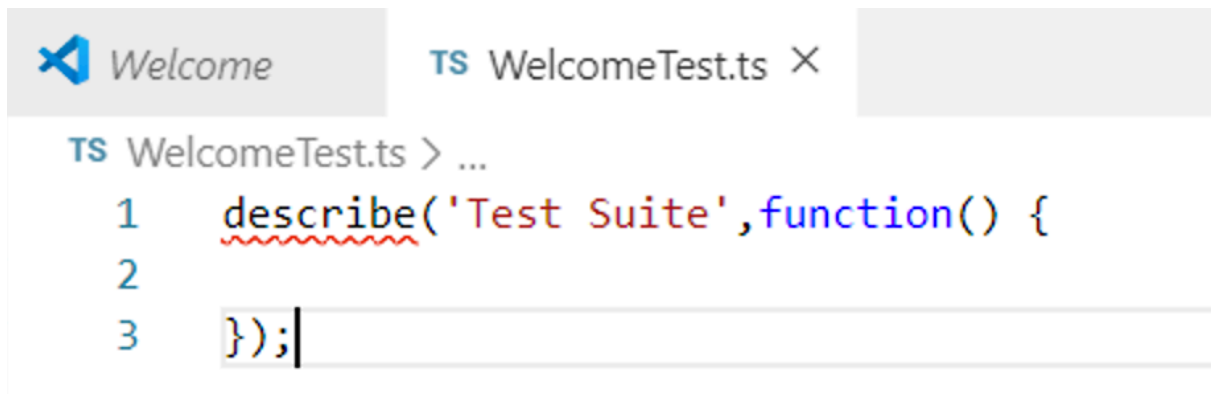


Protractor Setup Steps from Scratch:

Pre-Requisite: Node.js should be installed and environment path should be set. i.e. you should be able to execute the npm install command from anywhere in the command prompt. Once you have this setup, you can follow the steps below to set up a new protractor project

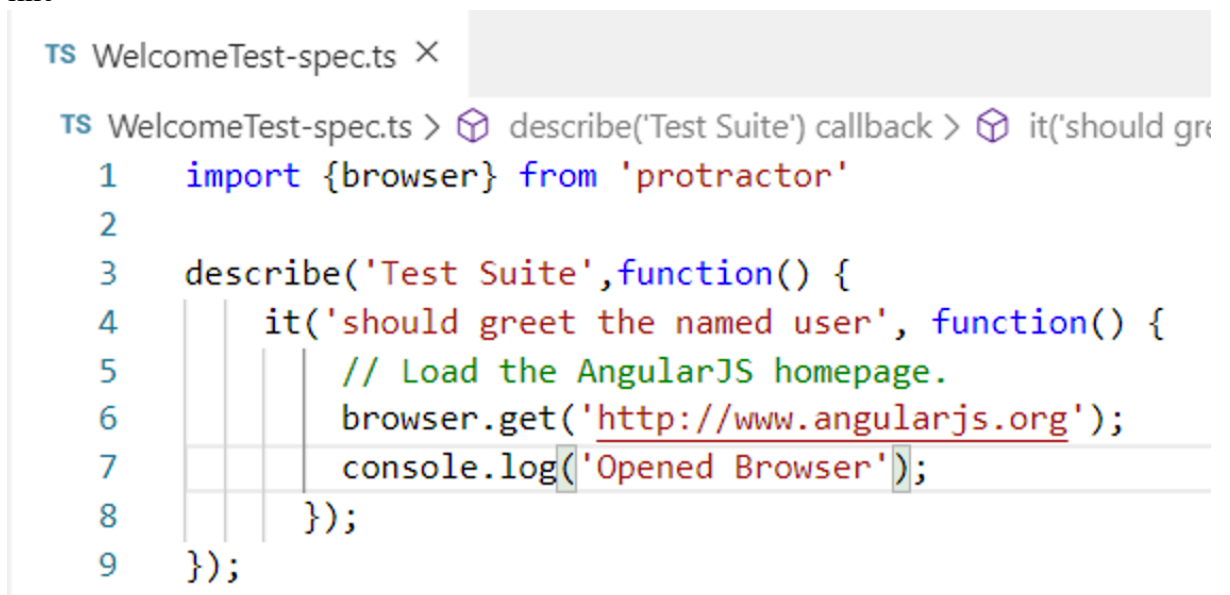
1. Create a New Folder and name it – This will be the name of your project (LearningProtractor)
2. Create a file “WelcomeTest.ts”
3. Write a describe function. It will show an error on ‘describe’



