

Running Unit and End to End Tests



John Papa

PRINCIPAL DEVELOPER ADVOCATE

@john_papa www.johnpapa.net



Testing



Execute unit tests

Watch for file changes

Execute end to end tests

Explore the various options



Testing Angular





Unit Tests

Test discrete functionality

Isolate the feature under test

Valuable part of the dev and CI lifecycles



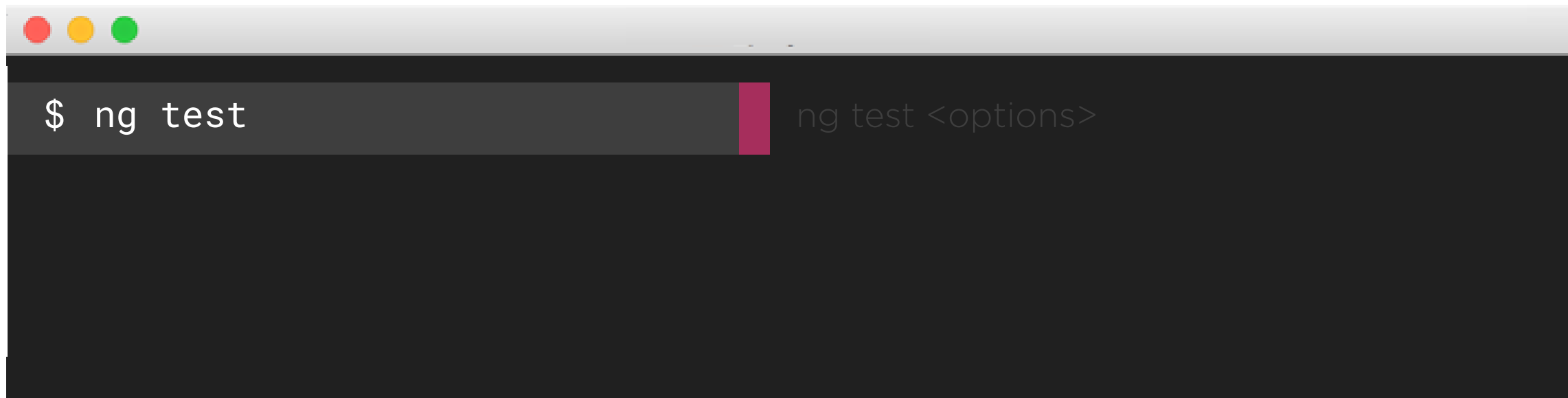
Getting Help

Add the **--help** or **-h** flag



```
$ ng test --help
```

A terminal window with a dark background and a light gray title bar. The title bar has three colored window control buttons (red, yellow, green) on the left. The terminal displays the command `$ ng test --help` in white text.



