



The World's Most Widely Adopted AI Developer Tool



Dave Burnison
Senior DevOps Advocate, GitHub



Agenda

Overview of GitHub Copilot

The Workshop

Your Feedback is important to us!



GitHub Copilot

Your AI pair programmer



GitHub Copilot

Your AI pair programmer

**Uses the context you've provided
and synthesizes code to match**

Convert comments to code

Autofill for repetitive code

Streamline test creation

Show alternatives

TS sentiment.ts write_sql.go parse_expense

```
1 #!/usr/bin/env ts-node
2
3 import { fetch } from "fetch-h2";
4
5 // Determine whether the sentiment of
6 // Use a web service
7 async function isPositive(text: string) {
8   const response = await fetch(`http://
9     method: "POST",
10    body: `text=${text}`,
11    headers: {
12      "Content-Type": "application/x-w
13    },
14  });
15   const json = await response.json();
16   return json.label === "pos";
17 }
```

 Copilot



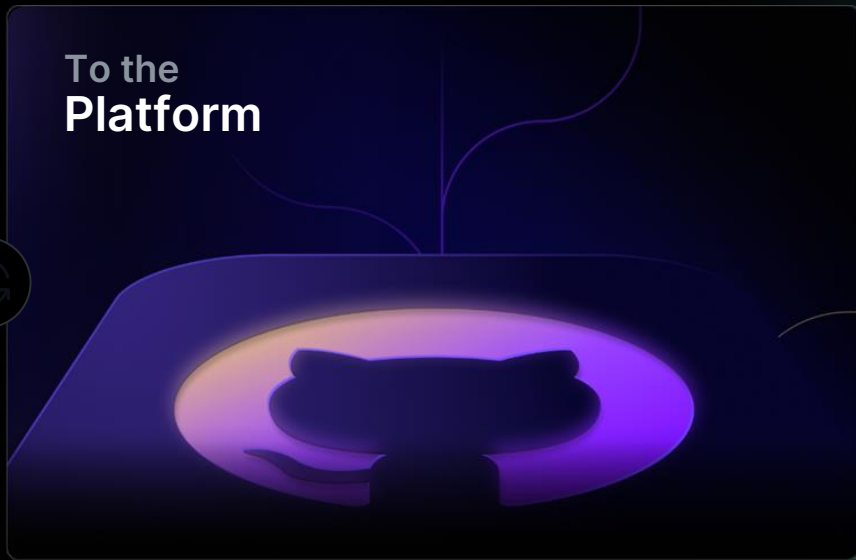
BYE SOLO

Your copilot for an AI-powered software development lifecycle.

From the
IDE and
Terminal



To the
Platform



GitHub Copilot



```
33 translation = transl
34 assert translation =
35
36
37 def juxtapose(image, text
38     """create a new imag
39     Make the new image t
40     Display the text in
41     # create a new image
42     new_image = Image.ne
43
44     # paste the original
45     new_image.paste(imag
46
47     # get a font
48     font = ImageFont.tru
49
50     # get a drawing cont
51     draw = ImageDraw.Dra
52
```

PROBLEMS OUTPUT COMMENTS

```
ryanjsalva in ~/Code/copilot_de
$ source /Users/ryanjsalva/Cod

ryanjsalva in ~/Code/copilot_de
$ /Users/ryanjsalva/Code/copil
Traceback (most recent call las
File "/Users/ryanjsalva/Code/
from google.cloud import tr
ImportError: cannot import name

ryanjsalva in ~/Code/copilot_de
$
```

