

# Running Unit and End to End Tests

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# Testing



**Execute unit tests**

**Watch for file changes**

**Execute end to end tests**

**Explore the various options**



# Testing Angular

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# Unit Tests

Test discrete functionality

Isolate the feature under test

Valuable part of the dev and CI lifecycles



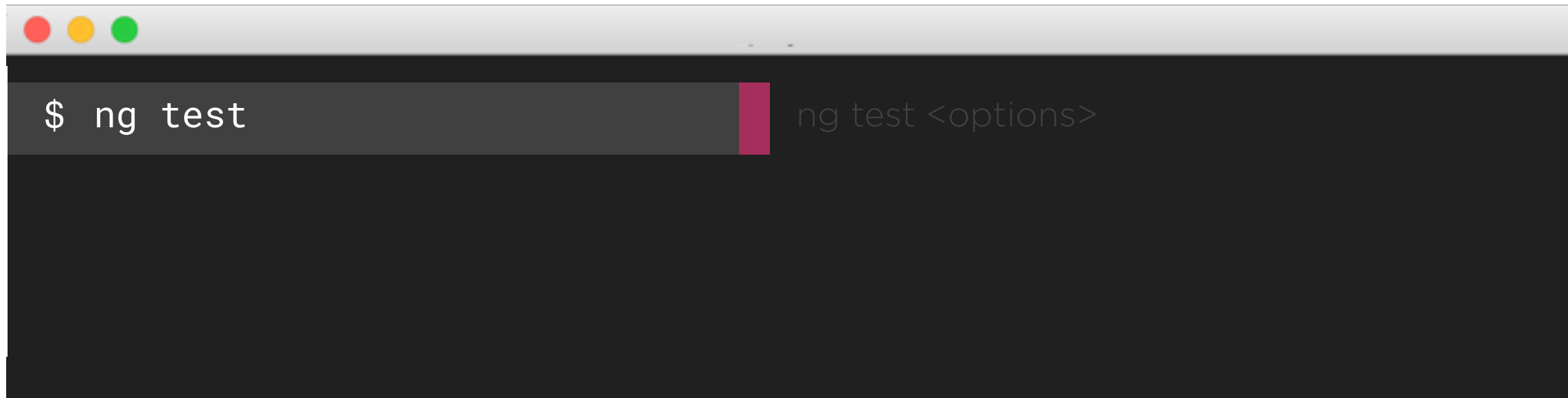
# Getting Help

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

