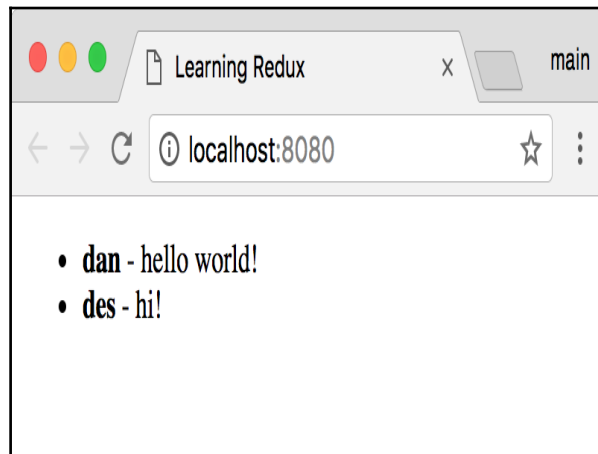
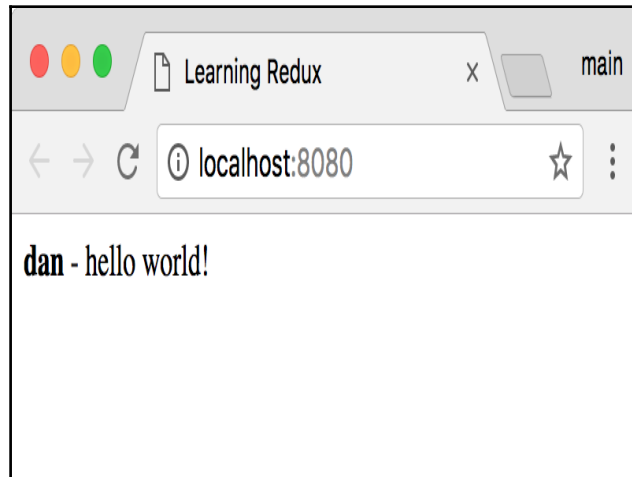
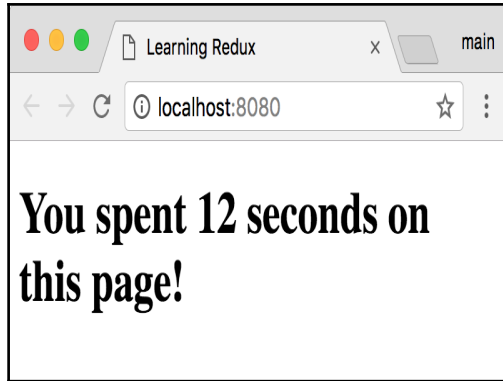
- dan - hello world!
- des - second post

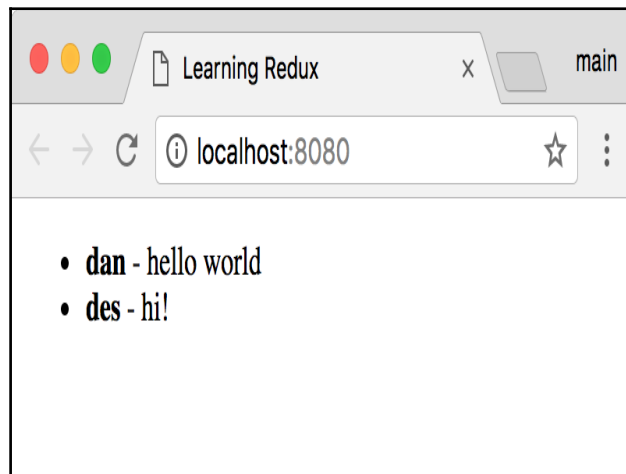
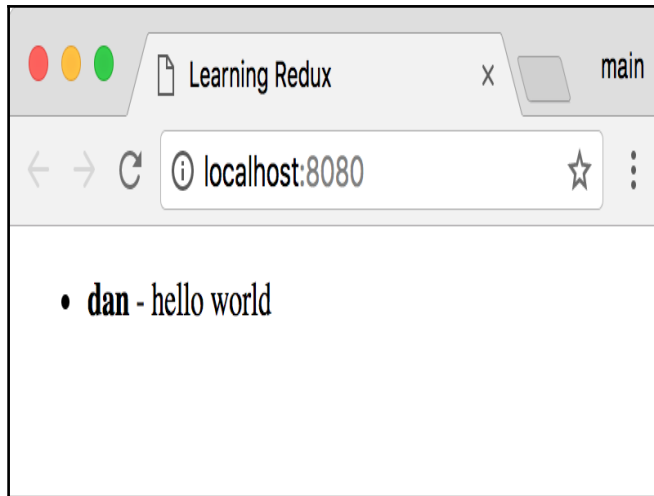
Below the browser window is the Redux DevTools console. The console shows three log entries, all from main.js:4143:

```
state changed:  
▶ {posts: Array(1), filter: "all"}  
state changed:  
▶ {posts: Array(2), filter: "all"}  
state changed:  
▶ {posts: Array(2), filter: "all"}  
>
```

# Chapter 3: Combining Redux with React

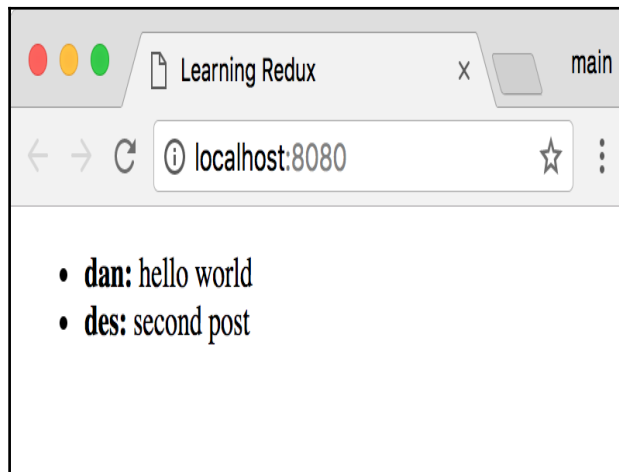
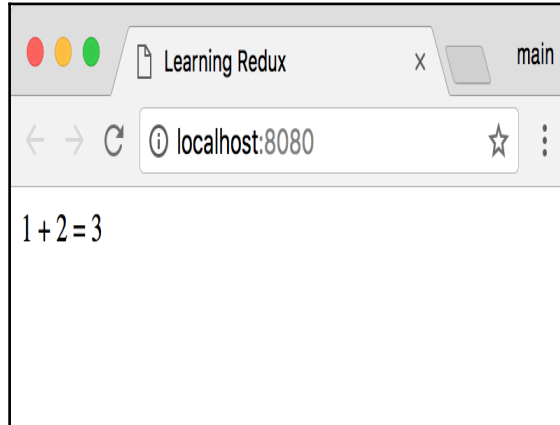