Test During Development

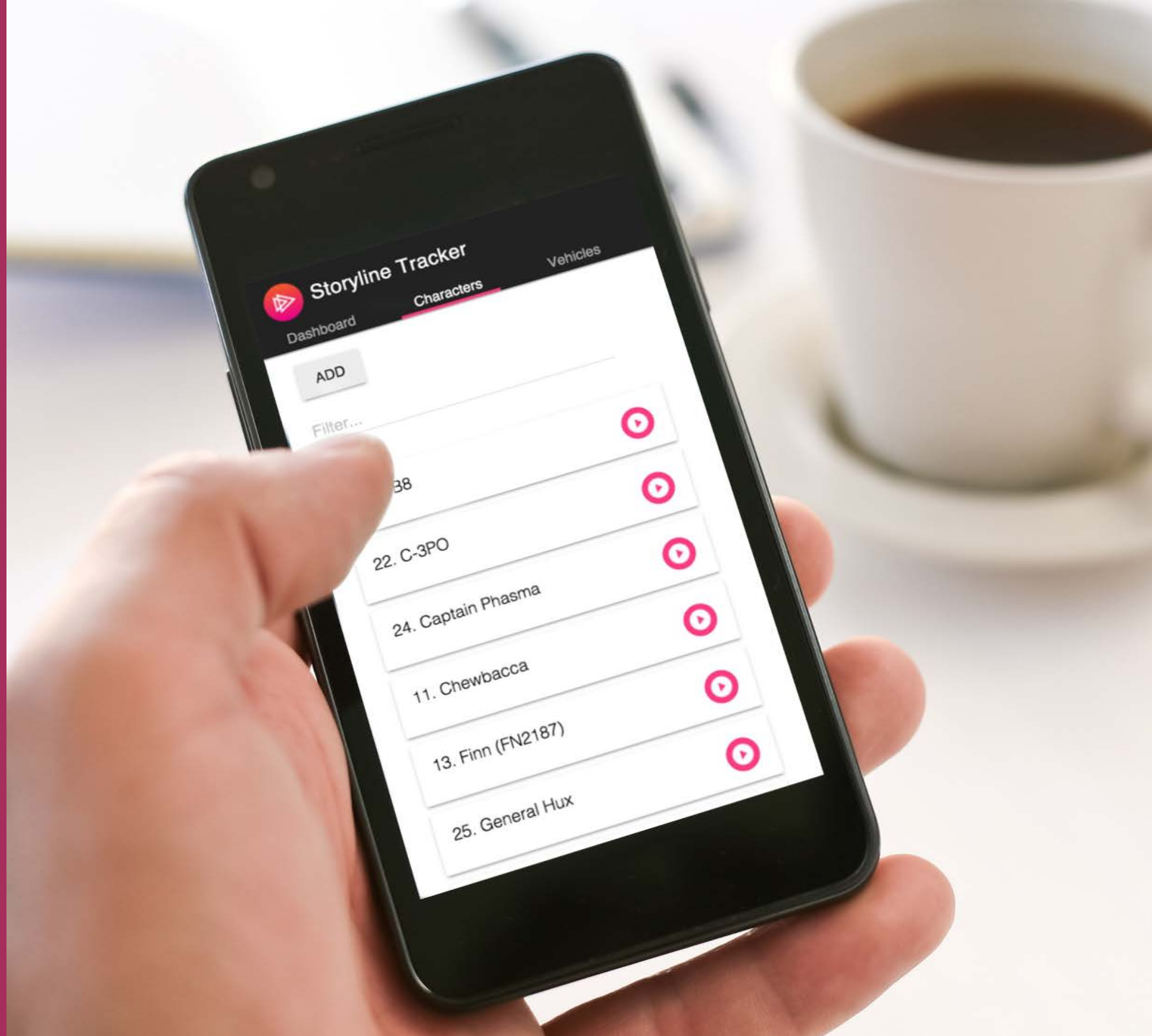
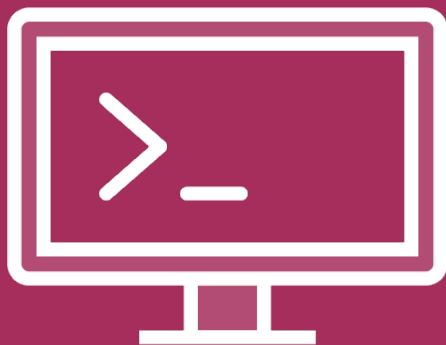
Execute tests on all ***.spec.ts** files

Watch for file changes, then test again

Run in its own terminal process



Demo



Testing Options



Common `ng test` Options

Options

Description

`--code-coverage`

Generate code coverage report (default false)

`--progress`

Log progress to console (default true)