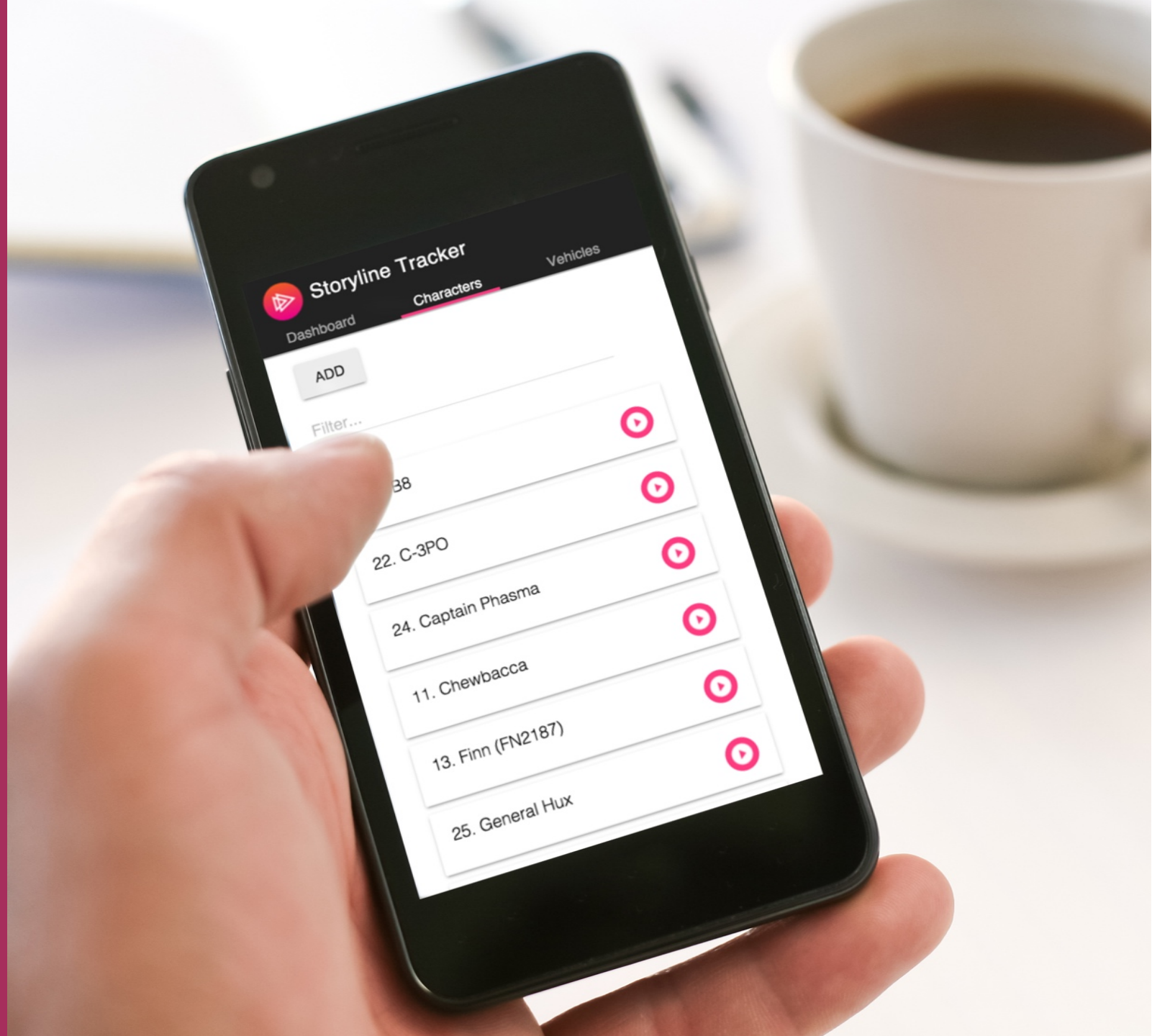
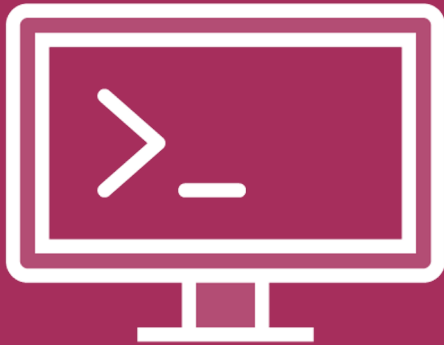
Execute tests on all **\*.spec.ts** files

Watch for file changes, then test again

Run in its own terminal process



# Demo



# Testing Options

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# Common `ng test` Options

## Options

## Description

`--code-coverage`

Generate code coverage report (default false)

`--progress`

Log progress to console (default true)