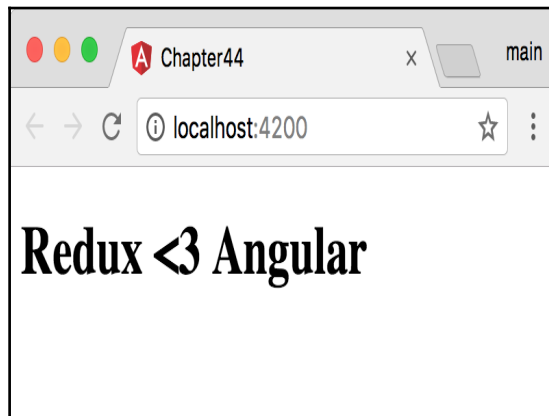
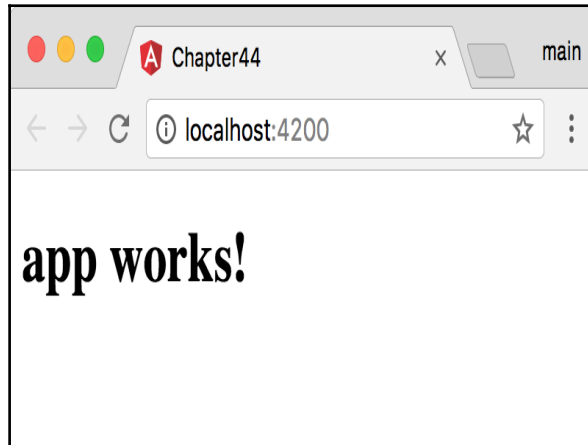
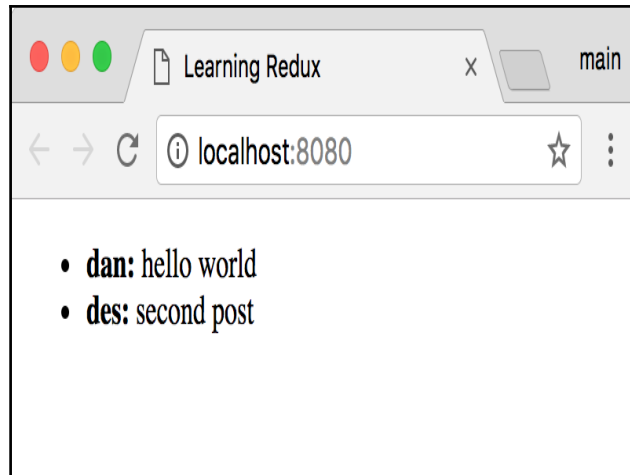




# Chapter 4: Combining Redux with Angular









# Chapter 5: Debugging a Redux Application

The screenshot shows a web browser window titled "Learning Redux" at localhost:8080. The page displays "React/Redux blog app" with a "welcome - test - all posts" link. Two blog posts are listed: "First post" by @dan (Daniel Bugl) and "Another test" by @des (Destiny). On the right, the Redux DevTools interface is open, showing the Redux state and an action. The state is an object with three keys: users (0 items), posts (0 items), and filter (false). The action is an object with two keys: username ("dan") and realname ("Daniel Bugl").

```
state: {} 3 keys
  users: [] 0 items
  posts: [] 0 items
  filter: false

CREATE_USER

action: {} 2 keys
  username: "dan"
  realname: "Daniel Bugl"

state: {} 3 keys
  users: [] 1 item
  posts: [] 0 items
  filter: false

CREATE_USER

action: {} 2 keys
  username: "des"
```

The screenshot shows the same web browser window as above, but the Redux DevTools interface is now closed. The page content remains the same, but the timestamps for the blog posts have updated to Saturday, April 29, 2017, at 10:58:15 GMT. The Redux DevTools interface is now open at the bottom of the browser window, showing the Redux state and an action. The state is an object with three keys: users (0 items), posts (0 items), and filter (false). The action is an object with two keys: username ("des") and realname ("Daniel Bugl").

```
state: {} 3 keys
  users: [] 0 items
  posts: [] 0 items
  filter: false

action: {} 2 keys
  username: "des"
  realname: "Daniel Bugl"
```

Learning Redux x main  
localhost:8080

## React/Redux blog

[welcome - test - all\\_posts](#)

- **First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bug!)  
(Created at: Mon, 01 May 2017 11:20:48 GMT, Updated at: Mon, 01 May 2017 11:20:48 GMT)
- **Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Mon, 01 May 2017 11:20:48 GMT, Updated at: Mon, 01 May 2017 11:20:48 GMT)

Reset Revert Sweep Commit

@@INIT

state: {} 3 keys  
 users: [] 0 items  
 posts: [] 0 items  
 filter: false

CREATE\_USER

action: {} 2 keys

Elements Console Sources Network Performance Memory Application Security Audits HTTPS Everywhere JWT React

top Filter Info

initial state: ▶ Object {users: Array(2), posts: Array(2), filter: false} index.is:31  
 [WDS] Hot Module Replacement enabled. client?cd17:41  
 [WDS] App updated. Recompiling... client?cd17:41  
 [WDS] App hot update... client?cd17:41  
 [HMR] Checking for updates on the server... dev-server.js:45  
 initial state: ▶ Object {users: Array(2), posts: Array(2), filter: false} index.is:31  
 [HMR] Updated modules: log-apply-result.js:20  
 [HMR] - ./src/components/App.jsx log-apply-result.js:22  
 [HMR] - ./src/index.js log-apply-result.js:22  
 [HMR] App is up to date. dev-server.js:27

Learning Redux x main  
localhost:8080

## React/Redux blog app

[test - all\\_posts](#)

- **Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Sun, 13 Aug 2017 00:06:50 GMT, Updated at: Sun, 13 Aug 2017 00:06:50 GMT)

Reset Revert Sweep Commit

filter: false

CREATE\_USER

action: {} 2 keys  
 username: "des"  
 realname: "Destiny"

state: {} 3 keys  
 users: [] 2 items  
 posts: [] 0 items  
 filter: false

CREATE\_POST

CREATE\_POST

action: {} 1 key  
 post: {} 4 keys

state: {} 3 keys  
 users: [] 2 items  
 posts: [] 1 item

Learning Redux | localhost:8080 | main

## React/Redux blog app

[welcome](#) - [test](#) - [all posts](#)

- First post:** Hello world! This is the first blog post. ~ @dan (*Daniel Bugl*)  
(Created at: Sun, 13 Aug 2017 00:13:59 GMT, Updated at: Sun, 13 Aug 2017 00:13:59 GMT)
- Another test:** This is another test blog post. ~ @des (*Destiny*)  
(Created at: Sun, 13 Aug 2017 00:13:59 GMT, Updated at: Sun, 13 Aug 2017 00:13:59 GMT)

filter...

@@@INIT	8:13:59.46
CREATE_USER	+00:00.00
CREATE_USER	+00:00.00
CREATE_POST	+00:00.00
CREATE_POST	+00:00.00

Diff

▼ posts (pin)

1 (pin): {user: 'des', tit...9462}

Learning Redux | localhost:8080 | main

## React/Redux blog

[welcome](#) - [test](#) - [all posts](#)

- First post:** Hello world! This is the first blog post. ~ @dan (*Daniel Bugl*)  
(Created at: Mon, 01 May 2017 15:45:39 GMT, Updated at: Mon, 01 May 2017 15:45:39 GMT)
- Another test:** This is another test blog post. ~ @des (*Destiny*)  
(Created at: Mon, 01 May 2017 15:45:39 GMT, Updated at: Mon, 01 May 2017 15:45:39 GMT)

filter...

