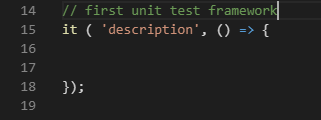
**Unit Testing:**

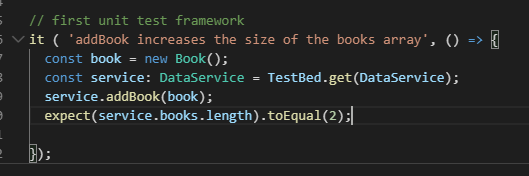
Create a Unit Test:

dataService.spec.ts test file

Jasmine is the testing framework:

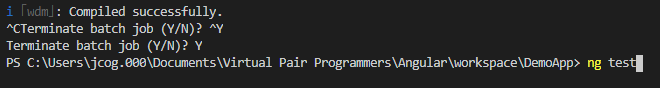


Does the addBook method increase the number of books?

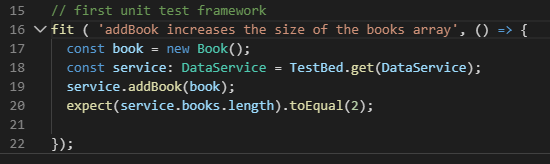


**To run a test:**

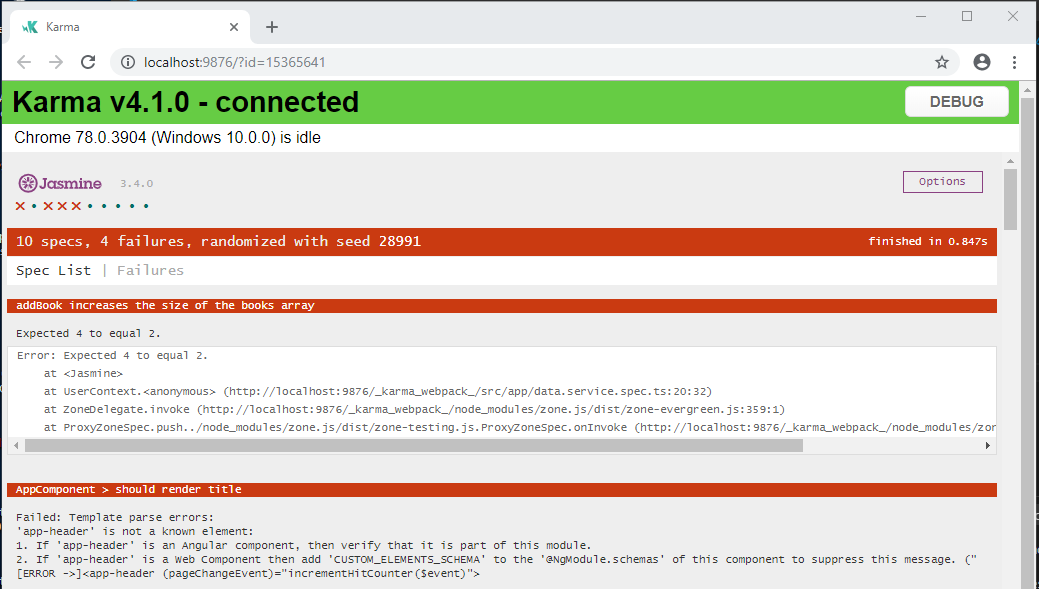
Stop the terminal and type ng test



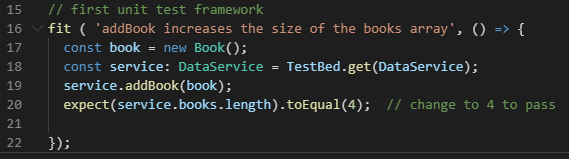
Add an f to what you want to run it to fit



