# GITHUB

## COPILOT FOR FRONTEND

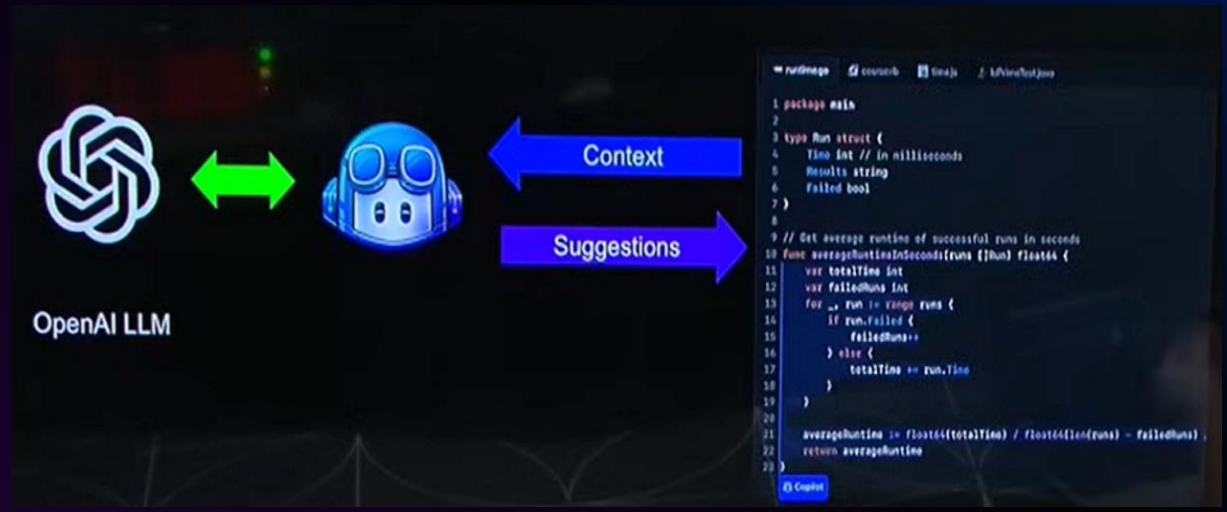
# AGENDA

- What is GitHub CoPilot?
- Code Generation – Build App
- Code Generation - Techniques
- Test Automation - Unit Test Code Generation
- Debugging Errors
- Test Automation - Playwright Test Code Generation

# WHAT IS GITHUB COPILOT?

- GitHub Copilot is an AI-powered code assistant developed by GitHub in collaboration with OpenAI
- It integrates seamlessly into popular editors (IDEs) and supports a wide range of programming languages
- It analyzes the context of your current code and comments to provide real-time, relevant code suggestions