@@@INIT	5:45:39.45
CREATE_USER	+00:00.00
CREATE_USER	+00:00.00
CREATE_POST	+00:00.00
CREATE_POST	+00:00.00

State > posts

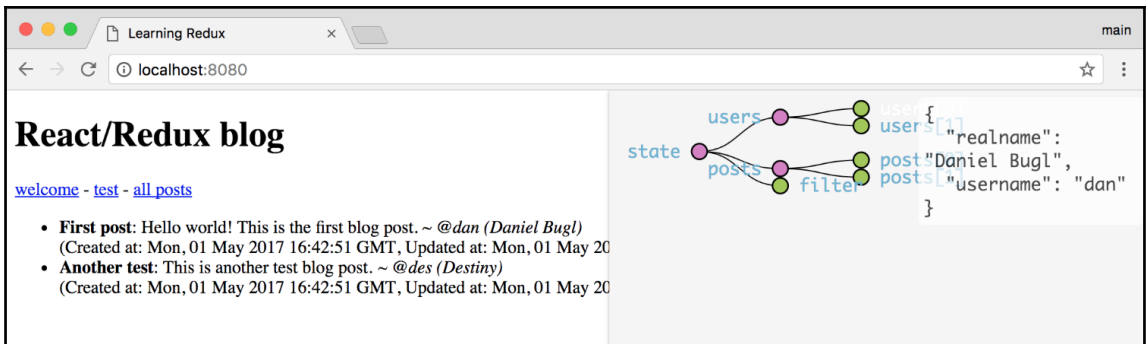
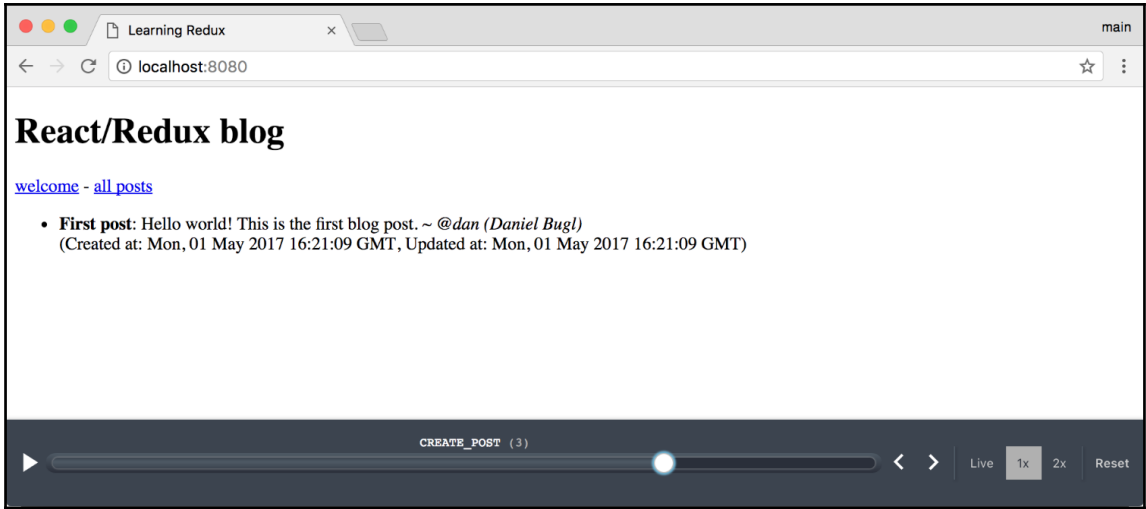
▼ posts (pin)

▼ 0 (pin)

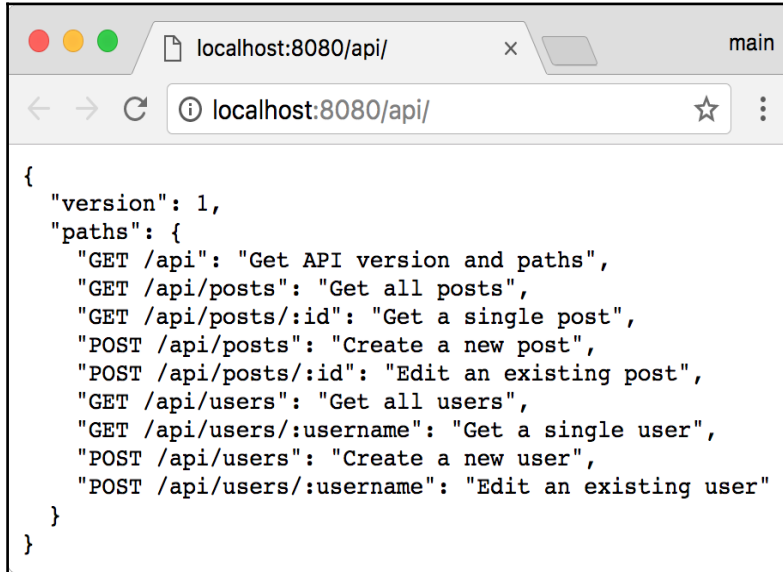
- user (pin): "dan"
- title (pin): "First post"
- text (pin): "Hello world! This is the first blog post."
- category (pin): "welcome"
- created (pin): 1493653539454
- updated (pin): 1493653539454

▼ 1 (pin)

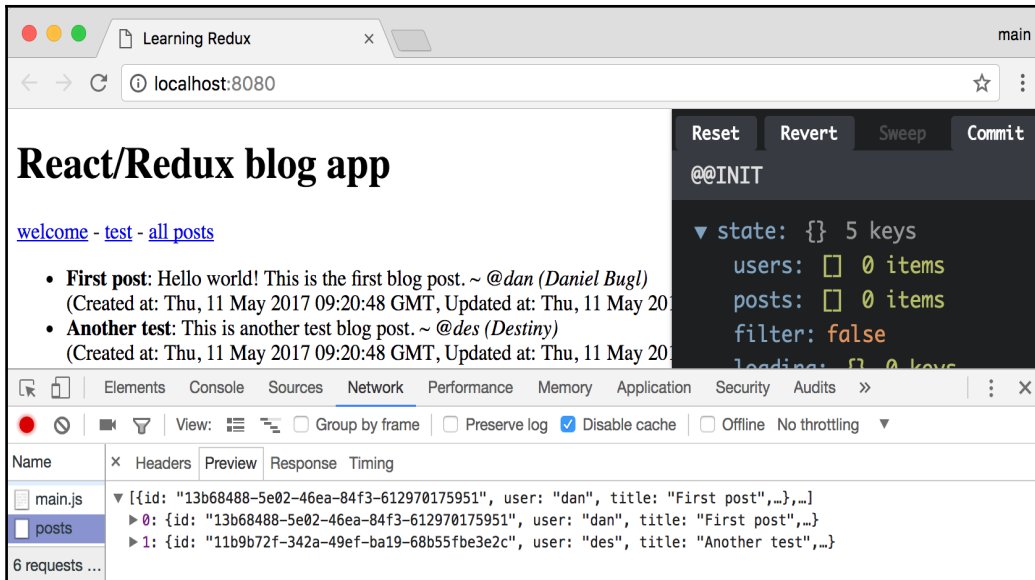
- user (pin): "des"
- title (pin): "Another test"



# Chapter 6: Interfacing with APIs



```
{
  "version": 1,
  "paths": {
    "GET /api": "Get API version and paths",
    "GET /api/posts": "Get all posts",
    "GET /api/posts/:id": "Get a single post",
    "POST /api/posts": "Create a new post",
    "POST /api/posts/:id": "Edit an existing post",
    "GET /api/users": "Get all users",
    "GET /api/users/:username": "Get a single user",
    "POST /api/users": "Create a new user",
    "POST /api/users/:username": "Edit an existing user"
  }
}
```



**React/Redux blog app**

[welcome - test - all posts](#)

- **First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- **Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)

Redux DevTools state:

```
state: {} 5 keys
  users: [] 0 items
  posts: [] 0 items
  filter: false
  loading: false
```

Network tab:

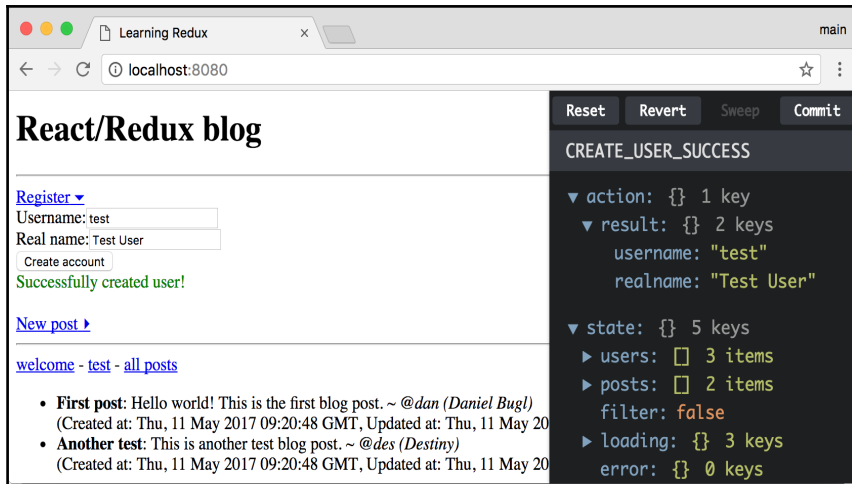
Name	Headers	Preview	Response	Timing
main.js			[[{"id": "13b68488-5e02-46ea-84f3-612970175951", user: "dan", title: "First post",...},...]	
posts			▶ 0: {"id": "13b68488-5e02-46ea-84f3-612970175951", user: "dan", title: "First post",...} ▶ 1: {"id": "11b9b72f-342a-49ef-ba19-68b55fbc3e2c", user: "des", title: "Another test",...}	

```
prod mode: serving client static assets
serving frontend on: http://localhost:8080/
serving backend on: http://localhost:8080/api/
GET / 200 10.585 ms - 192
GET /main.js 200 2.858 ms - 1230744
GET /api/posts 200 5.393 ms - 487
GET /api/users/dan 200 3.146 ms - 52
GET /api/users/des 200 1.274 ms - 48
```

The screenshot shows a web browser window titled "Learning Redux" at the URL "localhost:8080". The page content includes the heading "React/Redux blog" and a link "all posts" with the text "Loading...". On the right side, a Redux DevTools interface is visible, showing a sequence of actions. The current action is "FETCH\_POSTS\_REQUEST", which updates the state to: `{ users: [], posts: [], filter: false, loading: true, error: null }`. The state keys are: `users: [] 0 items`, `posts: [] 0 items`, `filter: false`, `loading: {} 1 key`, and `error: {} 0 keys`. The next action in the sequence is "FETCH\_POSTS\_SUCCESS".

The screenshot shows the same web browser window as above, but now displaying an error. The "all posts" link is still present, but below it, the text "Error: something went wrong!" is shown in red. The Redux DevTools interface shows a "FETCH\_POSTS\_FAILURE" action. This action updates the state to include an error: `{ action: 'FETCH_POSTS_FAILURE', error: Error(), state: { users: [], posts: [], filter: false, loading: true, error: Error() } }`. The state keys are: `action: {} 1 key`, `error: Error() 2 keys`, `state: {} 5 keys` (with sub-keys: `users: [] 0 items`, `posts: [] 0 items`, `filter: false`, `loading: {} 1 key`, and `error: Error() 2 keys`).





React/Redux blog

Register ▾  
 Username: test  
 Real name: Test User  
 Create account  
 Successfully created user!

New post ▾

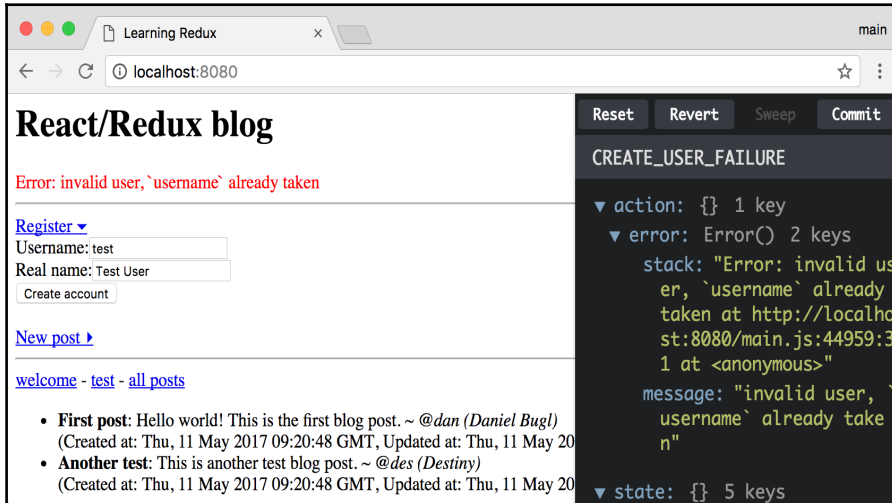
welcome - test - all posts

- **First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
 (Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- **Another test:** This is another test blog post. ~ @des (Destiny)  
 (Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)

Reset Revert Sweep Commit

CREATE\_USER\_SUCCESS

- ▼ action: {} 1 key
- ▼ result: {} 2 keys
  - username: "test"
  - realname: "Test User"
- ▼ state: {} 5 keys
  - ▶ users: [] 3 items
  - ▶ posts: [] 2 items
  - filter: false
  - ▶ loading: {} 3 keys
  - error: {} 0 keys



React/Redux blog

Error: invalid user, `username` already taken

Register ▾  
 Username: test  
 Real name: Test User  
 Create account

New post ▾

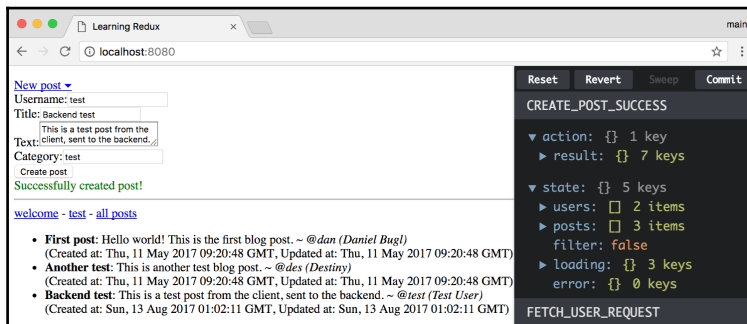
welcome - test - all posts

- **First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
 (Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- **Another test:** This is another test blog post. ~ @des (Destiny)  
 (Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)

Reset Revert Sweep Commit

CREATE\_USER\_FAILURE

- ▼ action: {} 1 key
- ▼ error: Error() 2 keys
  - stack: "Error: invalid user, `username` already taken at http://localhost:8080/main.js:44959:31 at <anonymous>"
  - message: "invalid user, `username` already taken"
- ▼ state: {} 5 keys



React/Redux blog

New post ▾  
 Username: test  
 Title: Backend test  
 Text: This is a test post from the client, sent to the backend.  
 Category: test  
 Create post  
 Successfully created post!

welcome - test - all posts

- **First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
 (Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- **Another test:** This is another test blog post. ~ @des (Destiny)  
 (Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- **Backend test:** This is a test post from the client, sent to the backend. ~ @test (Test User)  
 (Created at: Sun, 13 Aug 2017 01:02:11 GMT, Updated at: Sun, 13 Aug 2017 01:02:11 GMT)

Reset Revert Sweep Commit

CREATE\_POST\_SUCCESS

- ▼ action: {} 1 key
- ▶ result: {} 7 keys
- ▼ state: {} 5 keys
  - ▶ users: [] 2 items
  - ▶ posts: [] 3 items
  - filter: false
  - ▶ loading: {} 3 keys
  - error: {} 0 keys

FETCH\_USER\_REQUEST

Learning Redux x main

localhost:8080

# React/Redux blog

Error: invalid post, specified `user` does not exist

[Register](#)

[New post](#)

Username:

Title:

Text:

Category:

[welcome - test - all posts](#)