The screenshot shows the VS Code editor with a file named 'WelcomeTest.ts'. The code contains a TypeScript error on the 'describe' function. The error message is 'TS2339: Property 'describe' does not exist on type 'void'.' The code is as follows:

```
TS WelcomeTest.ts > ...
1  describe('Test Suite',function() {
2
3  });
```

4. npm install @types/jasmine. Above error should go away
5. Also install @types/jasminewd2 – this supports jasmine for webdriver
6. Create a new spec file - WelcomeTest-spec.ts. Write a spec with protractor commands like browser.get. To use this command, you will need to import the browser global variable from the protractor library like shown below. But since you have not installed protractor, you will see an error on the word protractor when you try to import on top line



The screenshot shows the VS Code editor with a file named 'WelcomeTest-spec.ts'. The code contains a TypeScript error on the 'protractor' import. The error message is 'TS2339: Property 'protractor' does not exist on type 'void'.' The code is as follows:

```
TS WelcomeTest-spec.ts >
TS WelcomeTest-spec.ts > describe('Test Suite') callback > it('should greet the named user', function() {
1  import {browser} from 'protractor'
2
3  describe('Test Suite',function() {
4      it('should greet the named user', function() {
5          // Load the AngularJS homepage.
6          browser.get('http://www.angularjs.org');
7          console.log('Opened Browser');
8      });
9  });
```

7. npm install protractor - After running this command (and successful installation on command prompt), the above error on protractor keyword should go away.

8. Create a configuration file called `conf.ts`. Make sure it is TypeScript file since we want to do our development in TypeScript. Enter the following lines in the `conf.ts` file. You will see an error on the exports keyword

```
TS WelcomeTest-spec.ts TS Conf.ts X
TS Conf.ts > [🔍] config > 🔗 specs
1  import {Config} from 'protractor'
2
3  export const config :Config ={
4      seleniumAddress: 'http://localhost:4444/wd/hub',
5      specs: ['**/*.js']
6  }
```

9. Run the command `tsc Conf.ts` to create the `Conf.js` file in the same folder. While all other js files are in `jsfiles` folder, this one file should be in the base folder
10. Start the selenium server using the command: `web driver-manager start`
11. Create `tsconfig.json` file by running the command `tsc -init`. Inside this file uncomment the `outDir` configuration and provide a path like `./jsfiles`. Keep everything else as it is.

```
13  // "sourceMap": true,                /* Generate source maps */
14  // "outFile": "./",                  /* Concatenate all outputs into one file */
15  "outDir": "./jsfiles",                /* Redirect output structure to the directory */
16  // "rootDir": ".",                    /* Specify the root directory of source files */
17  // "composite": true,                 /* Enable composite bundling of the project */
```

- 12.
13. Start the typescript watcher for converting ts files to js files automatically by running the command `tsc -w`
14. `npm install @types/node --save-dev` - This will ensure that typescript has all dependencies resolved for `node.js`
15. Execute the script using command `'protractor conf.js'`.
16. If you want to setup the project to skip the steps of creating js files. Instead we can execute the ts files as spec files. To achieve this, we need to install 2 more node packages:
 1. `npm install ts-node`
 2. `npm install typescript`
 3. `tsc -init` (Ensure that you have the `.tsconfig` file created)
17. Once these 2 packages are installed, the configuration file – `Conf.ts` (Typescript file) needs to be updated as below:

```
TS WelcomeTest-spec.ts  TS Conf.ts  ●

TS Conf.ts > ...
1  //import {Config} from 'protractor'
2  //export const config :Config = {
3
4  exports.config = {
5      seleniumAddress: 'http://localhost:4444/wd/hub',
6      specs: ['*.ts'],
7      onPrepare() {
8          require('ts-node').register({
9              project: require('path').join(__dirname, './tsconfig.json')
10         });
11     }
12 }
```

```
onPrepare() {
    require('ts-node').register({
        project: require('path').join(__dirname, './tsconfig.json')
    });
}
```

18. Now we can execute the command `protractor Conf.ts` and it will execute the ts files directly without needing to create the js files in the project.

Installations to do: You can do these at once and then follow the above process.

- `npm install @types/jasmine`
- `npm install protractor`
- `npm install @types/node --save-dev`
 - The parameters `--save-dev` make sure that this dependency is not added as a part of the deliverable package.
- `npm install @types/jasminewd2`
- `npm install ts-node`
- `npm install typescript`

Command to update webdriver manager locally on windows systems

`.\node_modules\.bin\webdriver-manager update`