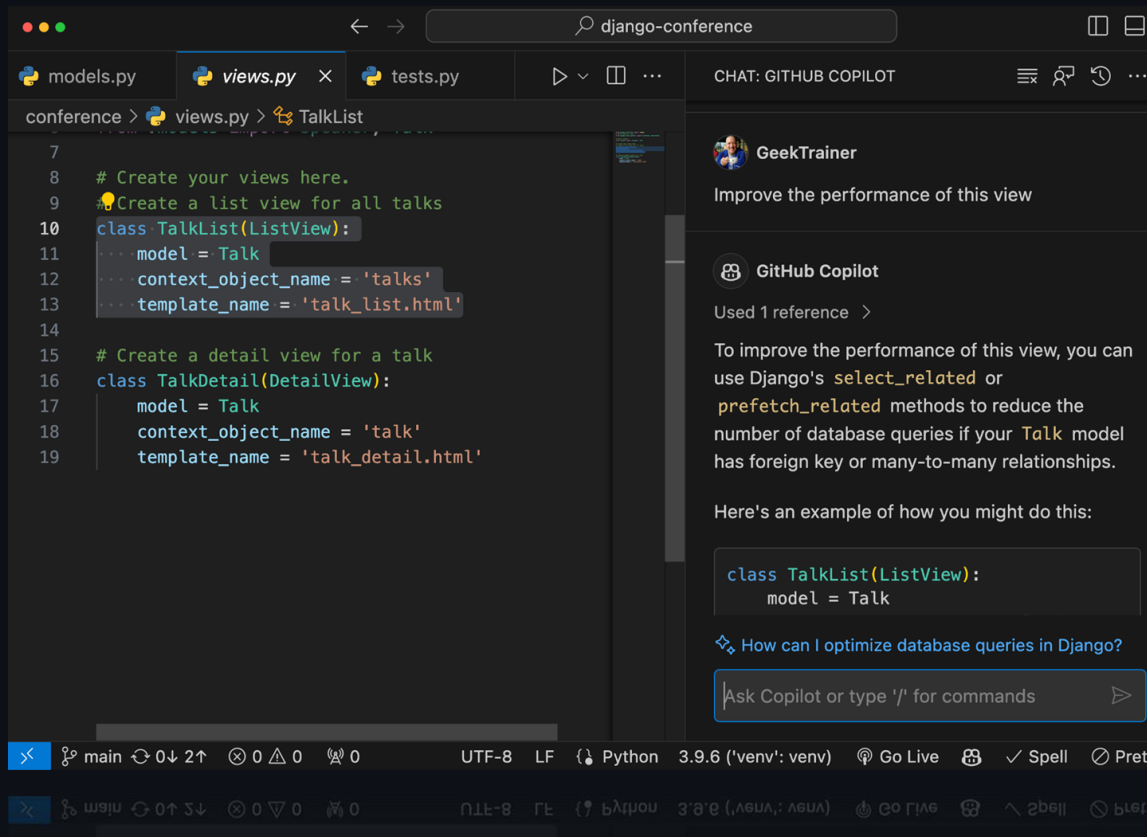
Python 3.10.0 64-bit ('.venv': venv)

GitHub Copilot Chat

ChatGPT-like experience in editor

- Get an overview of the solution
- Explain selected code
- Generate unit tests
- Propose a fix for bug
- Make code robust / secure
- Ask generic software development questions

Support VS Code, Visual Studio
and JetBrains IDEs





Prompt crafting

Helping GitHub Copilot help you

If at first you
don't succeed,
iterate!

Initial prompt

```
1 //Write a JavaScript function that finds
2 //the maximum value in an array.
3 function max(array) {
4     return Math.max.apply(null, array);
5 }
```