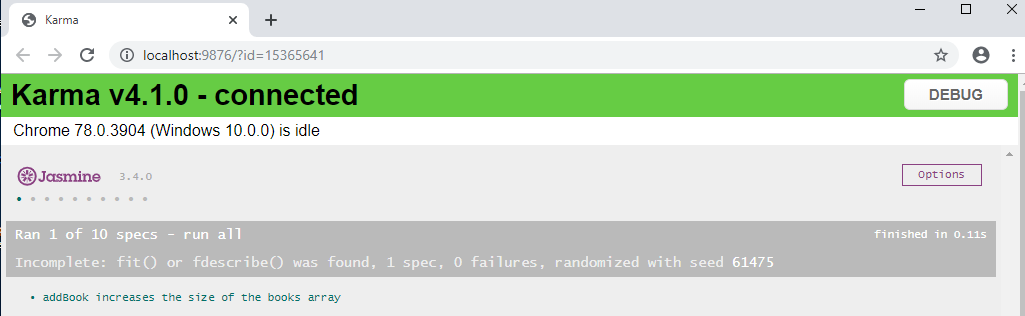
Press Enter



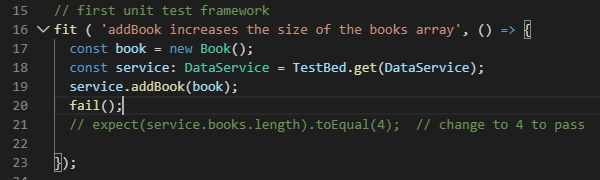
Fix the failing test

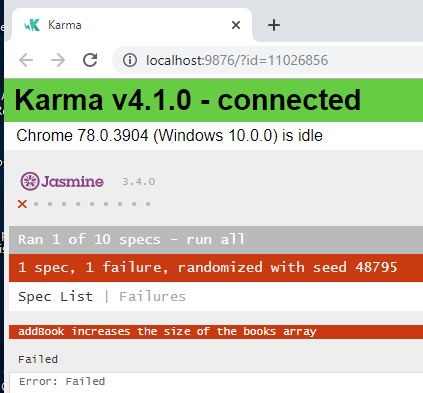


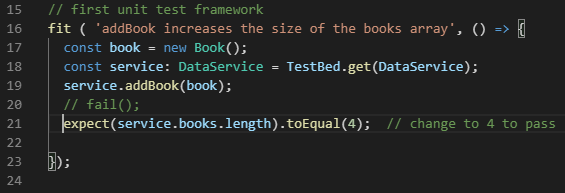
Test passed



There is a fail() method







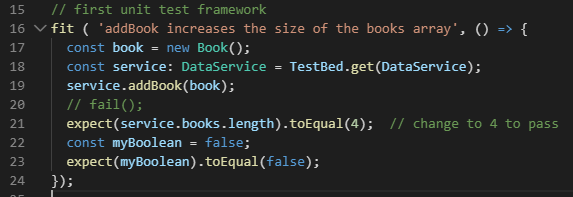
**Test Evaluation Methods:**

ToBe is about Object Equality

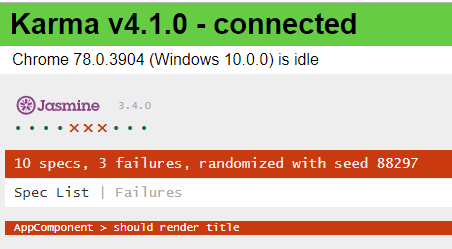
Falsy If you can cast to Boolean it will be false

Truthy if you can cast to Boolean it will be true

**Use toEqual to check Boolean values!!!!**



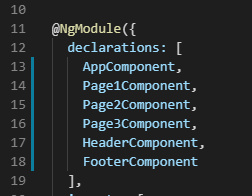
**To run all tests remove the f and execute > ng test**



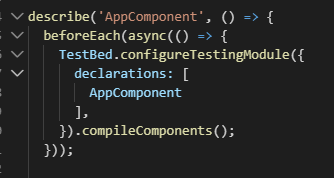
**Let us fix the failing tests**

**App.component.spec.ts does not know about the additional declarations and elements**

**Added to the application**



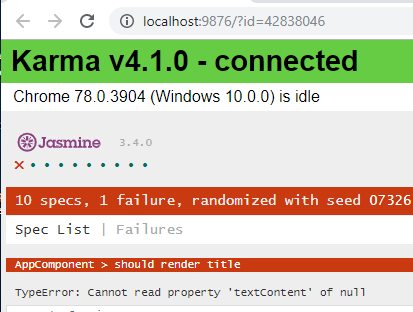
**In the app.component.spec.ts file declaration these only AppComponent exists**