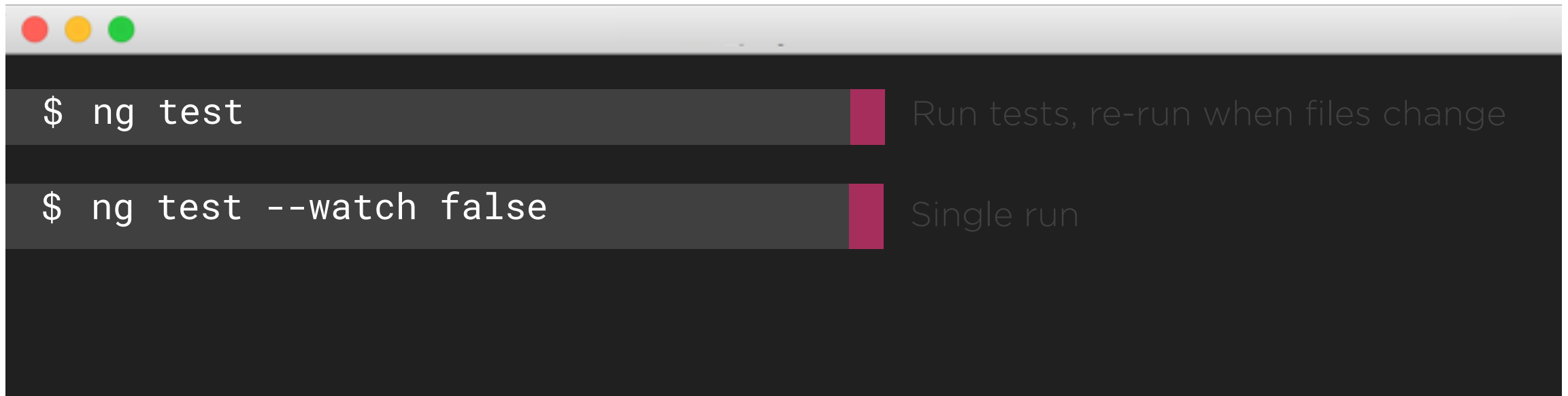
`--source-map`

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**

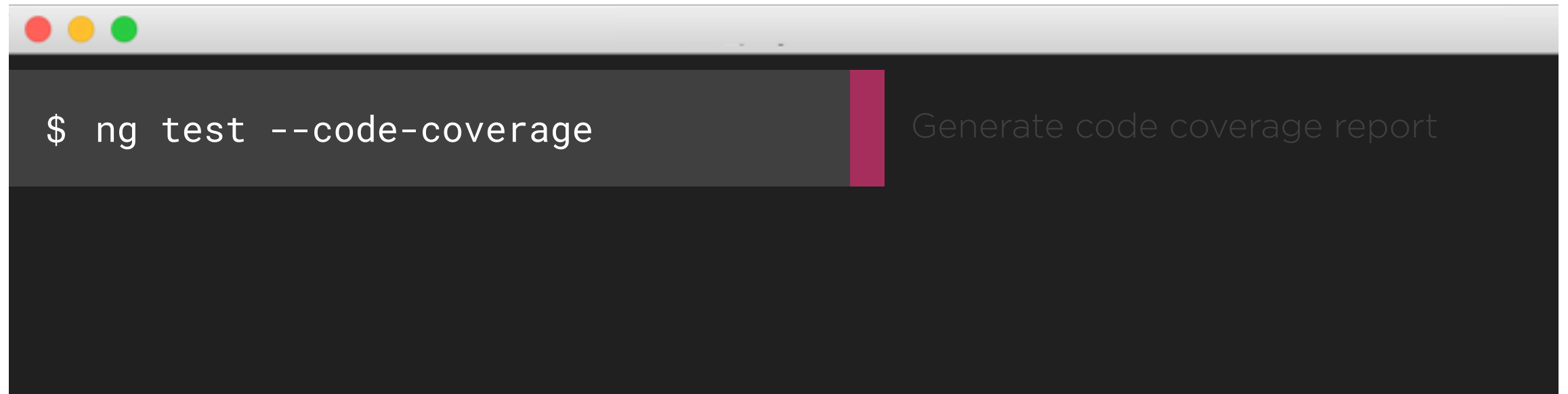


# Test Code Coverage

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**



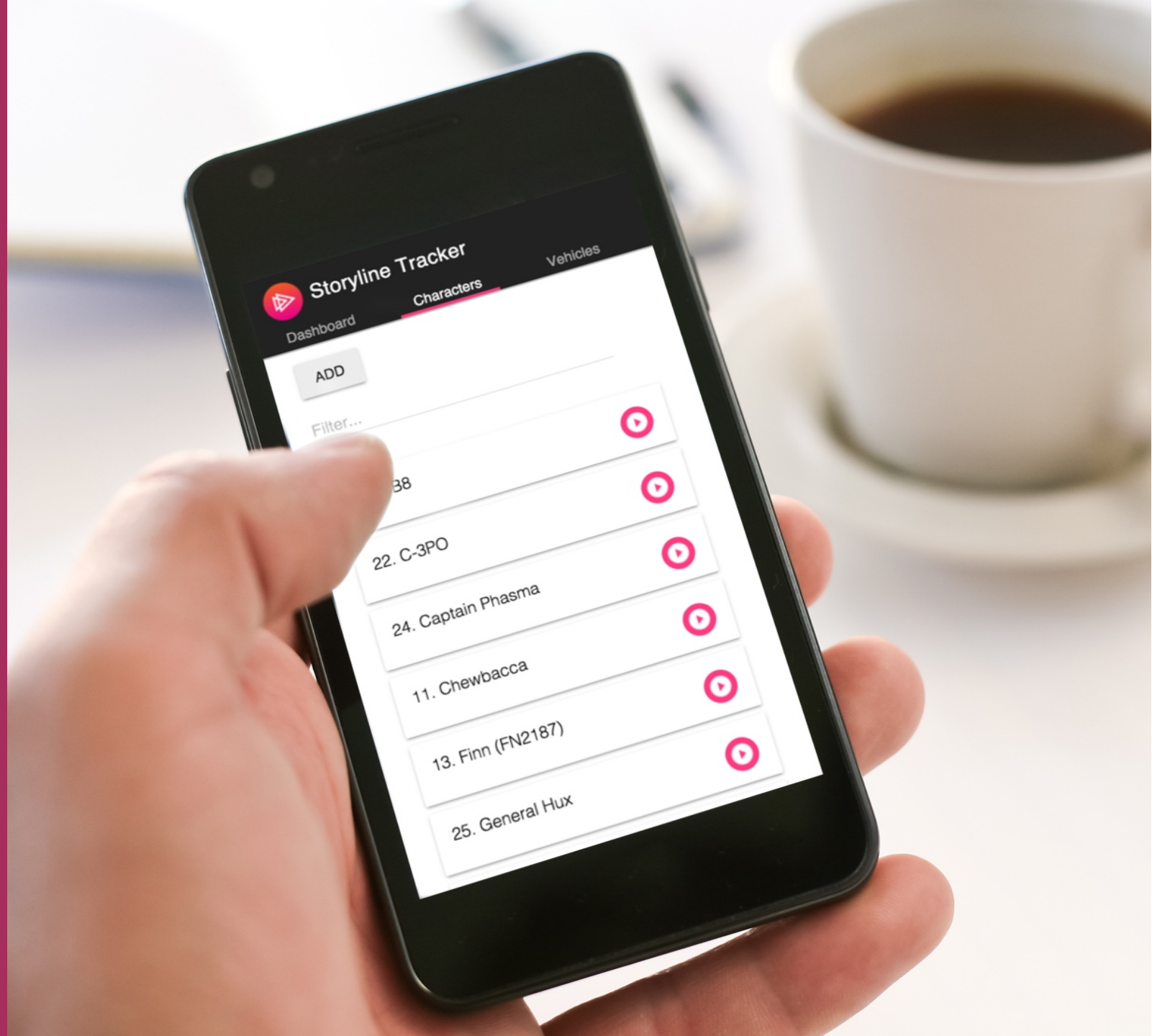
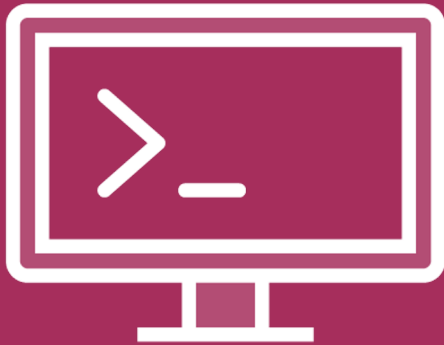
A terminal window with a dark background and a light gray title bar. The title bar has three colored window control buttons (red, yellow, green) on the left. The terminal content shows a command prompt followed by the command to run tests with code coverage. A vertical pink bar is positioned to the right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