Second prompt

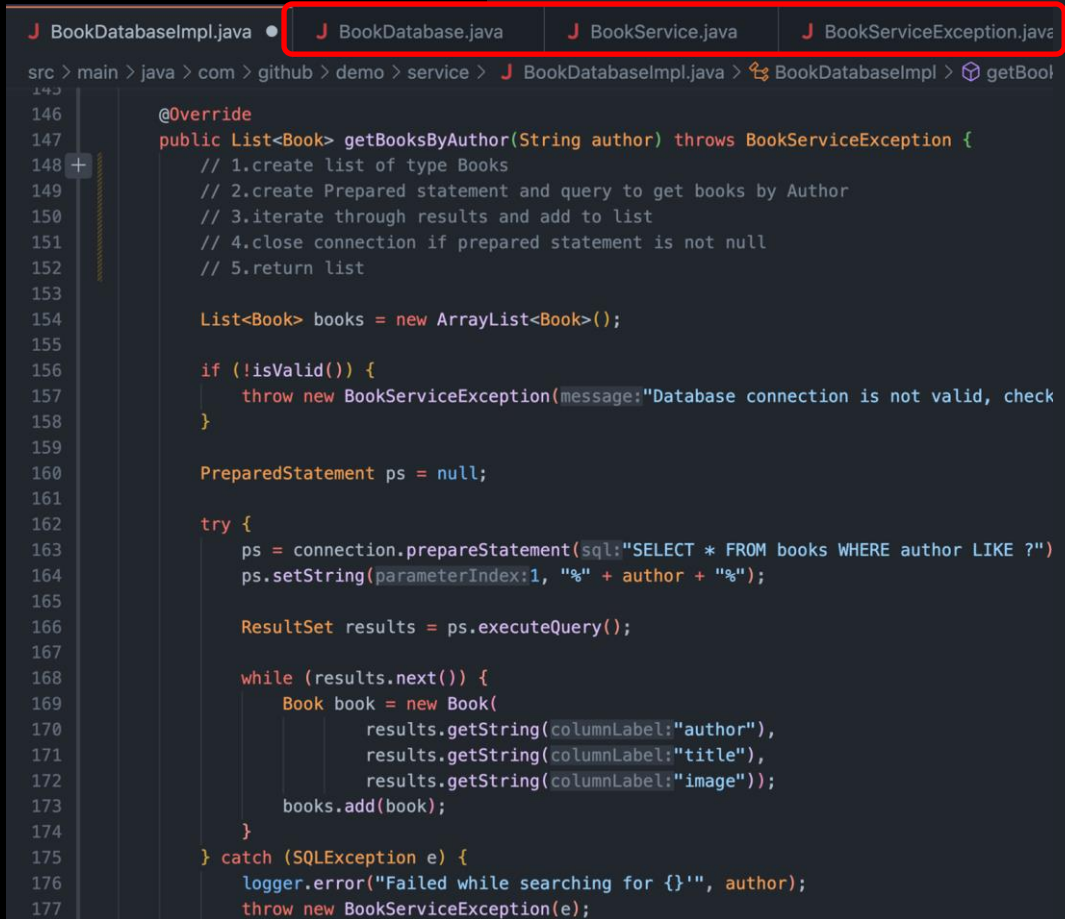
```
1 ✓ //Create a JavaScript function, `findMax`, that takes an array of
2 //and returns the string with the maximum length.
3 //Ensure that the function works correctly for arrays that are em
4 //as well as arrays that contain both strings and numbers.
5 ✓ function findMax(array) {
6     var max = array[0].length;
7     array.map(v => max = Math.max(max, v.length));
8     result = array.filter(v => v.length == max);
9     return result;
10 }
```

Provide examples in your prompt to clarify your expectations for the logic Copilot should take into consideration

calculations.py > ...

```
1  """
2  Create a Python function, `sum_array_values`, that finds
3  and returns the sum of integers in an array.
4
5  1. Verify if the array is empty and exit if it is.
6  2. Throw error if the array contains non-integer values.
7  3. Return the sum of the array values if the array is valid.
8
9  Please consider the following example data:
10 Example 1: [5, 10, 15, 20, 8]
11 Example 2: [2, 4, 6, 1, 9, 12]
12 The generated code should work correctly for arrays like above
13 """
14 #define sum_array_values function
15 def sum_array_values(array):
16     # 1. Verify if the array is empty and exit if it is.
17     if len(array) == 0:
18         return 0
19     # 2. Throw error if the array contains non-integer values.
20     for i in array:
21         if type(i) != int:
22             raise TypeError("The array contains non-integer values.")
23     # 3. Return the sum of the array values if the array is valid.
24     return sum(array)
```

**Keep files open that
are relevant to the
requirements of your
current file.**



```
J BookDatabaseImpl.java • J BookDatabase.java J BookService.java J BookServiceException.java
src > main > java > com > github > demo > service > J BookDatabaseImpl.java > BookDatabaseImpl > getBoo

146 @Override
147 public List<Book> getBooksByAuthor(String author) throws BookServiceException {
148     // 1.create list of type Books
149     // 2.create Prepared statement and query to get books by Author
150     // 3.iterate through results and add to list
151     // 4.close connection if prepared statement is not null
152     // 5.return list
153
154     List<Book> books = new ArrayList<Book>();
155
156     if (!isValid()) {
157         throw new BookServiceException(message:"Database connection is not valid, check
158     }
159
160     PreparedStatement ps = null;
161
162     try {
163         ps = connection.prepareStatement(sql:"SELECT * FROM books WHERE author LIKE ?")
164         ps.setString(parameterIndex:1, "%" + author + "%");
165
166         ResultSet results = ps.executeQuery();
167
168         while (results.next()) {
169             Book book = new Book(
170                 results.getString(columnLabel:"author"),
171                 results.getString(columnLabel:"title"),
172                 results.getString(columnLabel:"image"));
173             books.add(book);
174         }
175     } catch (SQLException e) {
176         logger.error("Failed while searching for {}", author);
177         throw new BookServiceException(e);
```