- **First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- **Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- **Backend test:** This is a test post from the client, sent to the backend. ~ @test (Test User)  
(Created at: Sun, 13 Aug 2017 01:02:11 GMT, Updated at: Sun, 13 Aug 2017 01:02:11 GMT)

Reset Revert Sweep Commit

CREATE\_POST\_FAILURE

```
▼ action: {} 1 key
▼ error: Error() 2 keys
  stack: "Error: invalid post, specified `user` does not exist at http://localhost:8080/main.js:4495:9:31 at <anonymous>"
  message: "invalid post, specified `user` does not exist"
▼ state: {} 5 keys
  ► users: [] 3 items
  ► posts: [] 3 items
  filter: false
  ► loading: {} 3 keys
```

# Chapter 7: User Authentication

### Encoded

PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiJkYW4iLCJuYm91Ijo1RGFuaWVsIEJ1Z2wiLCJhZG1pbSI6dHJ1ZX0.unKzM4IFTqAYzjTL5SPpWljafhduePjmZAoGVppHAY
```

### Decoded

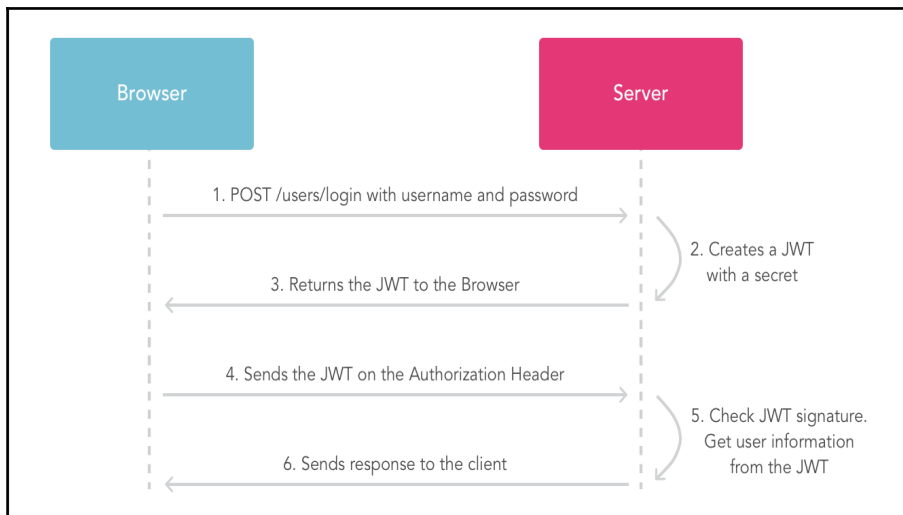
EDIT THE PAYLOAD AND SECRET (ONLY HS256 SUPPORTED)

```
HEADER: ALGORITHM & TOKEN TYPE
{
  "alg": "HS256",
  "typ": "JWT"
}

PAYLOAD: DATA
{
  "sub": "dan",
  "name": "Daniel Bug1",
  "admin": true
}

VERIFY SIGNATURE
HMACSHA256(
  base64UrlEncode(header) + "." +
  base64UrlEncode(payload),
  secret
)  secret base64 encoded
```

🔒 Signature Verified



Learning Redux x main  
localhost:8080

## React/Redux blog

[Register](#) [Login](#)

Username:   
 Password:

Login successful!

[New post](#)

[welcome](#) - [test](#) - [all posts](#)

- First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)

Reset Revert Sweep Commit

LOGIN\_SUCCESS

```

action: {} 1 key
  result: {} 3 keys
state: {} 6 keys
  users: [] 2 items
  posts: [] 2 items
  filter: false
  loading: {} 3 keys
  error: {} 0 keys
  session: {} 3 keys
    username: "dan"
    realname: "Daniel Bugl"
    token: "eyJ0eXAiOiJKV1Qi
  
```

Learning Redux x main  
localhost:8080

## React/Redux blog

Error: invalid username or password

[Register](#) [Login](#)

Username:   
 Password:

[New post](#)

[welcome](#) - [test](#) - [all posts](#)

- First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)

Reset Revert Sweep Commit

LOGIN\_FAILURE

```

action: {} 1 key
  error: Error() 2 keys
    stack: "Error: invalid u
    sername or password at
    http://localhost:8080/
    main.js:44987:31 at <a
    nonymous>"
    message: "invalid userna
    me or password"
state: {} 6 keys
  users: [] 2 items
  posts: [] 2 items
  
```

The screenshot shows a web browser window titled "Learning Redux" at localhost:8080. The page content includes:

- React/Redux blog**
- Logged in as: @dan (Daniel Bugl)
- [New post](#)
- [welcome](#) - [test](#) - [all posts](#)
- First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)

The Redux DevTools panel on the right shows the following state:

```
Reset Revert Sweep Commit
LOGIN_SUCCESS
action: {} 1 key
  result: {} 3 keys
state: {} 6 keys
  users: [] 2 items
  posts: [] 2 items
  filter: false
  loading: {} 3 keys
```

The screenshot shows the same web browser window, but the page content is updated to include a form for creating a new post:

- Logged in as: @des (Destiny)
- [New post](#)
- Title:
- This is a post created via the (authenticated) API.
- Text:
- Category:
- Create post
- Successfully created post!
- [welcome](#) - [test](#) - [all posts](#)
- First post:** Hello world! This is the first blog post. ~ @dan (Daniel Bugl)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- Another test:** This is another test blog post. ~ @des (Destiny)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- New post:** This is a post created via the (authenticated) API. ~ @des (Destiny)  
(Created at: Tue, 15 Aug 2017 00:07:56 GMT, Updated at: Tue, 15 Aug 2017 00:07:56 GMT)

The Redux DevTools panel on the right shows the following state:

```
Reset Revert Sweep Commit
CREATE_POST_SUCCESS
action: {} 1 key
  result: {} 7 keys
    user: "des"
    title: "New post"
    text: "This is a post created via the (authenticated) API."
    category: "test"
    id: "860479Fa-9c13-4038-93a8-1014b38be8f6"
    created: 1502755676227
    updated: 1502755676227
state: {} 6 keys
```

# Chapter 8: Testing

```
1. fish /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_1 (fish)
dan@galaxy ~/G/P/L/C/chapter8_1> npm test

> chapter8_1@1.0.0 test /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_1
> jest

PASS  __tests__/example.test.js
  ✓ example test (5ms)

Test Suites: 1 passed, 1 total
Tests:       1 passed, 1 total
Snapshots:   0 total
Time:        0.959s, estimated 2s
Ran all test suites.
```

```
1. fish /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2 (fish)
dan@galaxy ~/G/P/L/C/chapter8_2> npm test

> chapter8_2@1.0.0 test /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2
> jest

PASS  __tests__/reducers/filter.test.js
PASS  __tests__/reducers/users.test.js
FAIL  __tests__/actions/users.test.js
  ● fetching user > dispatches FETCH_USER_SUCCESS when fetching succeeds

    expect(received).toEqual(expected)

    Expected value to equal:
    [{"type": "FETCH_USER_REQUEST"}, {"result": {"realname": "Daniel Bugl", "username": "dan"}, "type": "FETCH_USER_SUCCESS"}]
    Received:
    [{"type": "FETCH_USER_REQUEST"}, {"result": {"body": {"realname": "Daniel Bugl", "username": "dan"}, "type": "FETCH_USER_SUCCESS"}]}

    Difference:

    - Expected
    + Received

    @@ -2,11 +2,13 @@
    Object {
      "type": "FETCH_USER_REQUEST",
    },
    Object {
      "result": Object {
    -   "realname": "Daniel Bugl",
    -   "username": "dan",
    +   "body": Object {
    +     "realname": "Daniel Bugl",
    +     "username": "dan",
    +   },
      "type": "FETCH_USER_SUCCESS",
    },
  ]

    at __tests__/actions/users.test.js:39:36
    at process._tickCallback (internal/process/next_tick.js:109:7)

PASS  __tests__/actions/filter.test.js
PASS  __tests__/example.test.js

Test Suites: 1 failed, 4 passed, 5 total
Tests: 1 failed, 10 passed, 11 total
Snapshots: 0 total
Time: 4.346s
Ran all test suites.
```





```

1. fish /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2 (fish)
dan@galaxy ~/G/P/L/C/chapter8_2 [1]> npm run test:cov

> chapter8_2@1.0.0 test:cov /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2
> npm test -- --coverage

> chapter8_2@1.0.0 test /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2
> jest "--coverage"

PASS  __tests__/actions/users.test.js
PASS  __tests__/reducers/users.test.js
PASS  __tests__/reducers/filter.test.js
PASS  __tests__/actions/filter.test.js
PASS  __tests__/example.test.js

Test Suites: 5 passed, 5 total
Tests:      11 passed, 11 total
Snapshots:  0 total
Time:       2.232s
Ran all test suites.

