

Connecting SAP CAP (Cloud Application Programming) with GitHub

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1. Introduction

- Overview of SAP CAP and its importance in cloud-native development.
- Why version control with GitHub is essential for CAP projects.

2. Prerequisites

- Required tools (Git, BAS, GitHub account).
- Initial setup for your SAP CAP project.

3. Step-by-Step Guide to Connect SAP CAP with GitHub

- Initializing a local Git repository.
- Creating a new repository on GitHub.
- Linking local repository with GitHub.

4. Committing and Pushing Changes

- How to stage, commit, and push your changes to GitHub.
- Git commands explanation.

5.Importance of GitHub

1. Version Control & Collaboration

- Tracks changes in code with Git.
- Multiple developers can work on the same project simultaneously.

2. Backup & Deployment

- Stores code securely in the cloud.
- Supports CI/CD for automated testing and deployment.

3. Security & Project Management

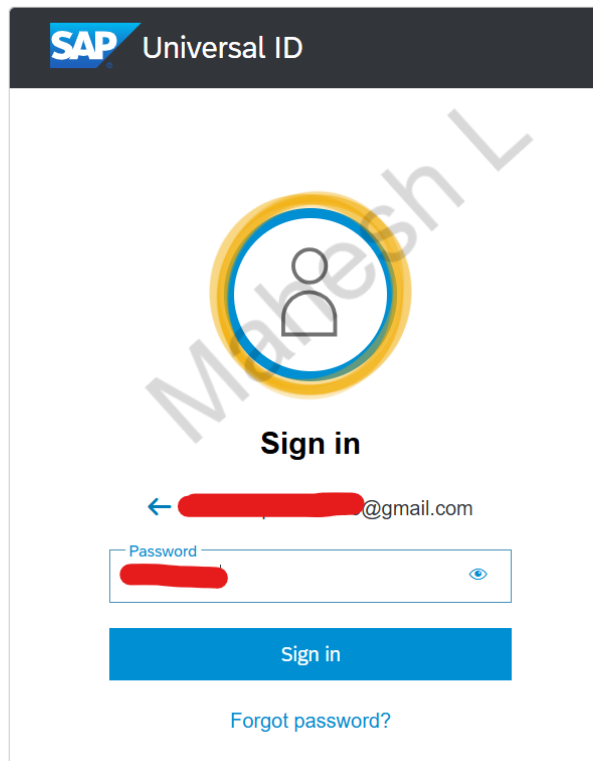
- Provides private/public repositories with access control.
- Helps manage projects with issues, pull requests, and documentation.

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1.1 Logging into SAP BTP Account

Screenshot 1: Logging into Your SAP BTP Account

1. Open your browser and navigate to the SAP Business Technology Platform (BTP) cockpit login page.
2. Enter your credentials (email and password) associated with your SAP BTP account.
3. Click **Log in** to access your BTP account dashboard.



SAP Universal ID

Sign in

← [redacted]@gmail.com

Password [redacted]

Sign in

[Forgot password?](#)

All your global accounts have been upgraded to feature set B. You can use the new entry point for global accounts in the BTP cockpit: <https://cockpit.btp.cloud.sap>. This page will redirect to there soon.

Home [Europe (Rot)]

Home - Global Accounts

All: 0

Trial Home

Welcome Mahesh Lekkidi (P2005240641),

Our records indicate that your user does not belong to any global account.

You can:

- Access Feature Set B global accounts at <https://cockpit.btp.cloud.sap>
- Use the free trial at <https://account.hanatrial.ondemand.com/>
- Purchase SAP BTP at [SAP Store](#)
- Join the partner program via the [SAP PartnerEdge – Build](#)
- Learn about SAP BTP from the [official documentation](#)
- Join our [community](#)

Learn more about the [different types of global accounts](#).

Welcome to SAP BTP Trial

Learn how to create and deploy cloud apps and gain access to a comprehensive set of platform services.

[Go To Your Trial Account](#)

Quick Tool Access



SAP Business Application Studio

Develop business applications using SAP's next-generation, Web-based IDE



CLI for BTP

Manage your trial account using the command-line interface



APIs for SAP BTP

Manage, build, and extend the core capabilities of SAP BTP

Start with Tutorials



Jump Start Your SAP HANA Cloud, SAP HANA Database

Data and Analytics

Learn the basics of working with your trial version of SAP HANA Cloud, including provisioning your instance, creating users, virtualizing data, and creating



Build an SAP Fiori elements App Using the ABAP RESTful Application Programming Model (RAP)

Application Development

Learn how to build an SAP Fiori App elements using the ABAP RESTful Application Programming Model




Connectivity to Non-SAP Applications using SAP Integration Suite

Integration

Set up your own SAP Integration Suite tenant and a third-party application, and design and execute an integration scenario that reads information from the


1.2 Accessing the CAPM Space in SAP BTP

1. After logging into your SAP BTP account, go to the **CAPM Space**.
2. On the left-hand side of the dashboard, click on the **Start** button.
3. From the available options, click on **CAPM** to enter the CAPM space.

 SAP Business Application Studio Privacy ⓘ ⏻











Dev Spaces

Create and manage your development environment according to the type of applications you want to develop. You can add extensions and tools to further enhance your development options. For more information, see the [documentation](#).

 You're using a trial version. Any dev space that hasn't been running for 30 days will be deleted. See the full list of [restrictions](#).

Create Dev Space

You are allowed a total of 2 dev spaces, with only 1 running at a time.