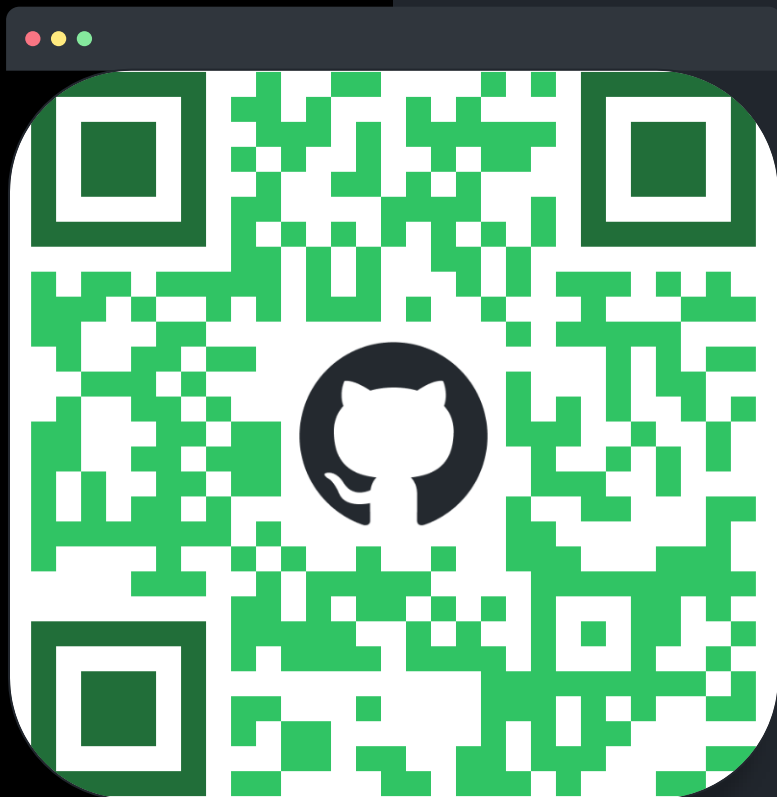
**Above all else,
go with the flow**



The workshop

That's great and all... But when can I write code?

Setup and Access

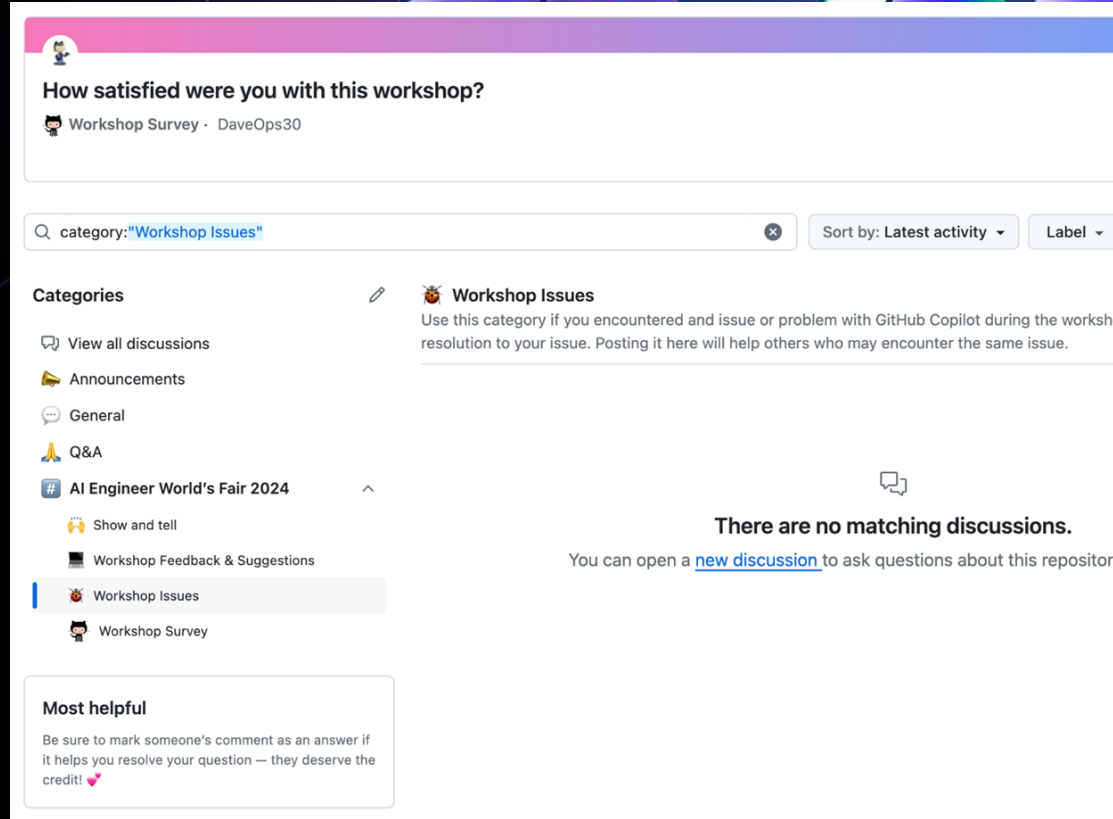


<https://gh.io/aicamp-workshop>

Need Help?