https://docs.github.com/en/copilot

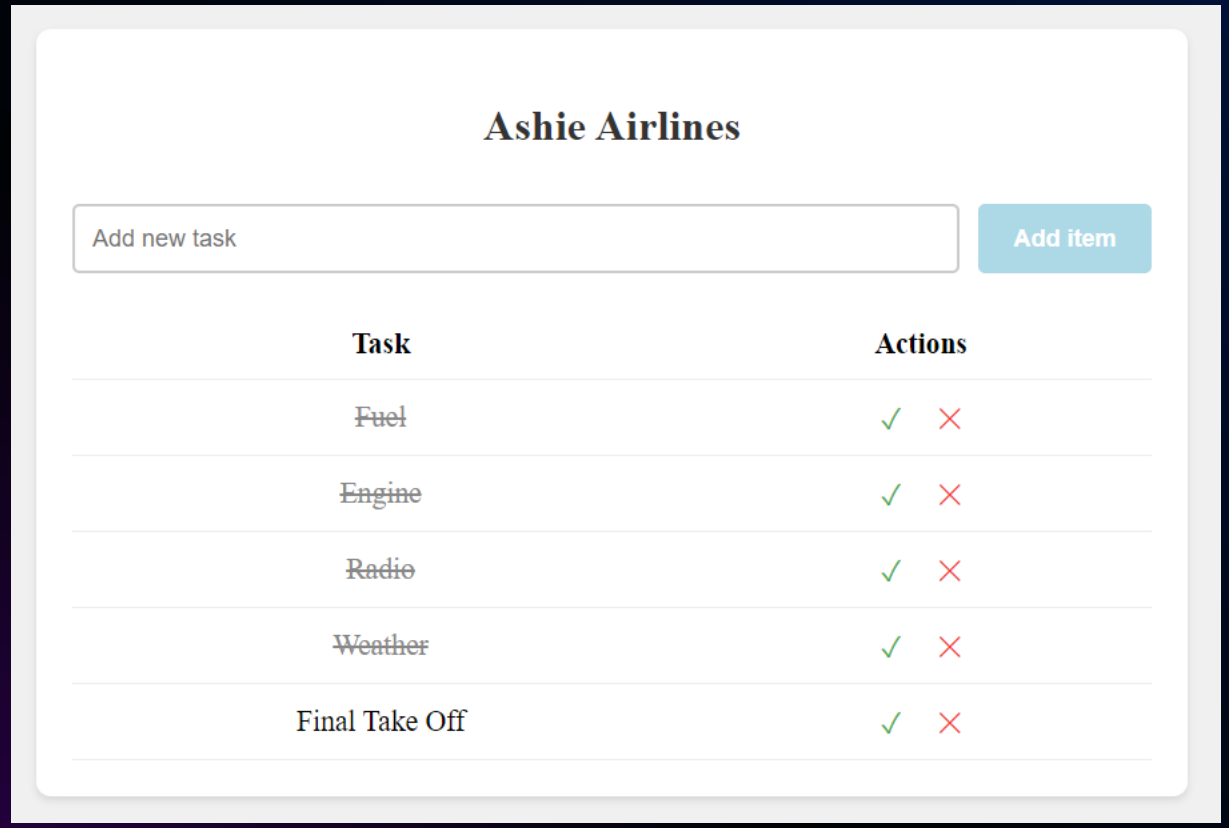



GitHub Copilot Context

- Current file and other open tabs
- Copilot chat offers options to add files, workspace, terminal, and code selections in context
- It continuously learns from your feedback and adapts to your coding style

# MY 'TO-DO' LIST APP

Create a new 'To-do-List' User Interface to mark our 'Take-off' checklist from scratch using CoPilot



# CODE GENERATION – BUILD APP

*Write me a frontend code with specifications and workflow as below*

*1. Allow user to add a to-do item by providing a text input field and an Add item button with light blue color positioned center in page. The input should be using ngModel binded to 'newTodo'*

*2. Add check mark in light green color to mark the to-do item as complete & strike that item from list out. Allow user to delete the item with cross mark from the to-do list with background color red. The input should be using ngModel binded to a list 'todoList'.*

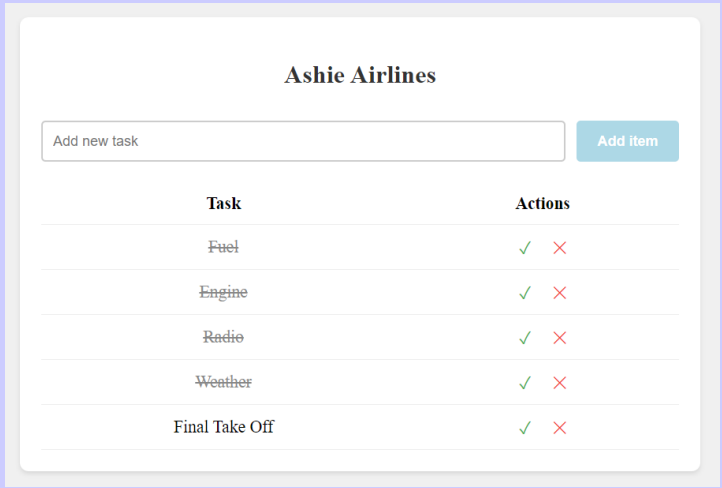
*3. Suitable title as 'Ashie Airlines' at the top & show list in a HTML table with header as Task & Actions, both positioned center in page. Make sure to have space between check mark & cross mark*