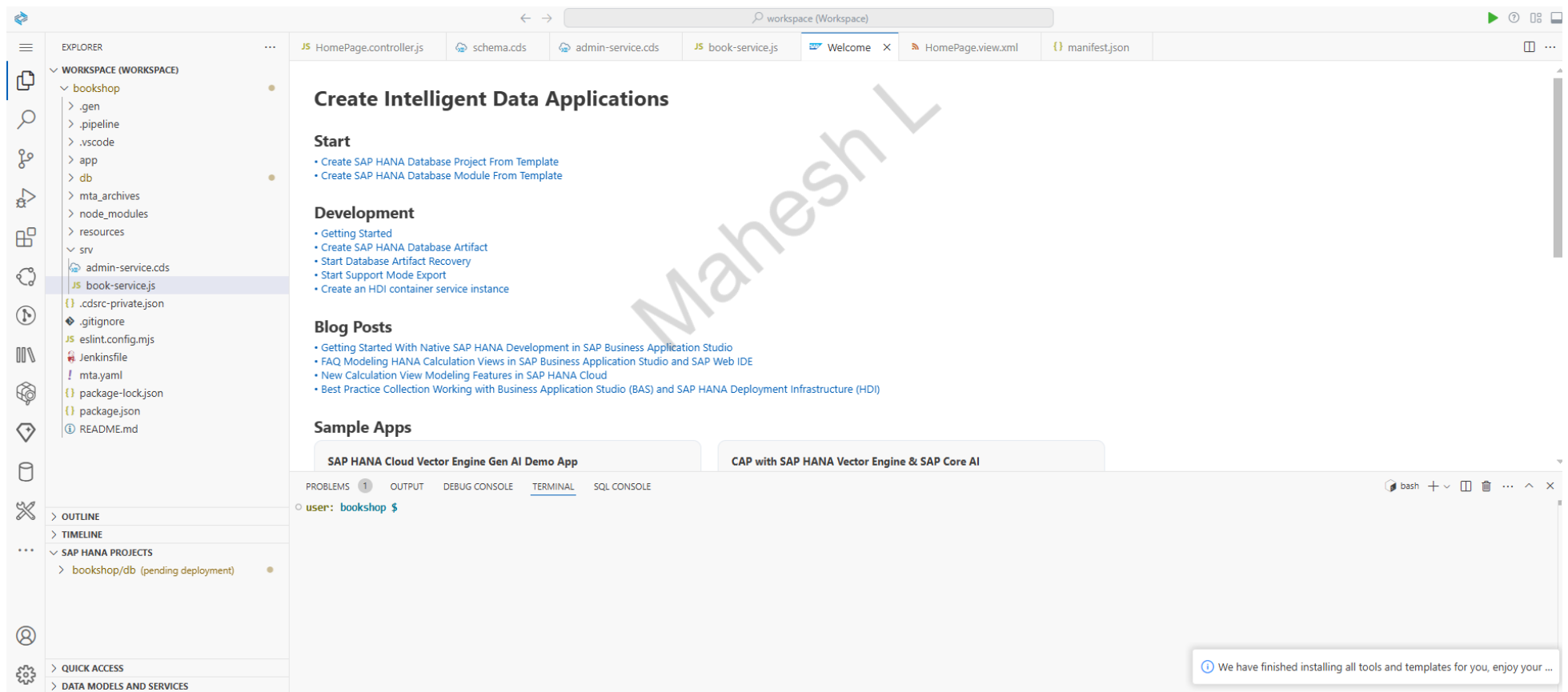
	<div>sapfiori</div> <div>SAP Fiori</div>	STOPPED	Created On 02/12/2025 10:05 AM	ID ws-mgwn6	Disk Usage 327 MB / 3.8 GB <div></div>	   
	<div>capm</div> <div>Full Stack Cloud Application</div>	STARTING	Created On 12/30/2024 11:29 AM	ID ws-vt8kb	Disk Usage 1.2 GB / 3.8 GB <div></div>	   

1.3 Creating a New bookshop CAP Project

If you don't have an existing CAP project, you can follow the steps in the document provided below to create a new one.

1. Go to the provided link for the detailed guide on how to create a new SAP CAP project.
2. Follow the steps outlined in the guide to set up your project.

https://www.linkedin.com/posts/maresh-lokkidi-8664b9135_sap-capm-steps-pdf-guide-activity-7278389861781315585-nKxN?utm_source=share&utm_medium=member_desktop&rcm=ACoAACD_I4Bx2jyujXgeNLseFsss4Zzd5zrhW0



2.1 Go to GitHub and Log In

- Open [GitHub](#) in your browser.
- Enter your credentials (username/email and password) to log in.
- If you have enabled two-factor authentication (2FA), complete the verification process.



Sign in to GitHub

Username or email address

Password [Forgot password?](#)

[Sign in](#)

[Sign in with a passkey](#)

New to GitHub? [Create an account](#)

2.2 Create a New Repository

- After logging into GitHub, click on the "+" icon in the top-right corner.
- Select **"New repository"** from the dropdown menu.

The screenshot displays the GitHub Dashboard interface. In the top-left sidebar, under the 'Top repositories' section, a green 'New' button with a plus icon is highlighted with a red rectangle. The main content area features a 'Home' section with various tutorial cards: 'Introduction to GitHub', 'GitHub Pages', 'Code with Copilot', and 'Hello GitHub Actions'. A 'Latest changes' section on the right lists recent updates. The bottom of the dashboard shows repository suggestions, including 'moveit / moveit2' and 'pybamm-team / PyBaMM'.