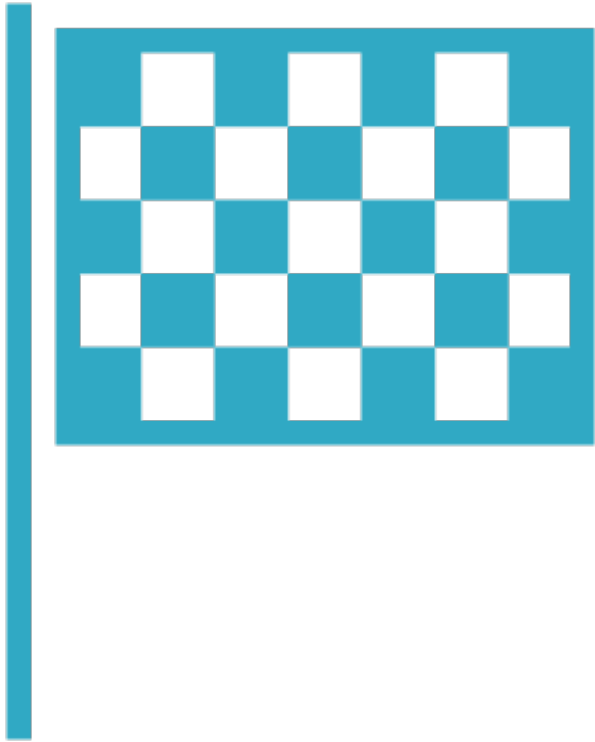
# Demo



# End to End Tests

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# 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

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 e2e --help' in white text.