*4. Make background in white color & other user-friendly styles should be part of the separate scss file.*

*5. Define all variables & functions referred in the HTML Code in the component TodoListAppComponent*

*6. Add Comments in each file to explain the code*

*I would like to improvise on the scss file to show it a better look & feel. Provide me with changes for the complete file again*



# CODE GENERATION TECHNIQUES

```
<ul>
  <li><a routerLink="/">Home Page</a></li>
  <!--Add a new routerLink to the list for new path for todo-list -->
  <li><a routerLink="/todo-list" routerLinkActive="class2">Todo List</a></li>
  <li><a routerLink="/control-flows" routerLinkActive="class2"> Control Flows</a></li>
  <li><a routerLink="/deferred-loading" routerLinkActive="class2">Deferred Views</a></
  <li><a routerLink="/singleton" routerLinkActive="class2">Singleton</a></li>
  <li><a routerLink="/prototype" routerLinkActive="class2">Prototype</a></li>
  <li><a routerLink="/facade" routerLinkActive="class2">Facade</a></li>
  <li><a routerLink="/factory" routerLinkActive="class2">Factory</a></li>
  <li><a routerLink="/adapter" routerLinkActive="class2">Adapter</a></li>
  <li><a routerLink="/logging" routerLinkActive="class2">Logging</a></li>
  <li><a routerLink="/state" routerLinkActive="class2">State</a></li>
  <li><a routerLink="/iterator" routerLinkActive="class2">Iterator</a></li>
  <li><a routerLink="/ashieverse-art" routerLinkActive="class2">Art</a></li>
  <li><a routerLink="/apple-pie-recipe" routerLinkActive="class2">Receipe</a>
</ul>
</nav>
```

INLINE PROMPTS

```
    path: 'adapter',
    loadComponent: () => AdapterComponent
  },
  {
    path: 'logging',
    loadComponent: () => LoggingComponent
  },
  {
    path: 'iterator',
    loadComponent: () => IteratorComponent
  },
  {
    path: 'state',
    loadComponent: () => StateComponent
  },
  {
    path: 'todo-list',
    component: TodoListAppComponent
  }
];
```

Adding a new page and route for To-Do-List in an Angular project

1. Add the route for the To-Do-List in your `app.routes.ts` file.
2. Add the component to the routes array.

Here is how you can do it:

```
// Add this import at the top of your app.routes.ts file
import { TodoListAppComponent } from './todo-list-app/todo-
// Add this route to your routes array
{
  path: 'todo-list',
  component: TodoListAppComponent
}
```

This will add a new route `/todo-list` which will load the `TodoListAppComponent` when navigated to.

How can I navigate to the To-Do-List page in my Angular project?

Ask Copilot a question or type '/' for commands

COPILOT CHAT

# TEST AUTOMATION - UNIT TEST CODE GENERATION

1. **Functional Testing**

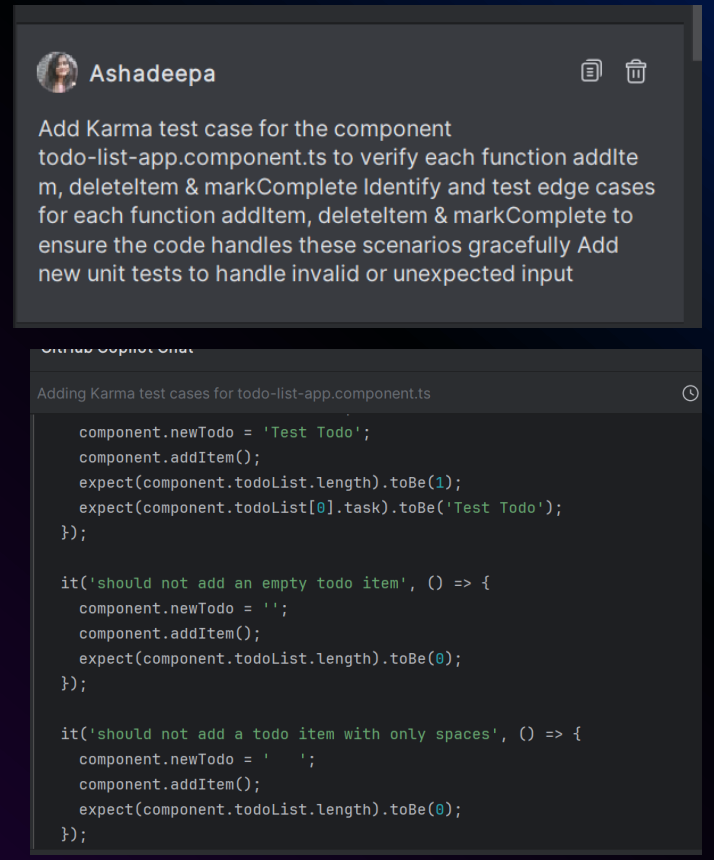
   **Prompt**: Write unit test cases to verify each function in the todo-list-app component.