- Enter a **repository name**, add a description (optional), and choose the visibility (Public/Private).
- a. **Public**: Anyone can see the repository.
- b. **Private**: Only you and invited collaborators can access it.
- Click "**Create repository**" to proceed

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk (*).

Owner *

 maheshlokkidi1913

Repository name *

bookshop

✔ bookshop is available.

Great repository names are short and memorable. Need inspiration? How about [supreme-tribble](#) ?

Description (optional)

bookshop



Public

Anyone on the internet can see this repository. You choose who can commit.



Private

You choose who can see and commit to this repository.

Initialize this repository with:

☒ Add a README file

This is where you can write a long description for your project. [Learn more about READMEs.](#)

Add .gitignore

.gitignore template: None

Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)

Choose a license

License: None

A license tells others what they can and can't do with your code. [Learn more about licenses.](#)

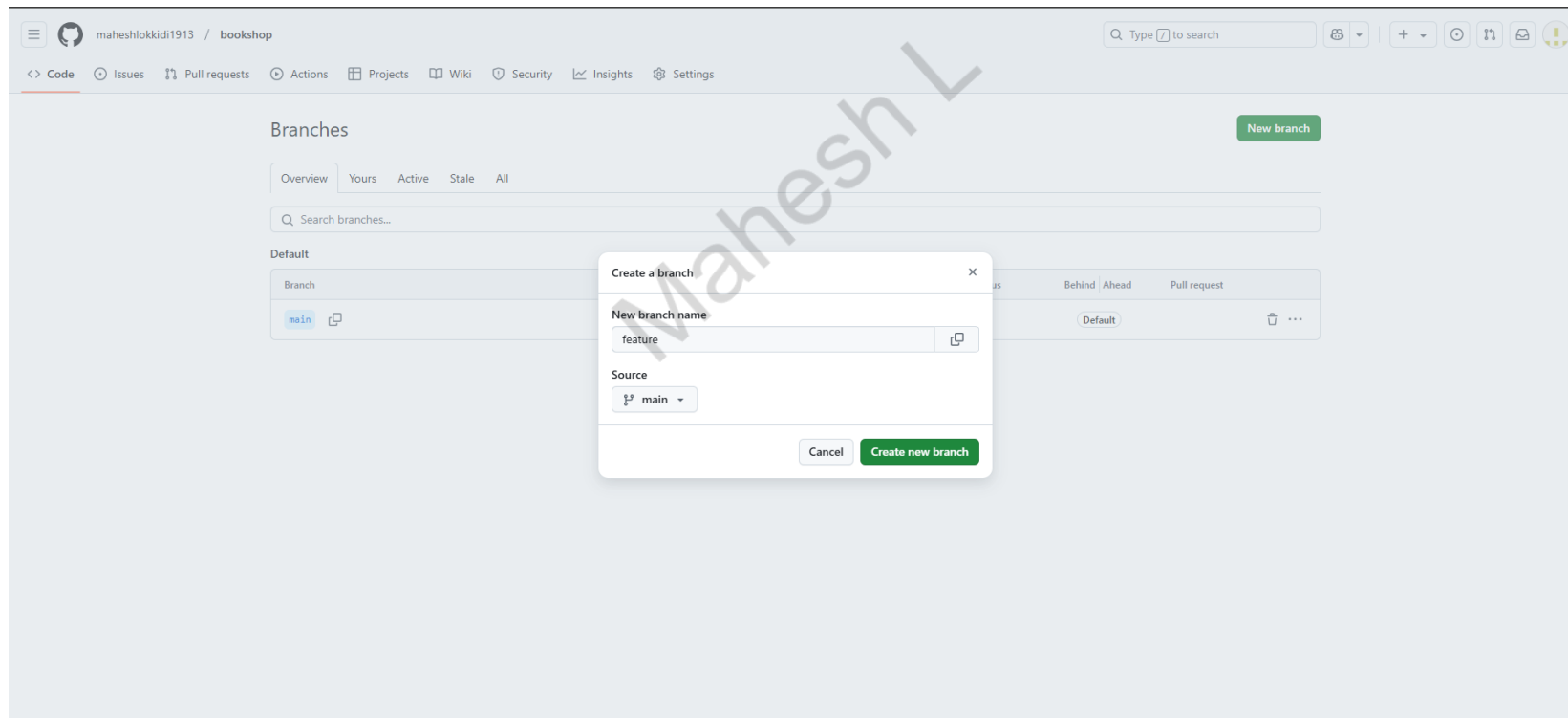
This will set [main](#) as the default branch. Change the default name in your [settings](#).

2.3 Create a Feature Branch

- After creating the repository, navigate to the **"Code"** section.
- Click on the **"main"** branch dropdown.
- Type **"feature"** as the new branch name and click **"Create branch: feature"**.

Why Do We Use Main and Feature Branches?

- **Main Branch:** This is the stable version of the project, usually used for production-ready code.
- **Feature Branch:** Developers create feature branches to work on new functionalities or fixes without affecting the main branch. Once the changes are tested and verified, they can be merged into the main branch.



Branches

New branch

OverviewYoursActiveStaleAll

Q Search branches...