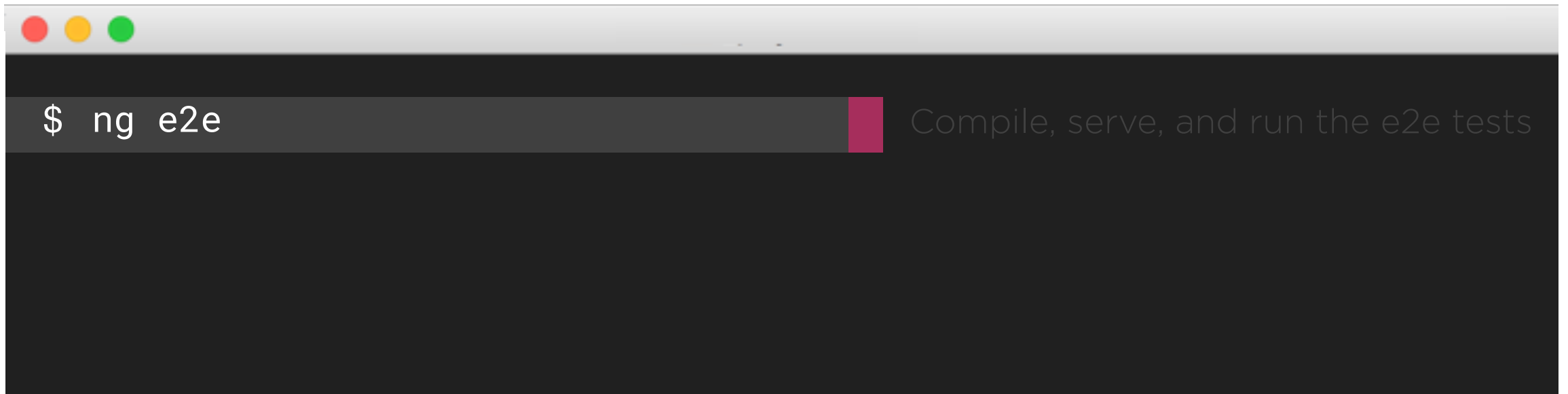
```
$ ng e2e --help
```



## ng e2e

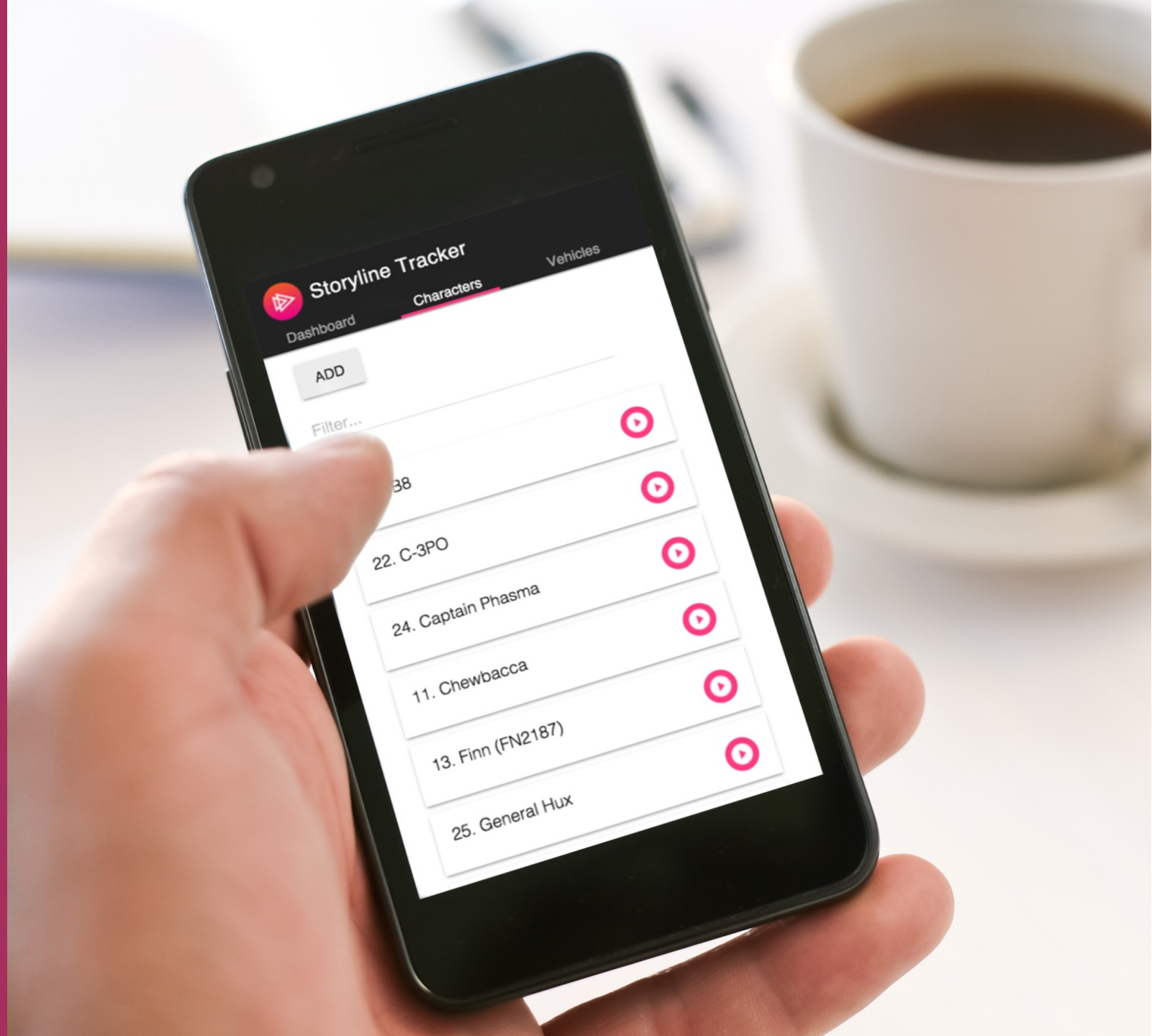
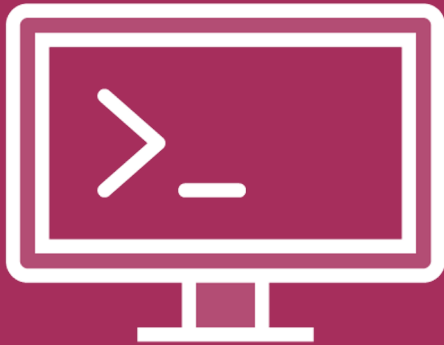
By default it compiles, serves on a random port, and runs tests

Executes end-to-end 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**