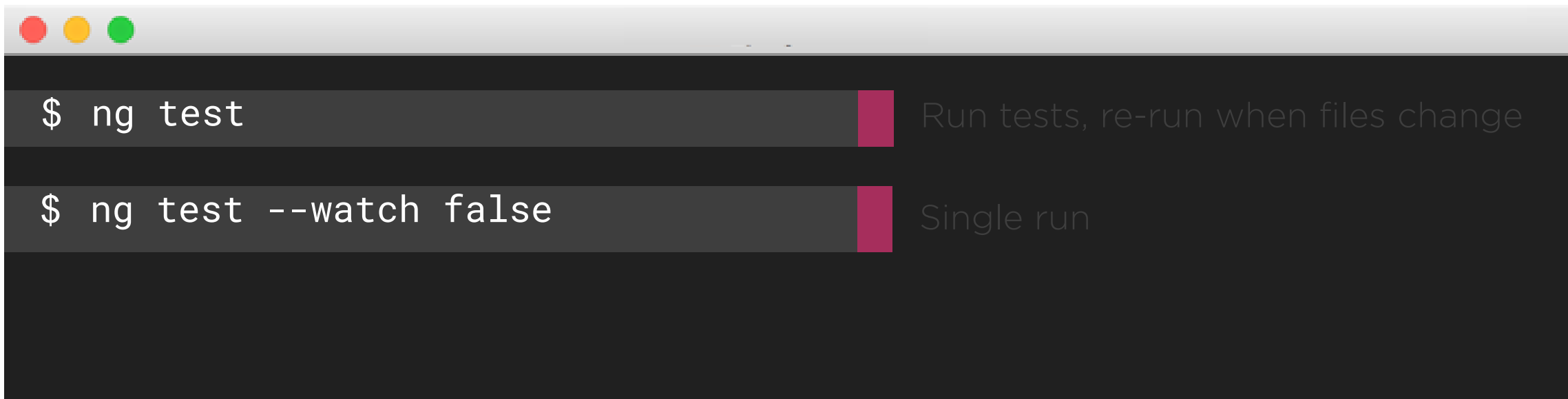
`--sourcemaps`

Generate sourcemaps (default true)

`--watch`

Run test once, and watch (default true)