-----|-----|-----|-----|-----|
File   | % Stmts | % Branch | % Funcs | % Lines | Uncovered Lines |
-----|-----|-----|-----|-----|-----|
All files | 68.67   | 76.92    | 30.3    | 74.32   |                  |
src     | 100     | 100     | 100     | 100     |                  |
  actionTypes.js | 100     | 100     | 100     | 100     |                  |
src/actions | 53.7    | 50      | 25.81   | 60      |                  |
  filter.js | 100     | 100     | 100     | 100     |                  |
  index.js | 100     | 100     | 100     | 100     |                  |
  posts.js | 28      | 0       | 0       | 33.33   | ... 50,52,56,64 |
  users.js | 46.15   | 100     | 22.22   | 55.56   | 17,18,33,48    |
  utils.js | 100     | 100     | 100     | 100     |                  |
src/reducers | 90      | 88.89   | 100     | 90      |                  |
  filter.js | 100     | 100     | 100     | 100     |                  |
  users.js | 83.33   | 80      | 100     | 83.33   | 11              |
-----|-----|-----|-----|-----|

```

```

1. fish /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2 (fish)
dan@galaxy ~/G/P/L/C/chapter8_2> npm test

> chapter8_2@1.0.0 test /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2
> jest

PASS  __tests__/actions/filter.test.js
PASS  __tests__/example.test.js

Test Suites: 2 passed, 2 total
Tests:      3 passed, 3 total
Snapshots:  0 total
Time:       1.111s, estimated 2s
Ran all test suites.

```

```

1. fish /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2 (fish)
dan@galaxy ~/G/P/L/C/chapter8_2> npm test

> chapter8_2@1.0.0 test /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2
> jest

PASS  _tests_/actions/users.test.js
PASS  _tests_/actions/filter.test.js
PASS  _tests_/reducers/users.test.js
PASS  _tests_/reducers/filter.test.js
PASS  _tests_/example.test.js

Test Suites: 5 passed, 5 total
Tests:      11 passed, 11 total
Snapshots:  0 total
Time:       1.892s
Ran all test suites.

```

```

1. fish /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2 (fish)
dan@galaxy ~/G/P/L/C/chapter8_2 [1]> npm run test:cov

> chapter8_2@1.0.0 test:cov /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2
> npm test -- --coverage

> chapter8_2@1.0.0 test /Users/dan/Google Drive/Personal/LearningRedux/Code/chapter8_2
> jest "--coverage"

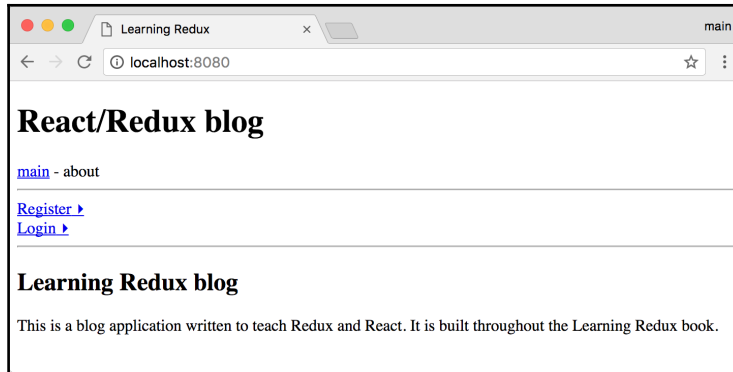
PASS  _tests_/actions/users.test.js
PASS  _tests_/reducers/users.test.js
PASS  _tests_/reducers/filter.test.js
PASS  _tests_/actions/filter.test.js
PASS  _tests_/example.test.js

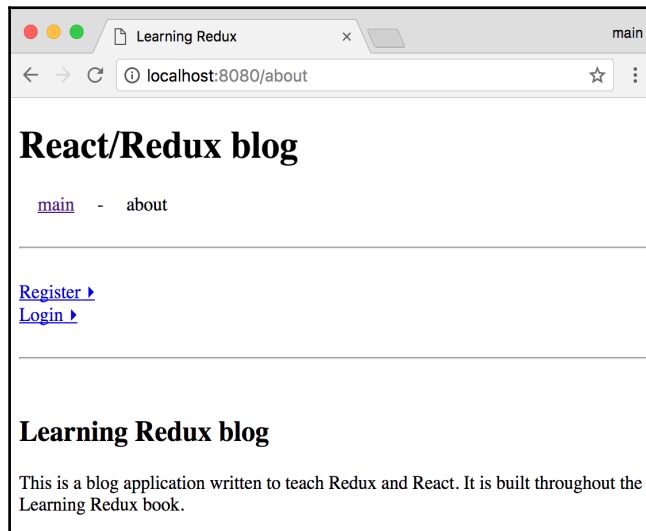
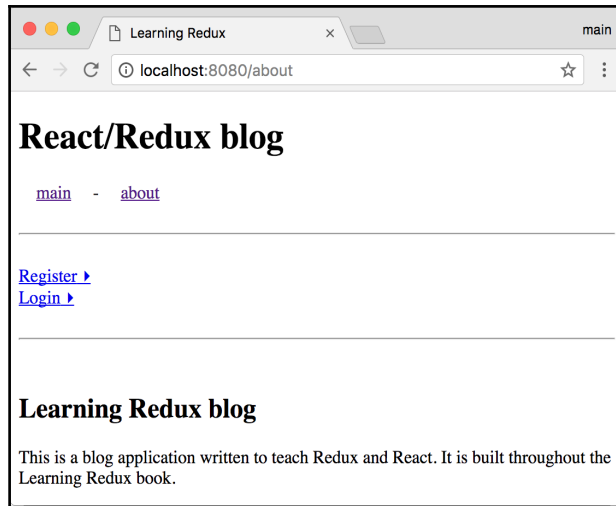
Test Suites: 5 passed, 5 total
Tests:      11 passed, 11 total
Snapshots:  0 total
Time:       2.232s
Ran all test suites.

```

File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Lines
All files	68.67	76.92	30.3	74.32	
src	100	100	100	100	
actionTypes.js	100	100	100	100	
src/actions	53.7	50	25.81	60	
filter.js	100	100	100	100	
index.js	100	100	100	100	
posts.js	28	0	0	33.33	... 50,52,56,64
users.js	46.15	100	22.22	55.56	17,18,33,48
utils.js	100	100	100	100	
src/reducers	90	88.89	100	90	
filter.js	100	100	100	100	
users.js	83.33	80	100	83.33	11

# Chapter 9: Routing





The image shows a web browser window with the title "Learning Redux" and the URL "localhost:8080/about". The page content includes a navigation bar with "main" and "about" links, a "Register" link, a "Login" link, and a section titled "Learning Redux blog" with the text "This is a blog application written to teach Redux book." A Redux DevTools overlay is visible on the right side of the browser, showing the Redux state and an action. The state is a nested object with keys for "action", "state", "users", "posts", "filter", "loading", "error", and "session". The action is an object with a "payload" key. The state contains two arrays of users and posts, and a "filter" key set to "false". The "loading" key is an object with two keys, "error" is an object with zero keys, and "session" is "false".

Learning Redux

localhost:8080/about

# React/Redux blog

[main](#) - [about](#)

---

[Register](#) ▶  
[Login](#) ▶

---

## Learning Redux blog

This is a blog application written to teach Redux book.

Redux DevTools overlay:

- Reset
- Revert
- Sweep
- Commit