Default

Branch	Updated	Check status	Behind	Ahead	Pull request
main <div></div>	<div>2 hours ago</div>				Default <div></div>

Your branches

Branch	Updated	Check status	Behind	Ahead	Pull request
feature <div></div>	<div>now</div>		0	0	<div></div>

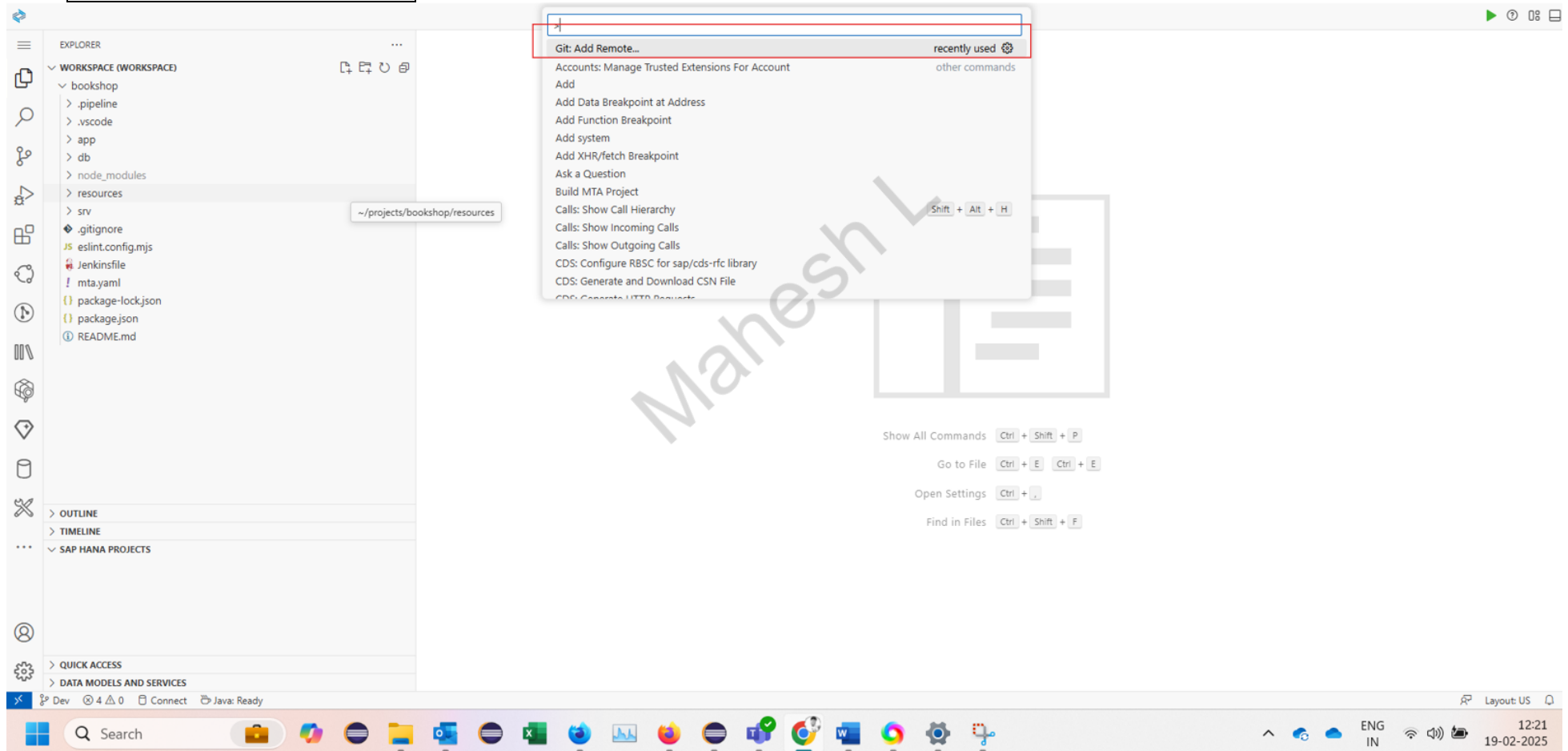
Active branches

Branch	Updated	Check status	Behind	Ahead	Pull request
feature <div></div>	<div>now</div>		0	0	<div></div>