Continuous Testing vs Single Test Cycle

Tests execute after a build is executed via Karma

Automatically watch your files for changes, by default with **ng test**

Run a test a single time with **ng test --watch false**

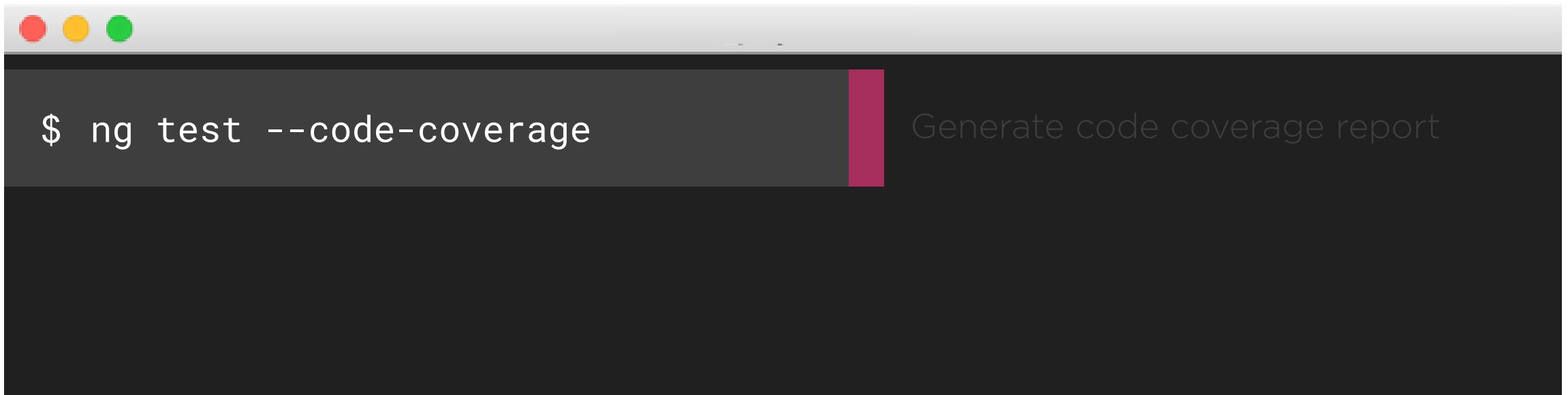


Test Code Coverage

Calculate and report test code coverage with **ng test --code-coverage**

Report is generated in the **/coverage** folder

Report folder is configurable in **karma.conf.js**



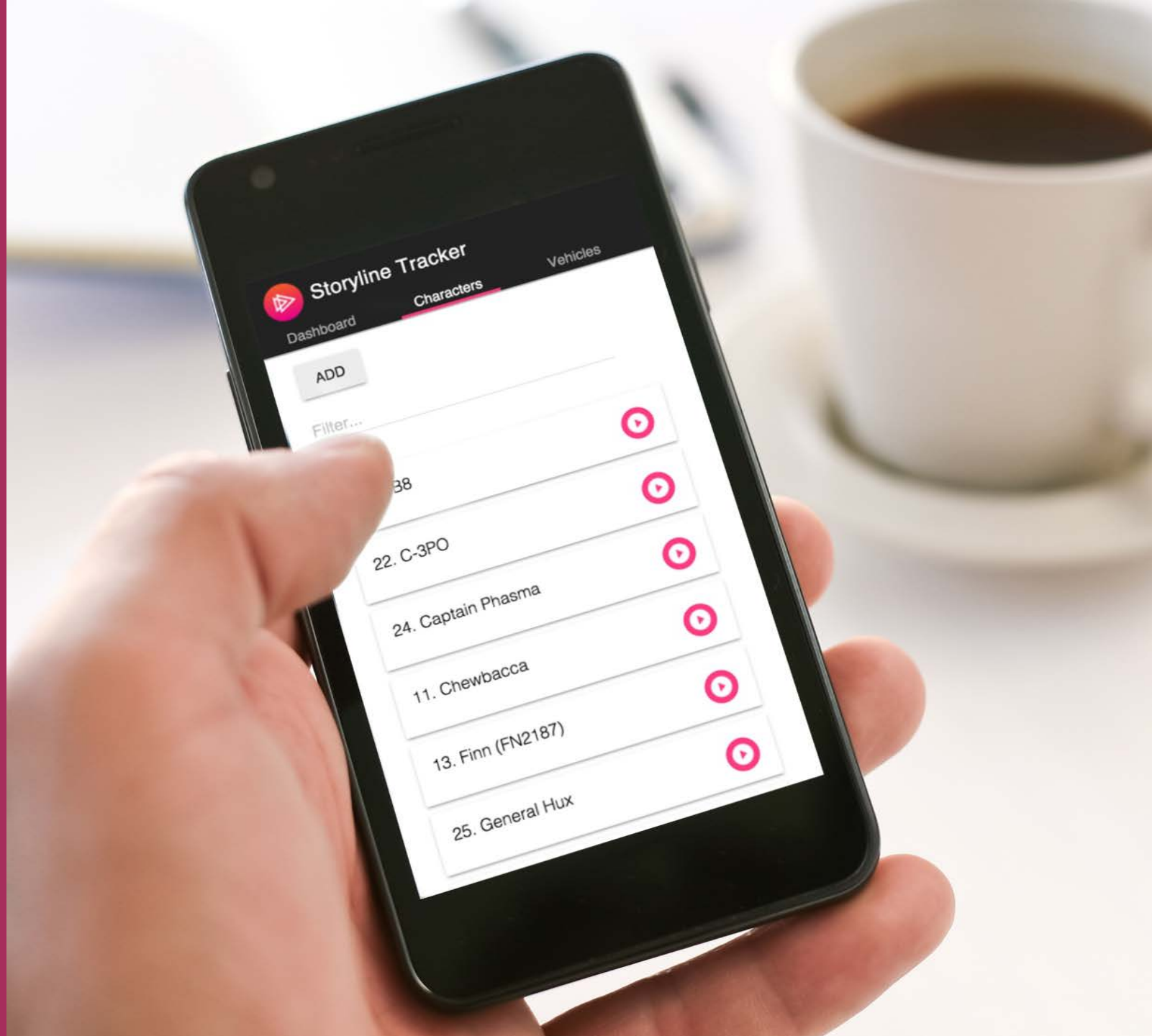
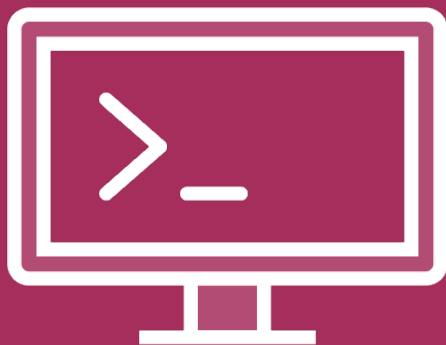
A terminal window with a dark background and a light gray title bar. The title bar has three colored window control buttons (red, yellow, green) on the left. The terminal content shows a command prompt followed by the command to run tests with code coverage. A vertical pink bar is positioned to the right of the command text. To the right of the terminal window, the text 'Generate code coverage report' is displayed in a light gray font.

```
$ ng test --code-coverage
```