2. **Edge Case Testing**

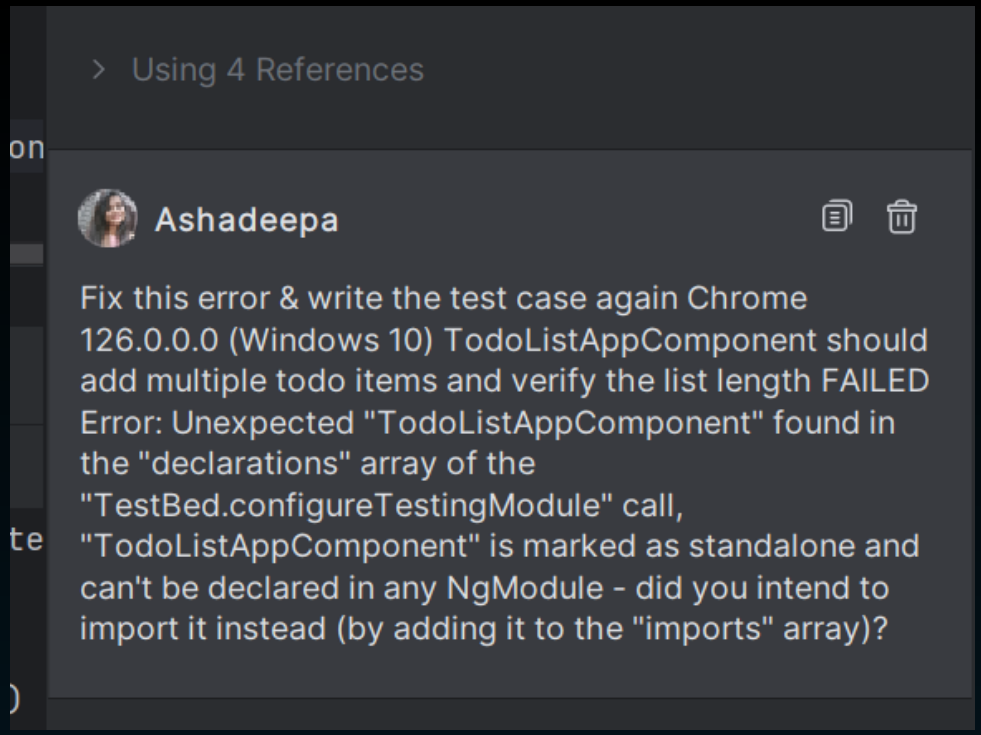
   **Prompt:** Identify and test edge cases for each function in the todo-list-app component to ensure the code handles these scenarios gracefully.