3.1 Add Remote Repository in BAS

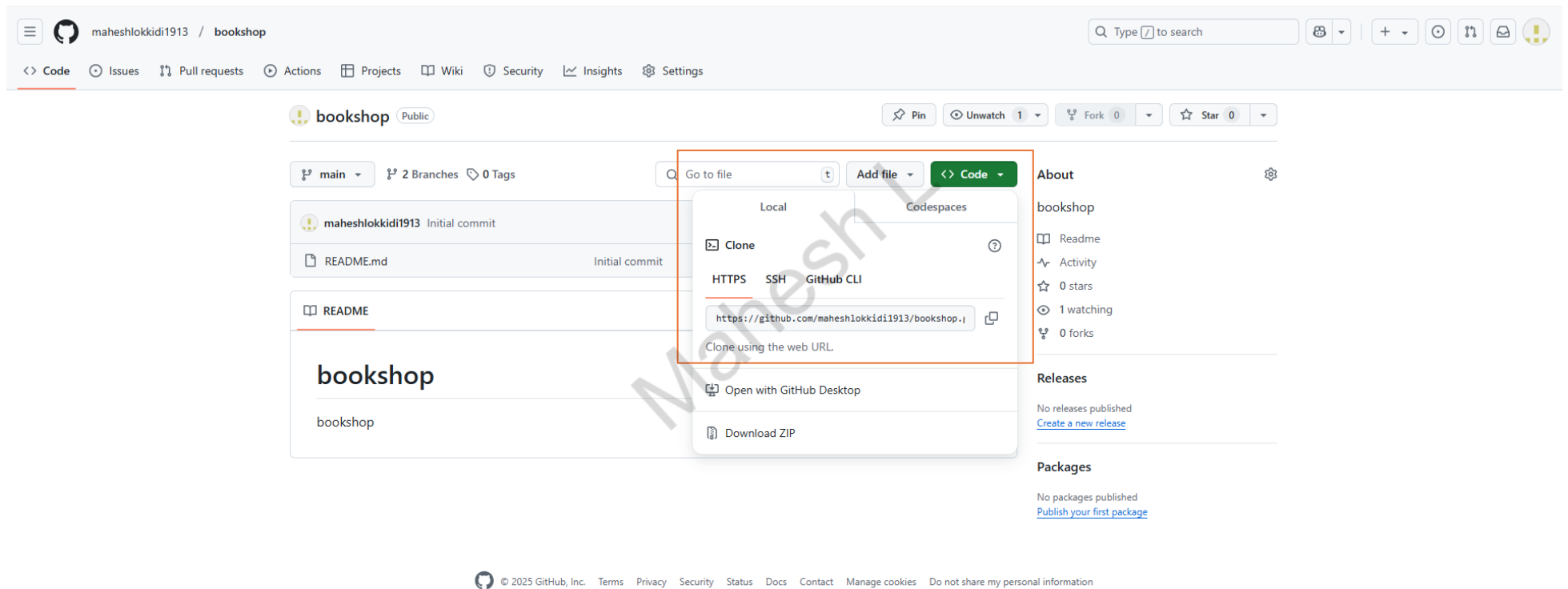
- Open **SAP Business Application Studio (BAS)**.
- Go to **View → Command Palette**.
- In the command palette, type:

Git: Add Remote



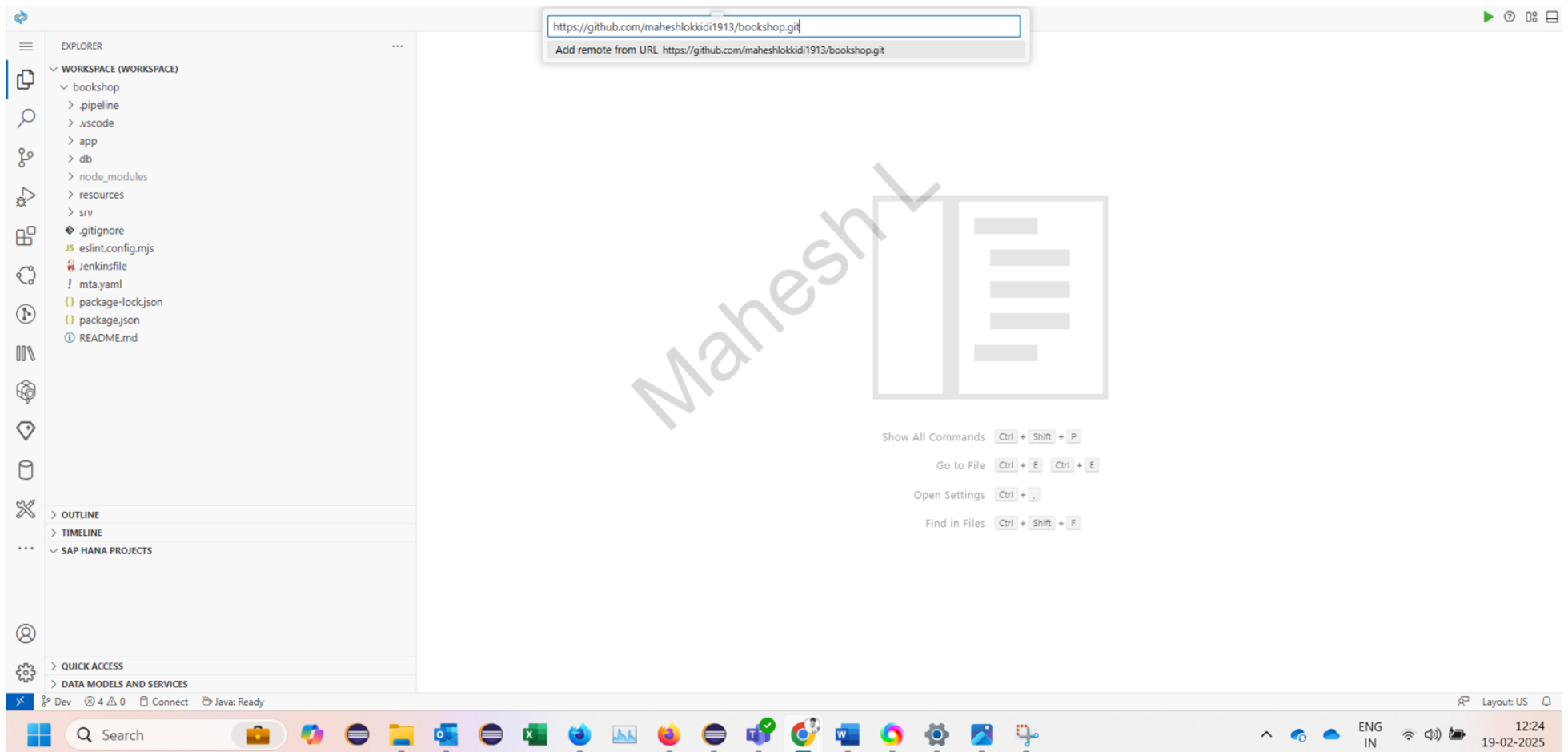
3.2 Copy GitHub Repository URL

- Open your **GitHub repository**.
- Click on the **"Code"** button.
- Under the **HTTPS** tab, copy the repository URL.
 - Example: `https://github.com/username/repository.git`