**So, lets add the other missing parts**

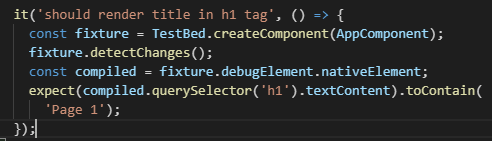


**Rerun tests**

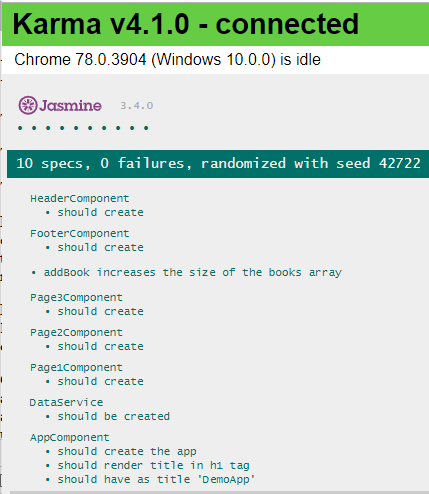


**In page1.html**





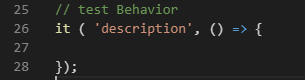
**Rerun tests**



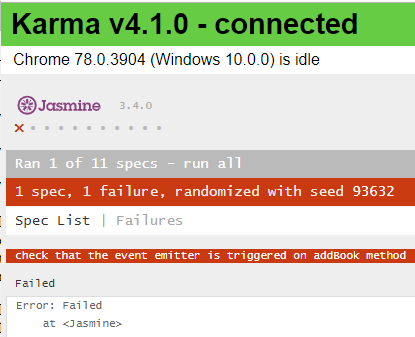
**All tests now pass!!**

**Testing Behavior:**

**When we addBook is the emitter triggered?**

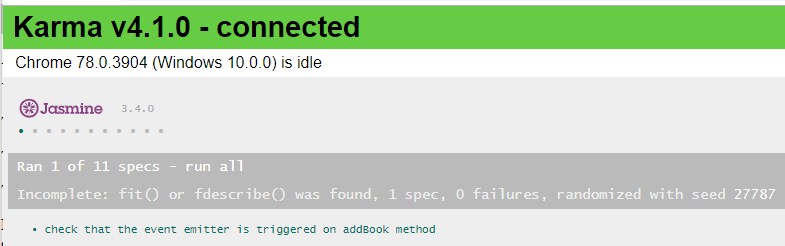


**Test failure**



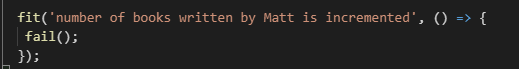
**Remove the fail() and test**

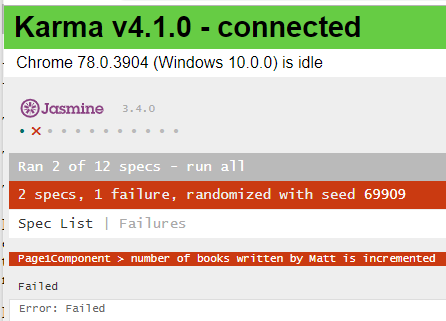