Generate code coverage report

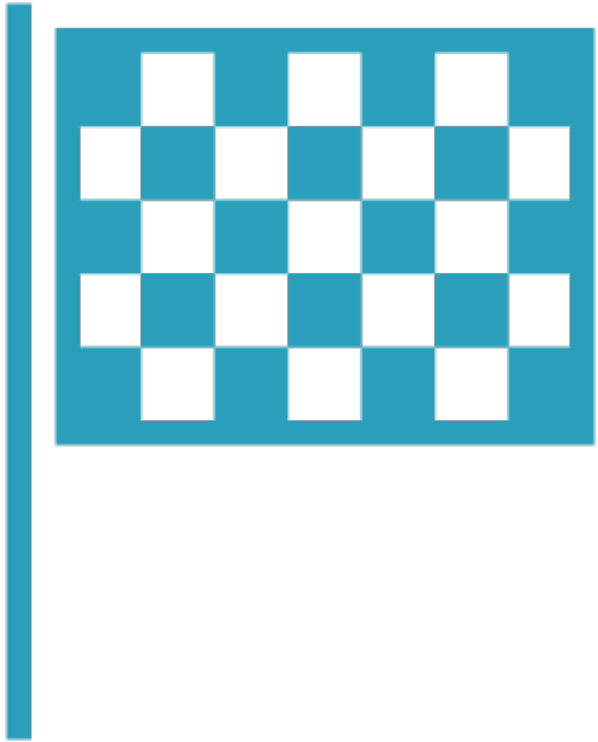


Demo



End to End Tests





End to End Tests

Test app behavior through user interaction

Great way to prove out use cases

Use protractor with Angular



Getting Help

Add the **--help** or **-h** flag



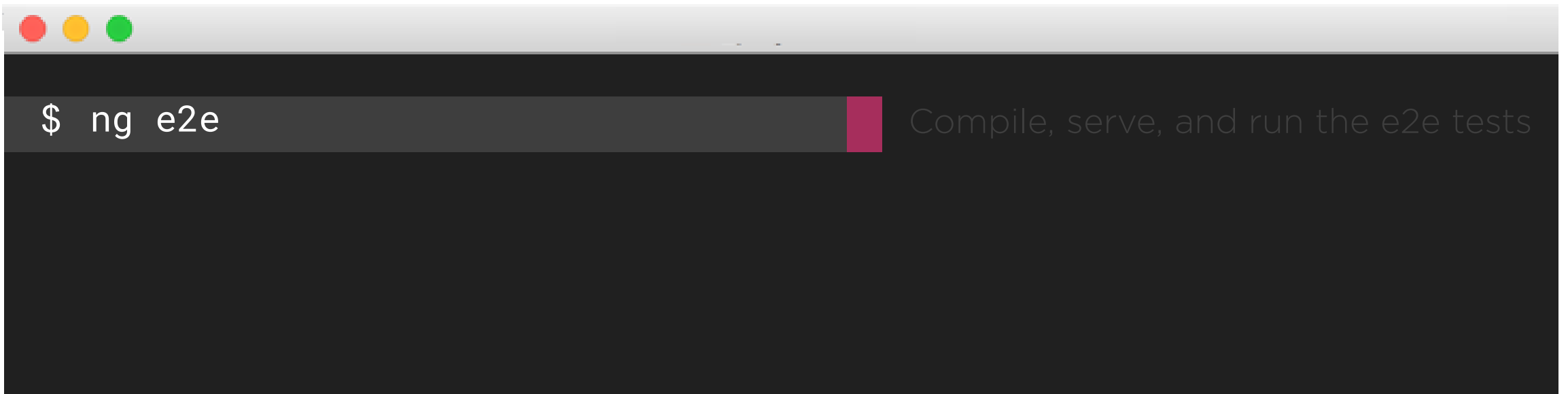
```
$ ng e2e --help
```

A terminal window with a dark background and a light gray title bar. The title bar has three colored window control buttons (red, yellow, green) on the left. The terminal content shows the command `$ ng e2e --help` entered at the prompt.