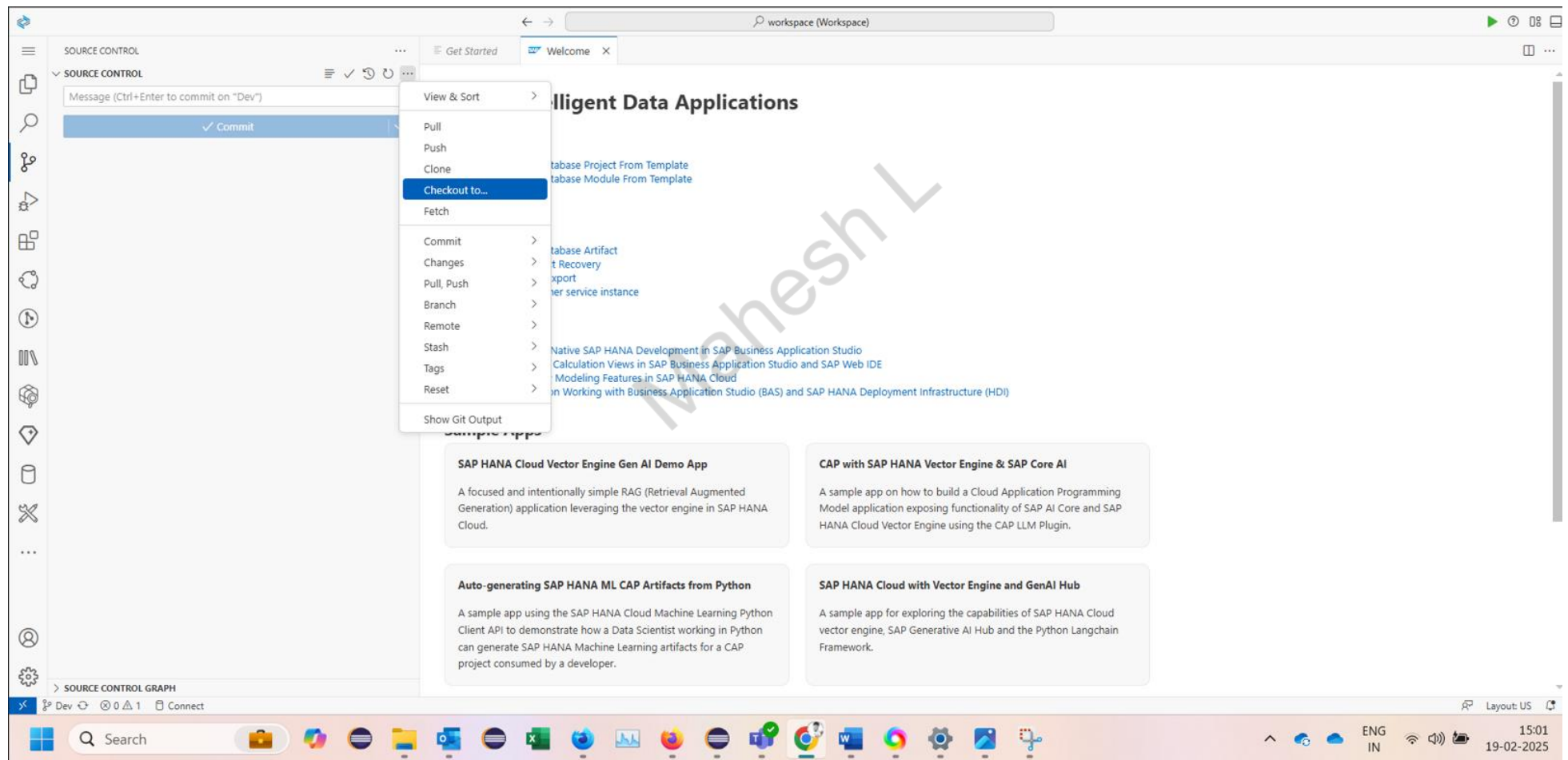
3.3 Paste Repository URL in Command Palette