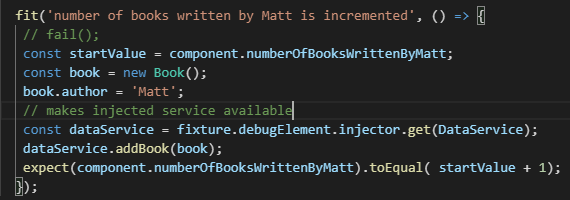


**Checking Dependencies:**

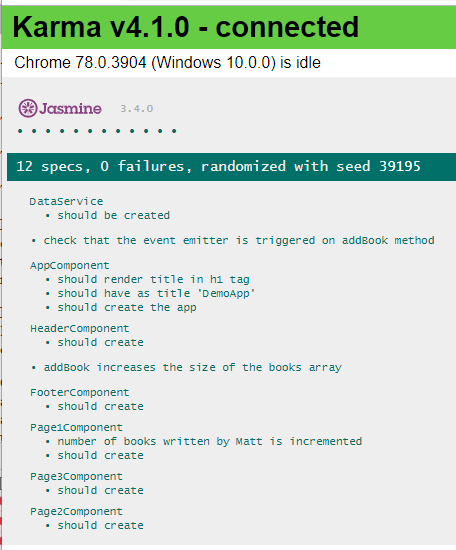
**In the page1.spec.ts file**



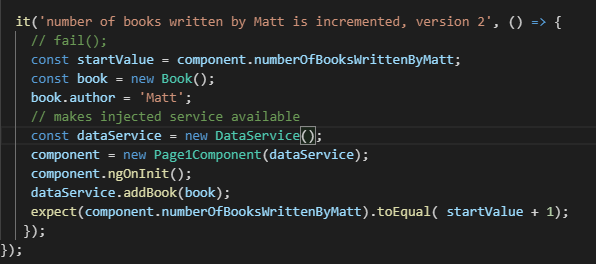


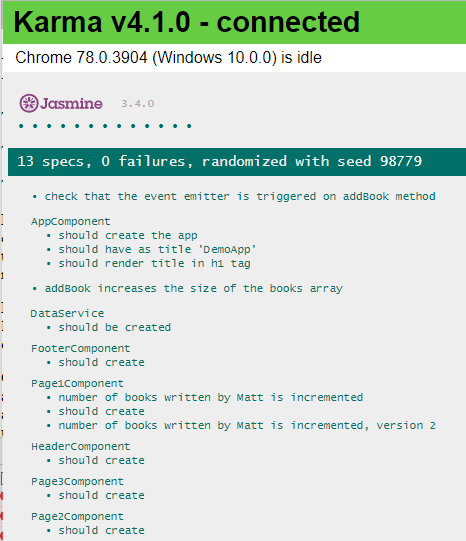


**Test**

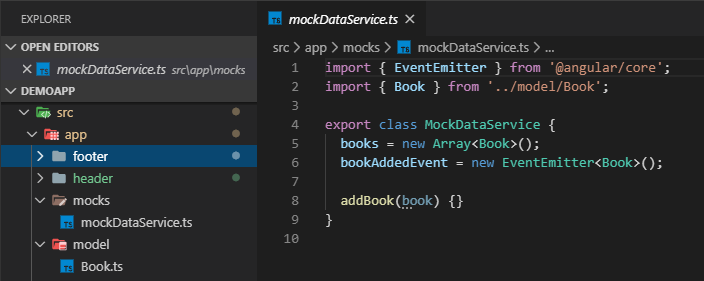


**Another way of testing**



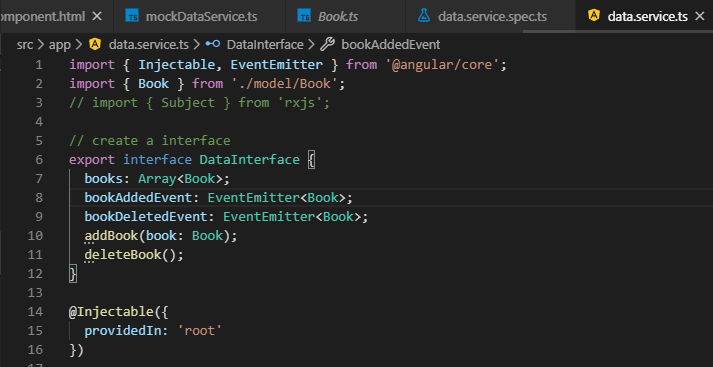


**Mocking Services:**

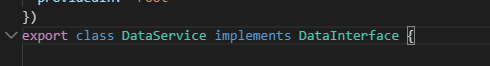


**Now the version 2 injection test can use the MockDataService**

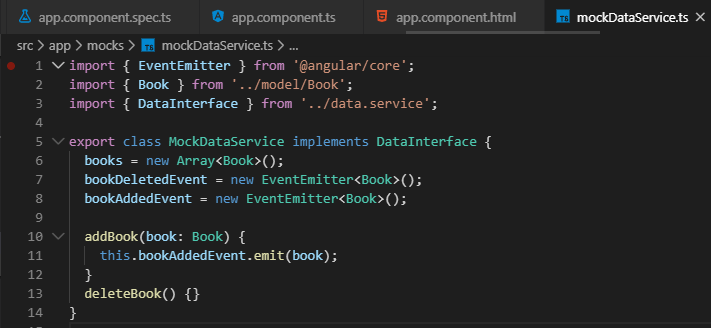
**Add an interface to the dataService.ts file**