ng e2e

By default it compiles, serves on a random port, and runs tests

Executes end-to-end tests



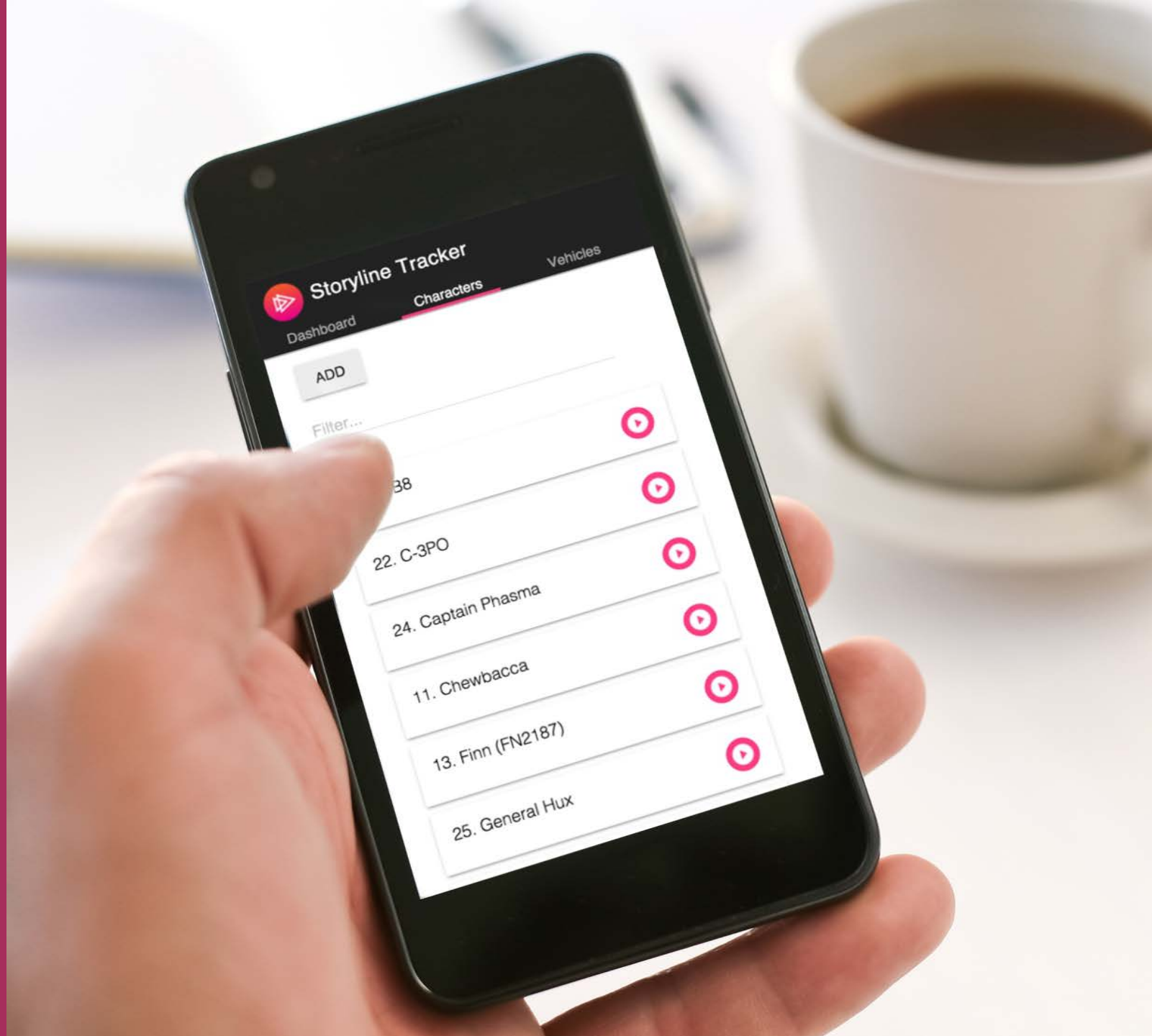
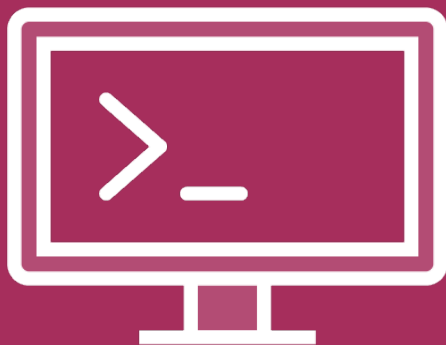
```
$ ng e2e
```

Compile, serve, and run the e2e tests

A terminal window with a dark background and a light gray title bar. The title bar has three colored window control buttons (red, yellow, green) on the left. The terminal shows a prompt '\$' followed by the command 'ng e2e'. To the right of the command, there is a pink vertical bar and the text 'Compile, serve, and run the e2e tests'.



Demo



Running and Debugging Tests



Execute unit tests

Debug tests in the browser

Execute end to end tests

Debug end to end tests with protractor