GitHub Discussions

Use the “Workshop Issues”
category



How satisfied were you with this workshop?

Workshop Survey · DaveOps30

category: "Workshop Issues" Sort by: Latest activity Label

Categories

- View all discussions
- Announcements
- General
- Q&A
- AI Engineer World's Fair 2024
 - Show and tell
 - Workshop Feedback & Suggestions
 - Workshop Issues**
 - Workshop Survey

Workshop Issues

Use this category if you encountered and issue or problem with GitHub Copilot during the workshop resolution to your issue. Posting it here will help others who may encounter the same issue.

There are no matching discussions.

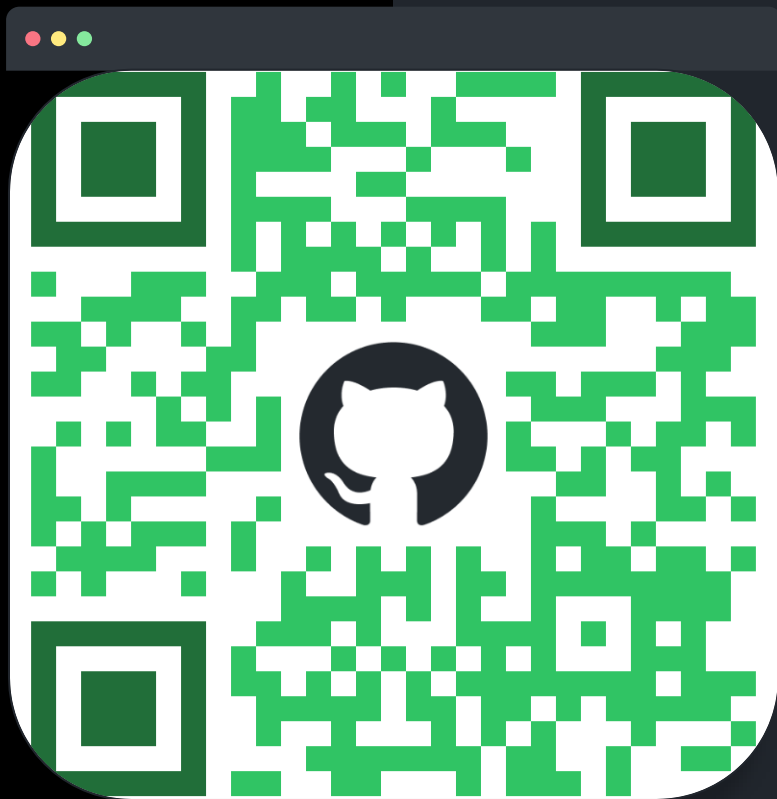
You can open a [new discussion](#) to ask questions about this repository.

Most helpful

Be sure to mark someone's comment as an answer if it helps you resolve your question — they deserve the credit! 💖