**Add the implementation**



**Update the MockDataService**

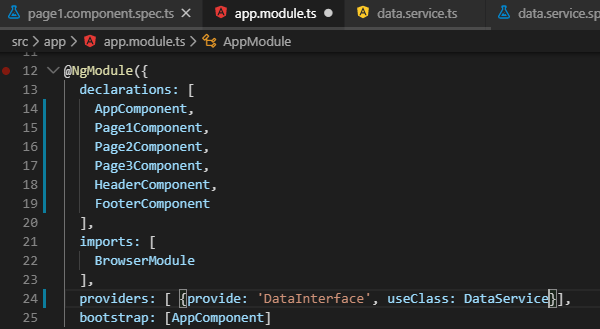


**Change all the constructor params to DataInterface**



**In the app.module.ts add the following to providers (This is repeated later to show what the error is )**

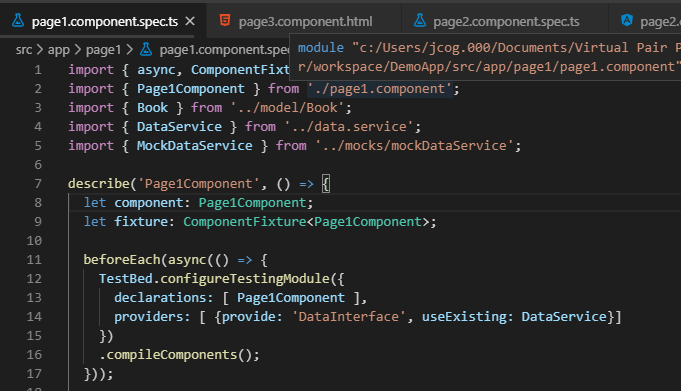




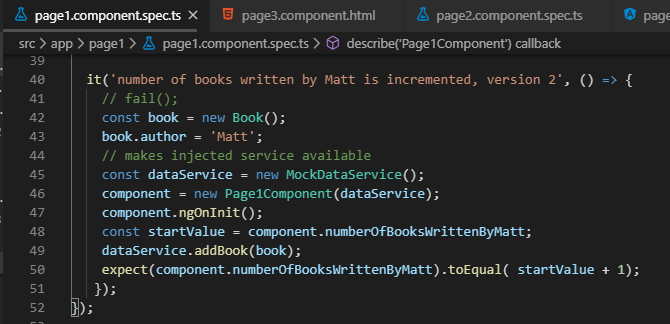
**Add the @Inject() label to all the constructors: page1.component.ts and page3.component.ts**



**Copy and paste the provider into the test class page1.component.spec.ts and page3.component.spec.ts files**

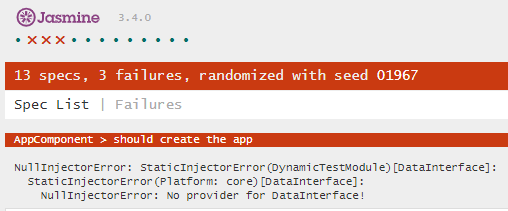


**Update position for startValue to after ngOnInit() in page1.component.spec.ts**



**Modify the app.module.ts file to have the provider:**

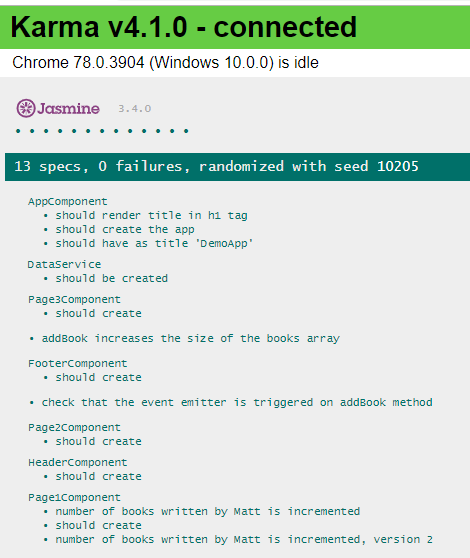
**Fixes this error:**



**Adding the providers: [{provide: ‘DataInterface’, useClass: DataService}] fixes this**

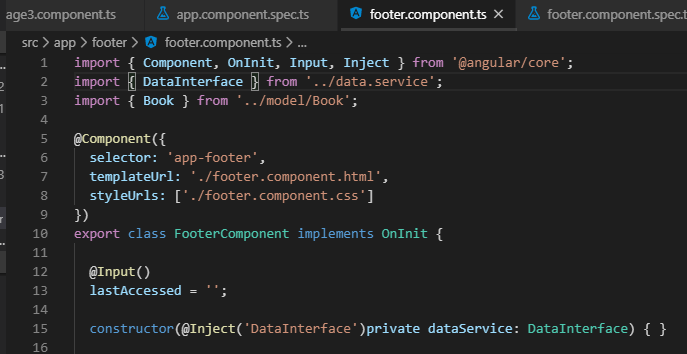






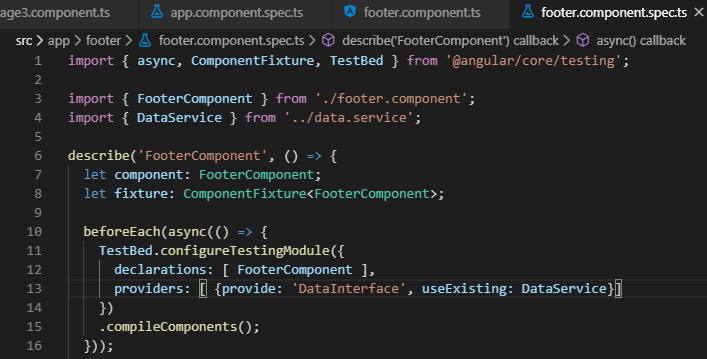
**Fix footer.component.ts refactor:**

**Add the @Inject()**



**Fix footer.component.spec.ts refactor:**

**Add the provider**



**Now the Delete works with Add Books**