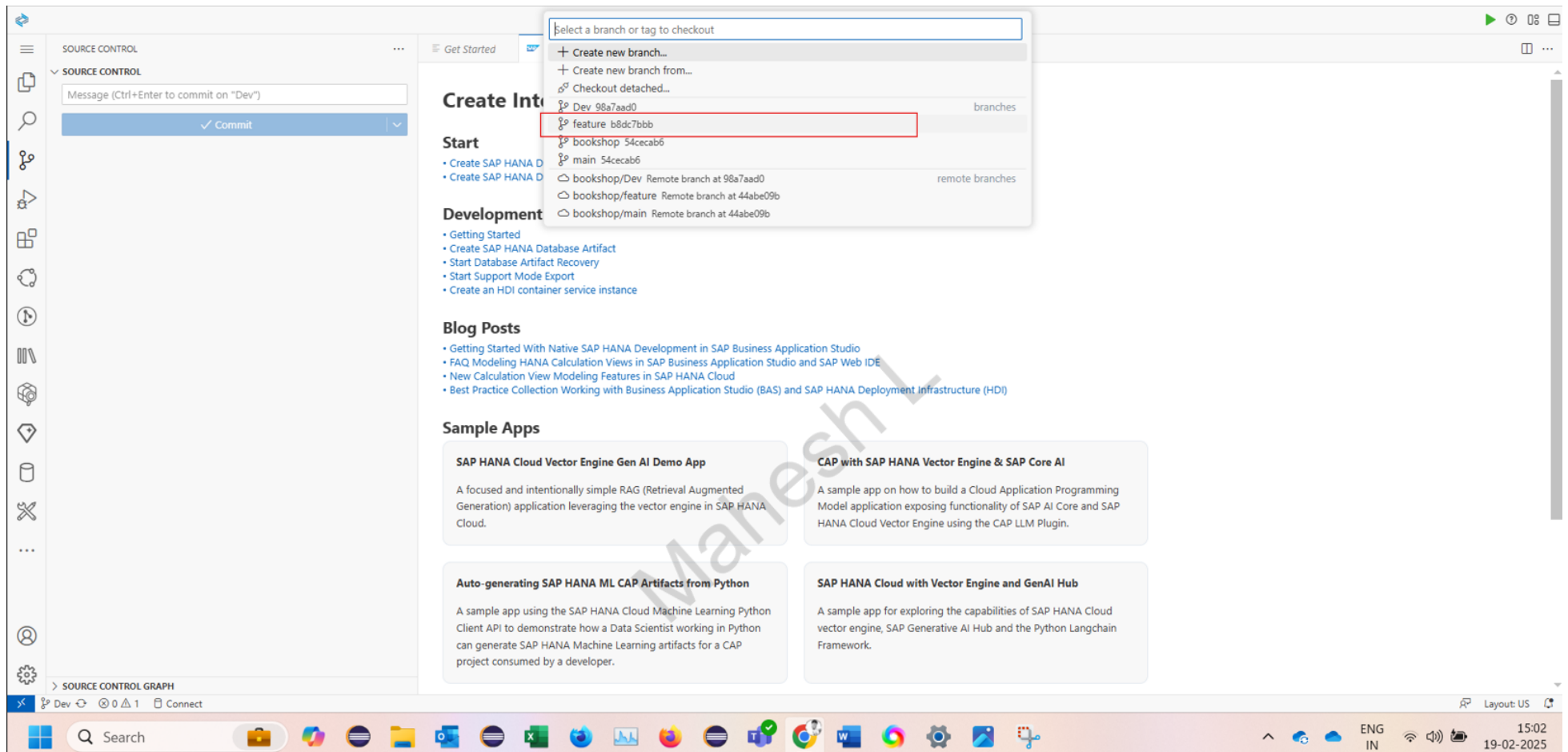
- Go back to **SAP Business Application Studio (BAS)**.
- In the **Command Palette**, after selecting "**Git: Add Remote**", paste the **GitHub repository URL** (copied in step 3.2).
- Press **Enter** to confirm



3.4 Switch to the Feature Branch

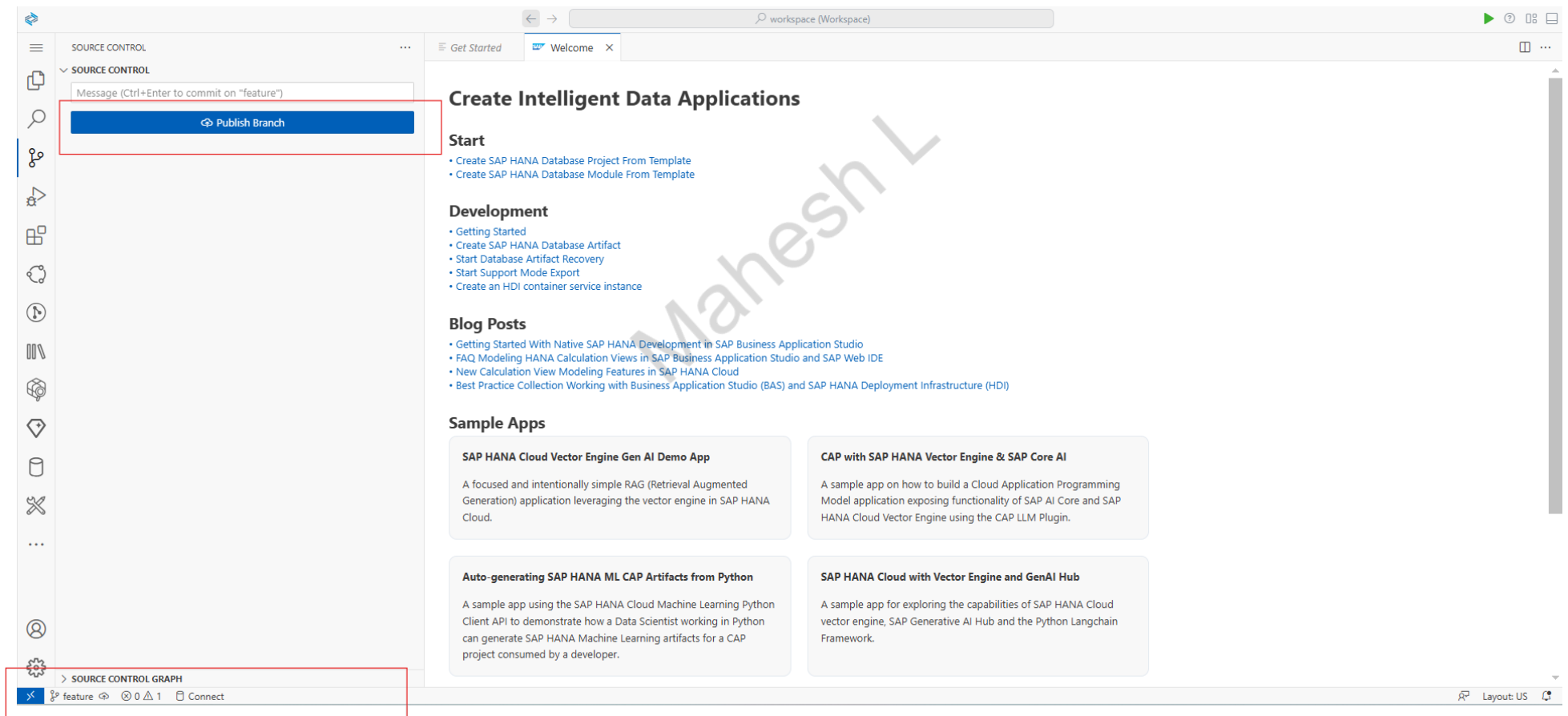
- In **SAP Business Application Studio (BAS)**, open the **Source Control** panel.
- Click on the **branch dropdown** (usually showing "main").
- Select **"feature"** to switch to the feature branch.
- If the feature branch is not listed, click **"Checkout to..."** and select **"feature"**.