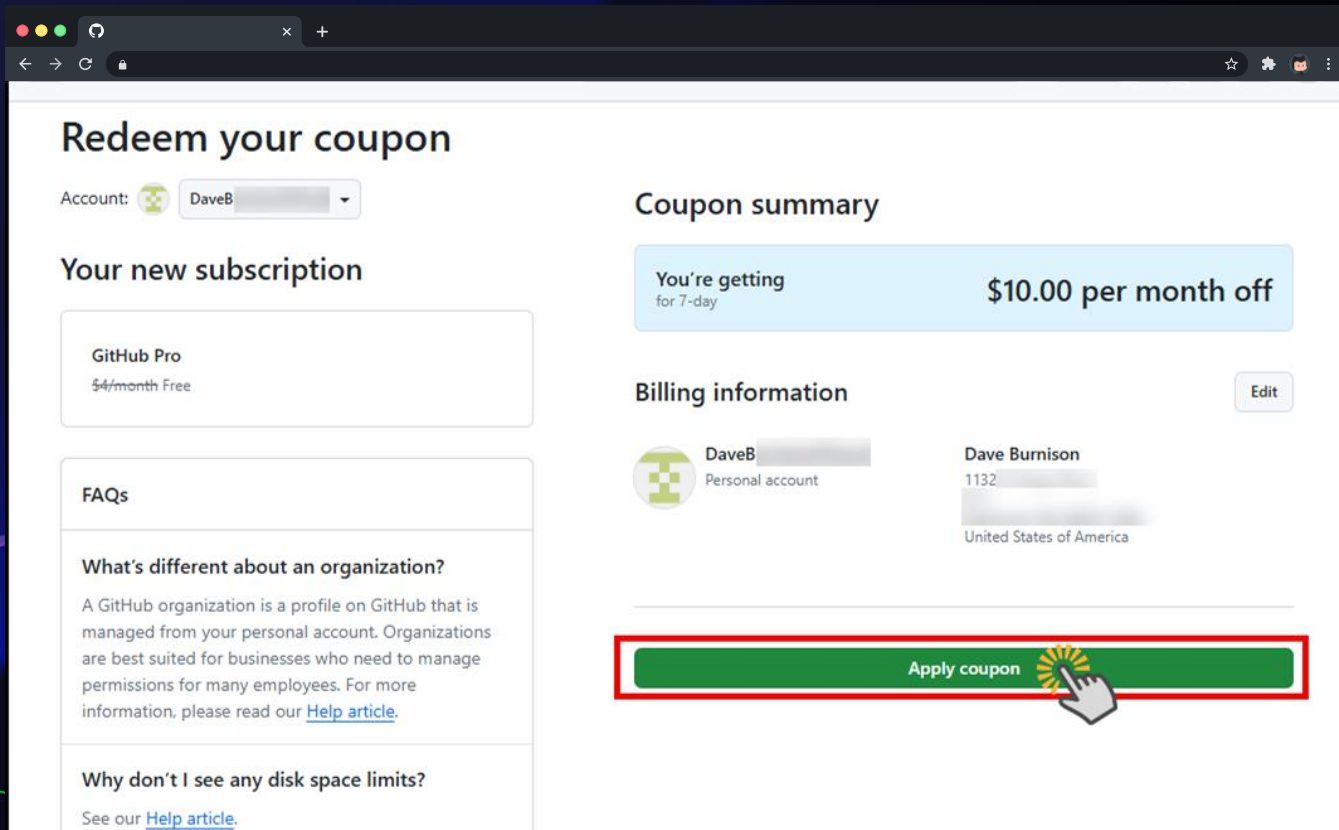
<https://github.com/DaveOps30/copilot-hands-on/discussions/categories/workshop-issues>

GitHub Copilot Coupon




<https://gh.io/cfp-sea24aic>

Redeem Your Coupon



Redeem your coupon

Account:  DaveB ▾

Your new subscription

GitHub Pro
\$4/month Free

FAQs

What's different about an organization?

A GitHub organization is a profile on GitHub that is managed from your personal account. Organizations are best suited for businesses who need to manage permissions for many employees. For more information, please read our [Help article](#).

Why don't I see any disk space limits?


See our [Help article](#).