```
@@@router/LOCATION_CHANGE
  action: {} 1 key
    payload: {} 5 keys
  state: {} 6 keys
    users: [] 2 items
    posts: [] 2 items
    filter: false
    loading: {} 2 keys
    error: {} 0 keys
    session: false
```

# Chapter 10: Rendering on the Server

The screenshot shows a web browser window with the URL `localhost:8080`. The page content includes a title "React/Redux blog", navigation links for "main" and "about", and buttons for "Register" and "Login". Below these are links for "welcome", "test", and "all posts". A list of two blog posts is displayed, each with a title, a short description, and creation/updated timestamps.

The browser's developer tools are open to the Network tab, showing a list of requests. The table below summarizes the data from the screenshot:

Name	Status	Type	Initiator	Size	Time	Waterfall	500.00 ms	▲
localhost	200	document	Other	398 B	60 ms			
main.js	200	script	(index)	1.3 MB	126 ms			
posts	200	fetch	main.js:16723	701 B	59 ms			
dan	200	fetch	main.js:9003	264 B	57 ms			
des	200	fetch	main.js:9003	260 B	58 ms			

5 requests | 1.3 MB transferred | Finish: 650 ms | DOMContentLoaded: 406 ms | Load: 405 ms

main
Learning Redux

localhost:8080

# React/Redux blog

main - [about](#)

---

[Register](#)   
[Login](#)

---

[welcome - test - all posts](#)

- First post:** Hello world! This is the first blog post. ~ @dan (*Daniel Bugli*)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)
- Another test:** This is another test blog post. ~ @des (*Destiny*)  
(Created at: Thu, 11 May 2017 09:20:48 GMT, Updated at: Thu, 11 May 2017 09:20:48 GMT)

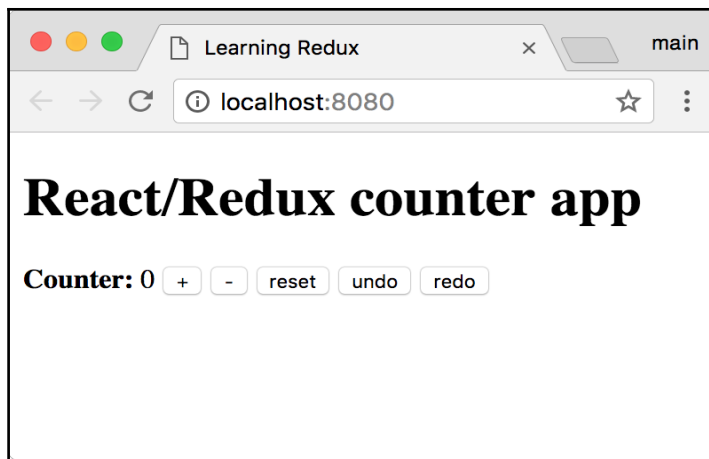
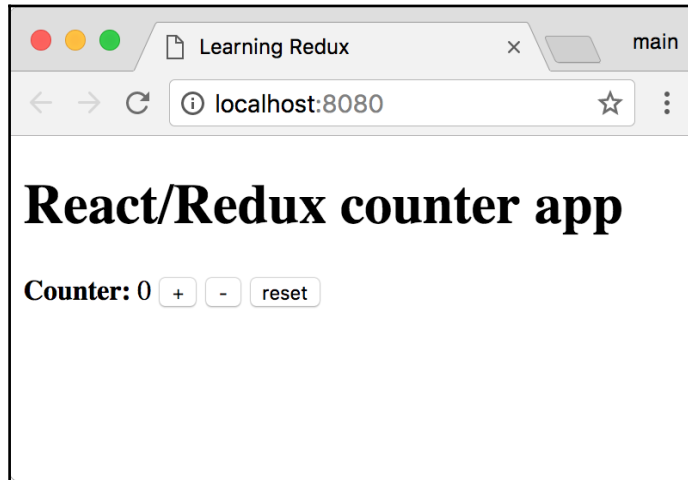
X
Elements Console Sources Network Performance Memory Application Security Audits

+50ms latency
View: Group by frame Preserve log  Disable cache Offline

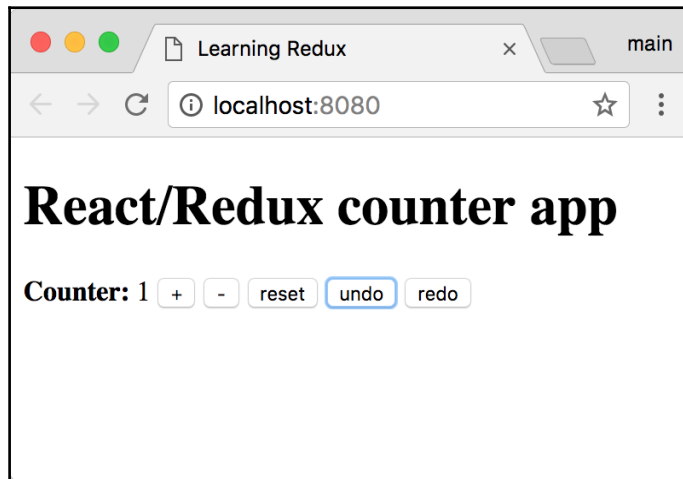
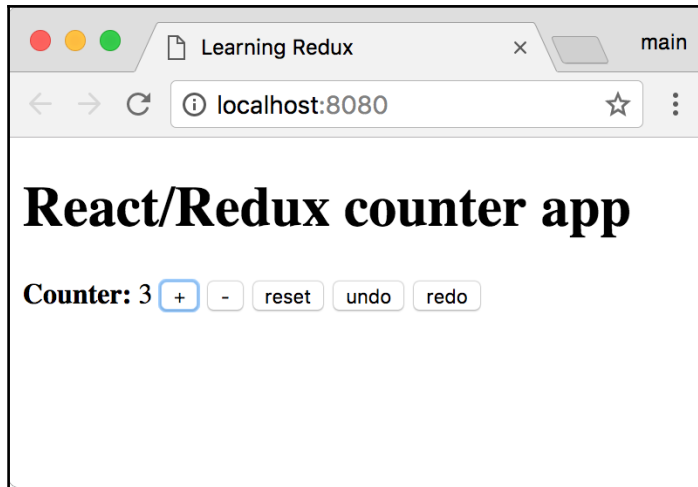
Name	Status	Type	Initiator	Size	Time	Waterfall	400.0
localhost	200	document	Other	4.6 KB	59 ms	<div style="width: 59px; height: 10px; background-color: green;"></div>	
main.js	200	script	(index)	1.3 MB	105 ms	<div style="width: 105px; height: 10px; background-color: blue;"></div>	

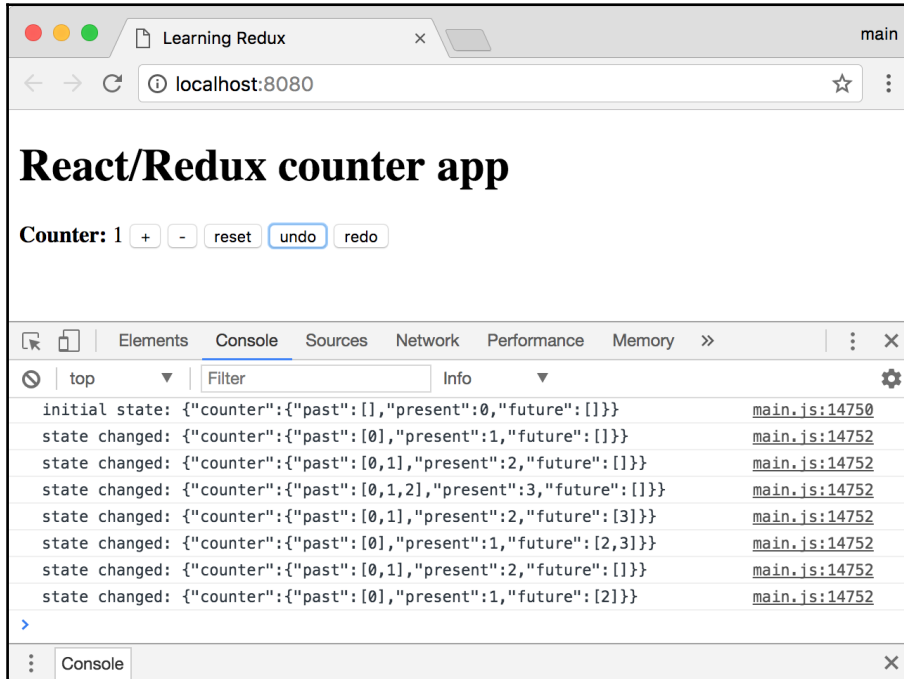
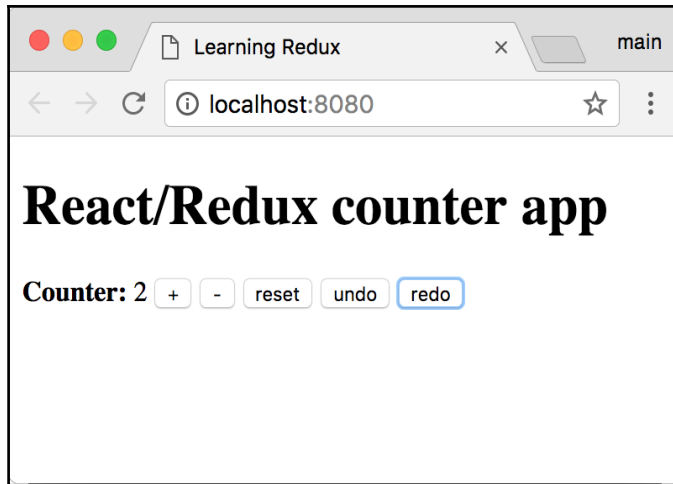
2 requests | 1.3 MB transferred | Finish: 172 ms | DOMContentLoaded: 325 ms | Load: 325 ms

# Chapter 11: Solving Generic Problems with Higher-Order Functions









The image shows a web browser window with the title "Learning Redux" and the URL "localhost:8080". The page displays a "React/Redux counter app" with a "Counter: 0" and buttons for "+", "-", "reset", "undo", and "redo". Below the browser, the Redux DevTools console is open, showing the initial state and a sequence of actions: "INCREMENT", "@@redux-undo/UNDO", and "perform undo".

# React/Redux counter app

Counter: 0 + - reset undo redo

