

# End-to-End Testing Angular Applications



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# End-to-End Testing

- Unit Testing is great for testing the units in isolation
  - Frequent repeated tests
  - Fast
  - Does not test the interaction among the units
  - Small test coverage scope
- Need integration and end-to-end tests
  - Covers large group of module interactions
  - Slow, so not repeated frequently

# Testing Strategies

## E2E Tests

Few, slow, tests everything  
including user interaction

## Integration Tests

Testing interactions among  
modules

## Unit Tests

Testing individual units in isolation, numerous  
tests, repeated frequently

# Protractor

- Node program that enables running of end-to-end tests
  - Runs tests against your application running in a browser and interacting with it like a real user
- Uses WebDriver to control browsers to carry out the tests
  - Selenium browser automation framework
  - Can use Direct Connect to test with Chrome and Firefox
- Uses Jasmine for expressing the test syntax