3. **Input Validation**

   **Prompt**: Add new unit tests to handle invalid or unexpected input.



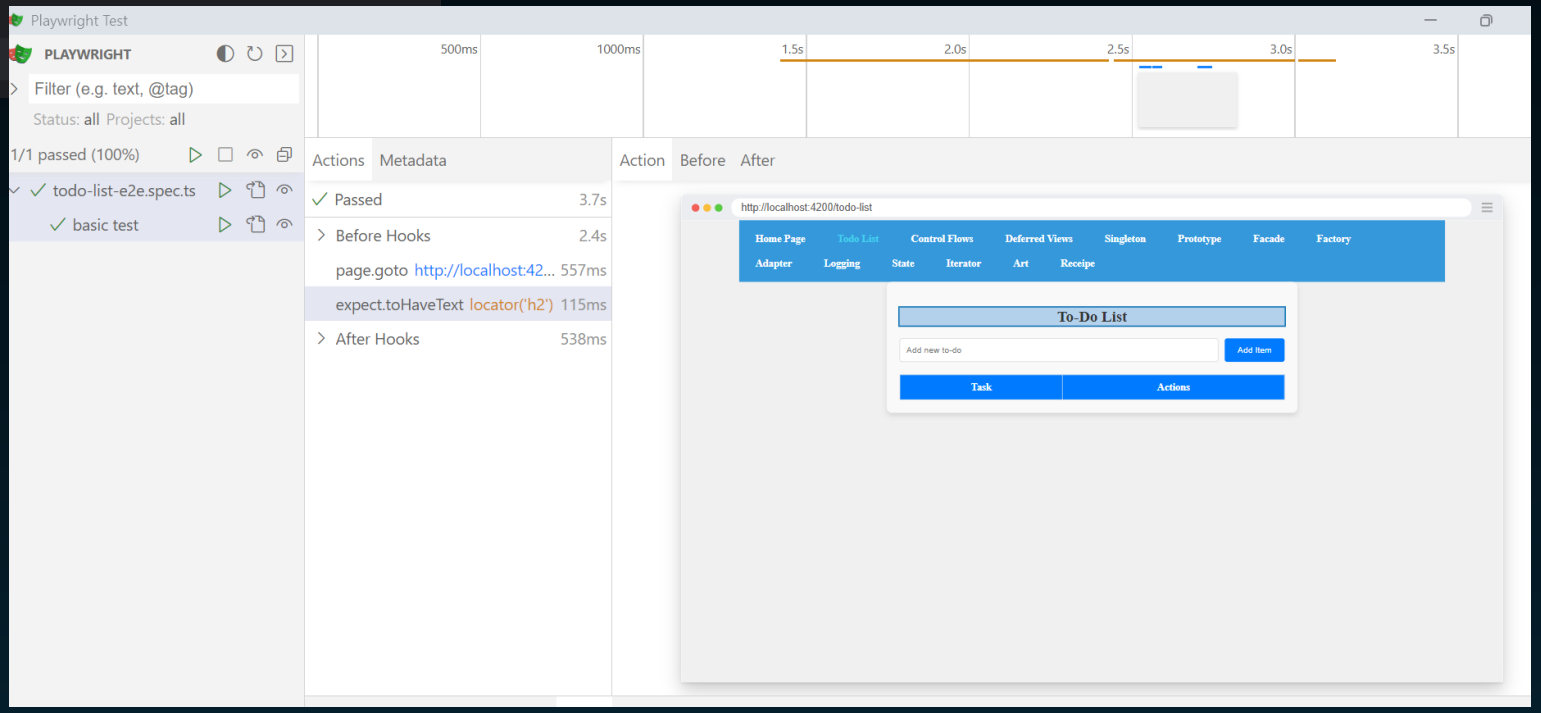
# DEBUGGING ERRORS

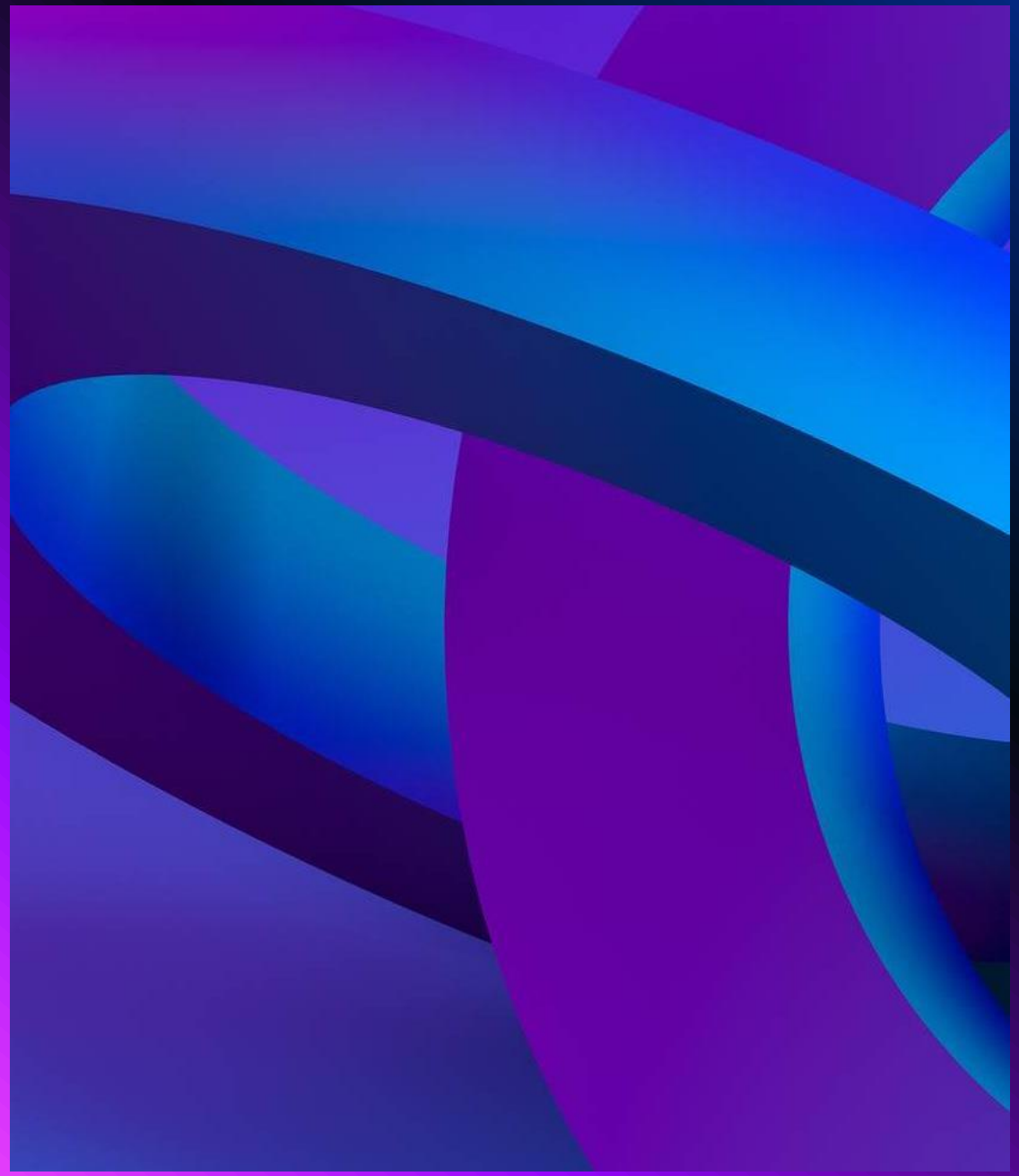


# TEST AUTOMATION - PLAYWRIGHT TEST CODE GENERATION

```
1  // Add Playwright test code here
2  import { test, expect } from '@playwright/test';
3
   new *
4  test( title: 'basic test', body: async ({ page : Page }) : Promise<void> => {
5    await page.goto( url: 'http://localhost:4200/todo-list');
6    const title : Locator = page.locator( selector: 'h2');
7    await expect(title).toHaveText( expected: 'To-Do List');
8  });
9
```

npx playwright test --ui





# WORD OF CAUTION

- Use CoPilot with caution and always take the necessary steps to properly review and test its AI-generated output.
- GitHub Copilot is a supplement to a developer's skills and should not replace manual coding entirely
- Still Requires Human Input, Monitoring, and Evaluation

# THANK YOU

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