Coupon summary


You're getting for 7-day

\$10.00 per month off

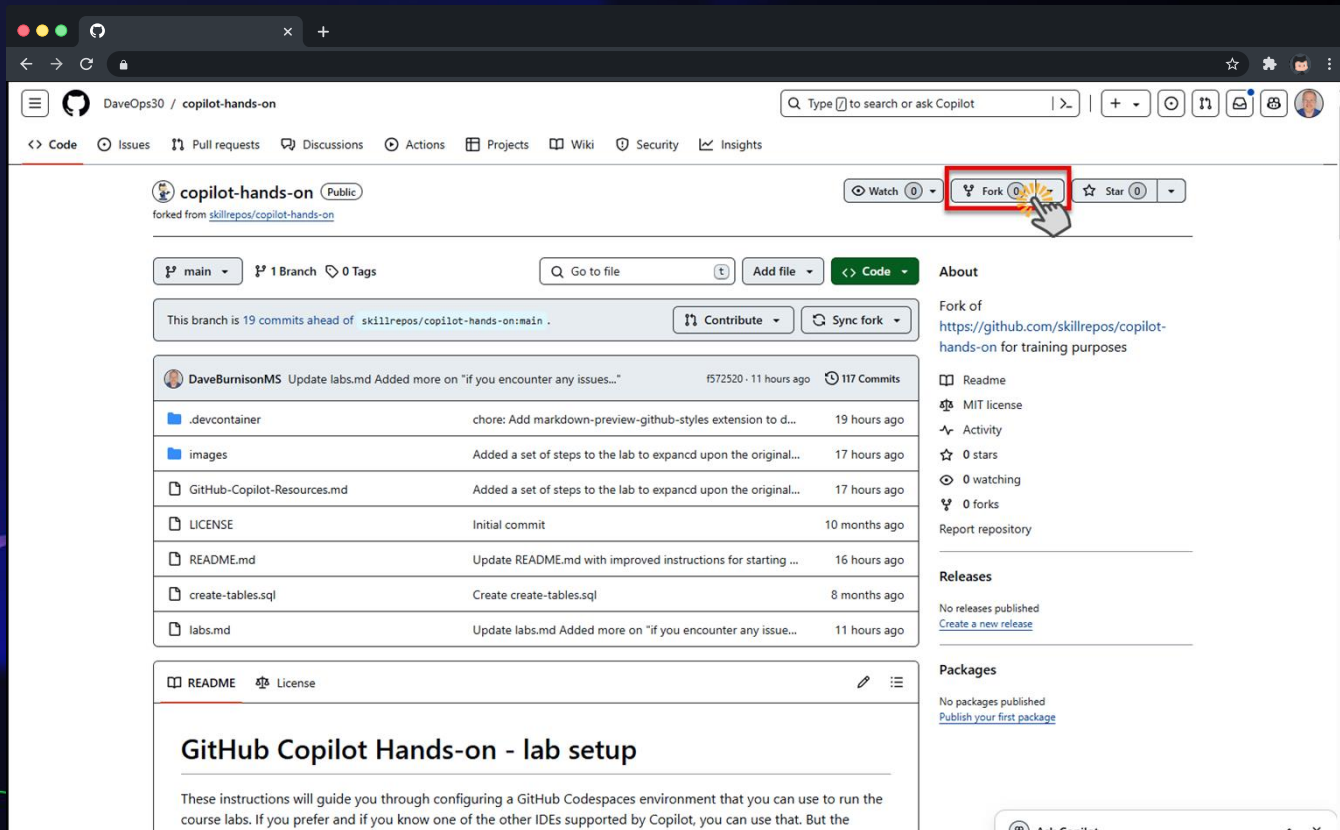
Billing information Edit

 DaveB
Personal account

Dave Burnison
1132
United States of America

Apply coupon 

Fork This Repo



GitHub repository page for **copilot-hands-on** (Public) by DaveBurnisonMS. The repository is a fork of [skillrepos/copilot-hands-on](https://github.com/skillrepos/copilot-hands-on).

Buttons: Watch (0), Fork (0), Star (0).

Branches: main (1 Branch), Tags: 0 Tags.

Search: Go to file, Add file, Code.

Contributions: This branch is 19 commits ahead of skillrepos/copilot-hands-on:main. Buttons: Contribute, Sync fork.

Author	Commit Message	Time Ago	Commits
DaveBurnisonMS	Update labs.md Added more on "if you encounter any issues..."	f572520 · 11 hours ago	117 Commits
	.devcontainer chore: Add markdown-preview-github-styles extension to d...	19 hours ago	
	images Added a set of steps to the lab to expand upon the original...	17 hours ago	
	GitHub-Copilot-Resources.md Added a set of steps to the lab to expand upon the original...	17 hours ago	
	LICENSE Initial commit	10 months ago	
	README.md Update README.md with improved instructions for starting ...	16 hours ago	
	create-tables.sql Create create-tables.sql	8 months ago	
	labs.md Update labs.md Added more on "if you encounter any issue..."	11 hours ago	

Buttons: README, License.

GitHub Copilot Hands-on - lab setup

These instructions will guide you through configuring a GitHub Codespaces environment that you can use to run the course labs. If you prefer and if you know one of the other IDEs supported by Copilot, you can use that. But the

Right sidebar: About (Fork of <https://github.com/skillrepos/copilot-hands-on> for training purposes), Readme, MIT license, Activity, 0 stars, 0 watching, 0 forks, Report repository, Releases (No releases published, [Create a new release](#)), Packages (No packages published, [Publish your first package](#)).