```
initial state: {"counter":{"past":[],"present":0,"future":[]},"group":null,"_latestUnfiltered":0,"index":0,"limit":1} main.js:14867
▼ redux-undo action INCREMENT main.js:30405
  prev history main.js:30406
    ▶ Object {past: Array(0), present: 0, future: Array(0), group: null, _latestUnfiltered: 0...}
  action ▶ Object {type: "INCREMENT"} main.js:30407
  next history main.js:30408
    ▶ Object {past: Array(1), present: 1, future: Array(0), group: null, _latestUnfiltered: 1...}
  history is uninitialized
  initialHistory initialized: initialState is a history
  ▶ Object {past: Array(0), present: 0, future: Array(0), group: null, _latestUnfiltered: 0...}
  inserting 1
  new free: NaN
  inserted new state into history
  state changed: {"counter":{"past":[0],"present":1,"future":[]},"group":null,"_latestUnfiltered":1,"index":1,"limit":2} main.js:14869
▼ redux-undo action @@redux-undo/UNDO main.js:30405
  prev history main.js:30406
    ▶ Object {past: Array(1), present: 1, future: Array(0), group: null, _latestUnfiltered: 1...}
  action ▶ Object {type: "@@redux-undo/UNDO"} main.js:30407
  next history main.js:30408
    ▶ Object {past: Array(0), present: 0, future: Array(1), group: null, _latestUnfiltered: 0...}
  perform undo main.js:30409
  state changed: {"counter":{"past":[],"present":0,"future":[]},"group":null,"_latestUnfiltered":0,"index":0,"limit":2} main.js:14869
```

# Chapter 12: Extending the Redux Store via Middleware

The screenshot shows a web browser window with the URL `localhost:8080`. The page title is "React/Redux blog". The navigation bar includes links for "main" and "about". The user is logged in as "@test (Test User)" with a "New post" link. The main content area shows a list of posts, with the first one being "welcome - test - all posts". A second post is partially visible, titled "Another test: This is another test blog post. ~ @des (Destiny)", with creation and update timestamps of "Thu, 11 May 2017 09:20:48 GMT".

Below the browser window is the Redux DevTools console. The console shows the following sequence of events:

- `error reporter active` (main.js:17879)
- `initial state` (main.js:17856)
  - Object {users: Array(2), posts: Array(2), filter: false, loading: Object, error: Object...}
- `@router/LOCATION_CHANGE` (main.js:17932)
  - dispatching > Object {type: "@router/LOCATION\_CHANGE", payload: Object} (main.js:17934)
  - new state (main.js:17936)
    - Object {users: Array(2), posts: Array(2), filter: false, loading: Object, error: Object...}
- `CREATE_USER_REQUEST` (main.js:17932)
  - dispatching > Object {type: "CREATE\_USER\_REQUEST"} (main.js:17934)
  - new state (main.js:17936)
    - Object {users: Array(2), posts: Array(2), filter: false, loading: Object, error: Object...}
- `CREATE_USER_SUCCESS` (main.js:17932)
  - dispatching > Object {type: "CREATE\_USER\_SUCCESS", result: Object} (main.js:17934)
  - new state (main.js:17936)
    - Object {users: Array(3), posts: Array(2), filter: false, loading: Object, error: Object...}
- `LOGIN_REQUEST` (main.js:17932)
  - dispatching > Object {type: "LOGIN\_REQUEST"} (main.js:17934)
  - new state (main.js:17936)
    - Object {users: Array(3), posts: Array(2), filter: false, loading: Object, error: Object...}
- `LOGIN_SUCCESS` (main.js:17932)
  - dispatching > Object {type: "LOGIN\_SUCCESS", result: Object} (main.js:17934)
  - new state (main.js:17936)
    - Object {users: Array(3), posts: Array(2), filter: false, loading: Object, error: Object...}
- `SET_FILTER` (main.js:17932)
  - dispatching > Object {type: "SET\_FILTER", filter: "test"} (main.js:17934)
  - new state (main.js:17936)
    - Object {users: Array(3), posts: Array(2), filter: "test", loading: Object, error: Object...}