Start Your Codespace

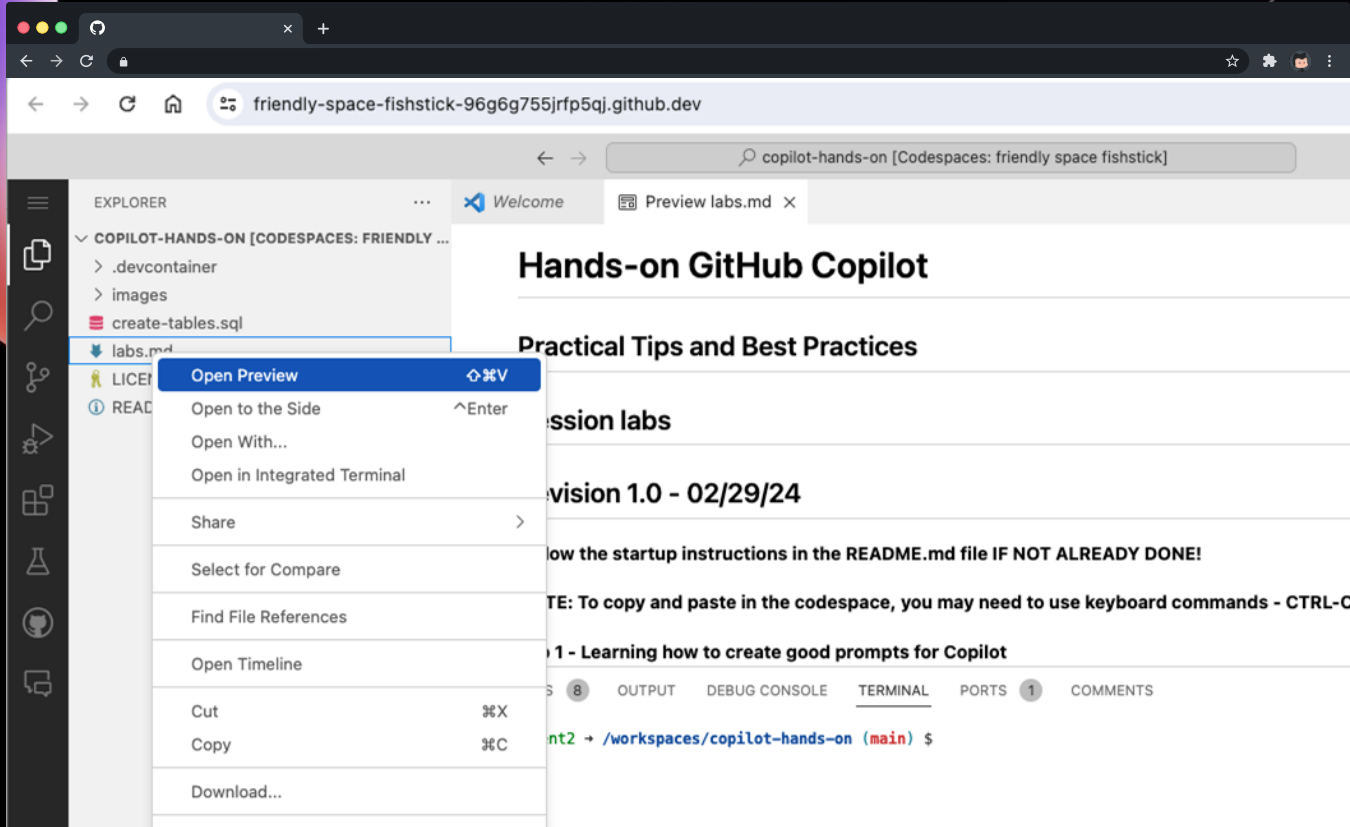
The screenshot shows the GitHub interface for the repository 'copilot-hands-on'. The repository is forked from 'skillrepos/copilot-hands-on'. The main branch is selected. The file list on the left includes '.devcontainer', 'images', 'LICENSE', 'README.md', 'create-tables.sql', and 'labs.md'. The right sidebar shows repository metadata: 'No description, website, or provided.', 'Readme', 'MIT license', 'Activity', '0 stars', '0 watching', and '0 forks'. The 'Releases' section shows 'No releases published' and a link to 'Create a new release'. The 'Packages' section is partially visible at the bottom.

Annotations for starting a Codespace:

- 1** Click the **Code** button in the top right corner.
- 2** Click the **Codespaces** button in the dropdown menu.
- 3** Click the **Create codespace on main** button in the 'No codespaces' dialog.

The 'No codespaces' dialog also includes the text: 'You don't have any codespaces with this repository checked out' and a link to 'Learn more about codespaces...'. At the bottom of the dialog, it states: 'Codespace usage for this repository is paid for by gwstudent2.'

Open the Labs



Feedback

We highly value your feedback!

- Before leaving, please take a moment to answer our two-question survey.
- If you have additional comments, please add them in Discussions under the **“Workshop Feedback & Suggestions”** category.



<https://gh.io/aicamp-survey>



Thank you