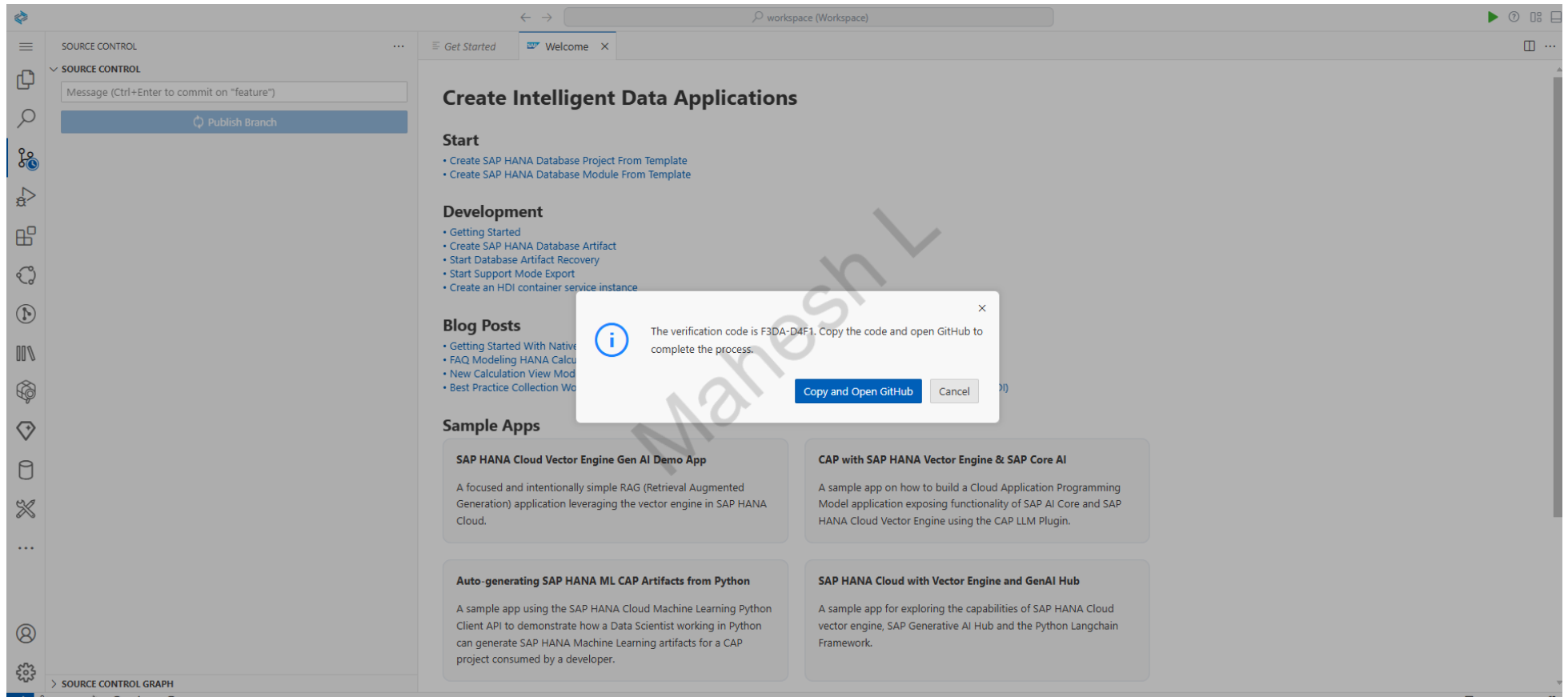
3.5 Publish the Feature Branch

- In **SAP Business Application Studio (BAS)**, open the **Source Control** panel.
- Ensure you are on the **feature** branch (as selected in step 3.4).
- Click on the **"Publish Branch"** button to push the feature branch to GitHub.
- This makes the branch available in the remote repository for collaboration.



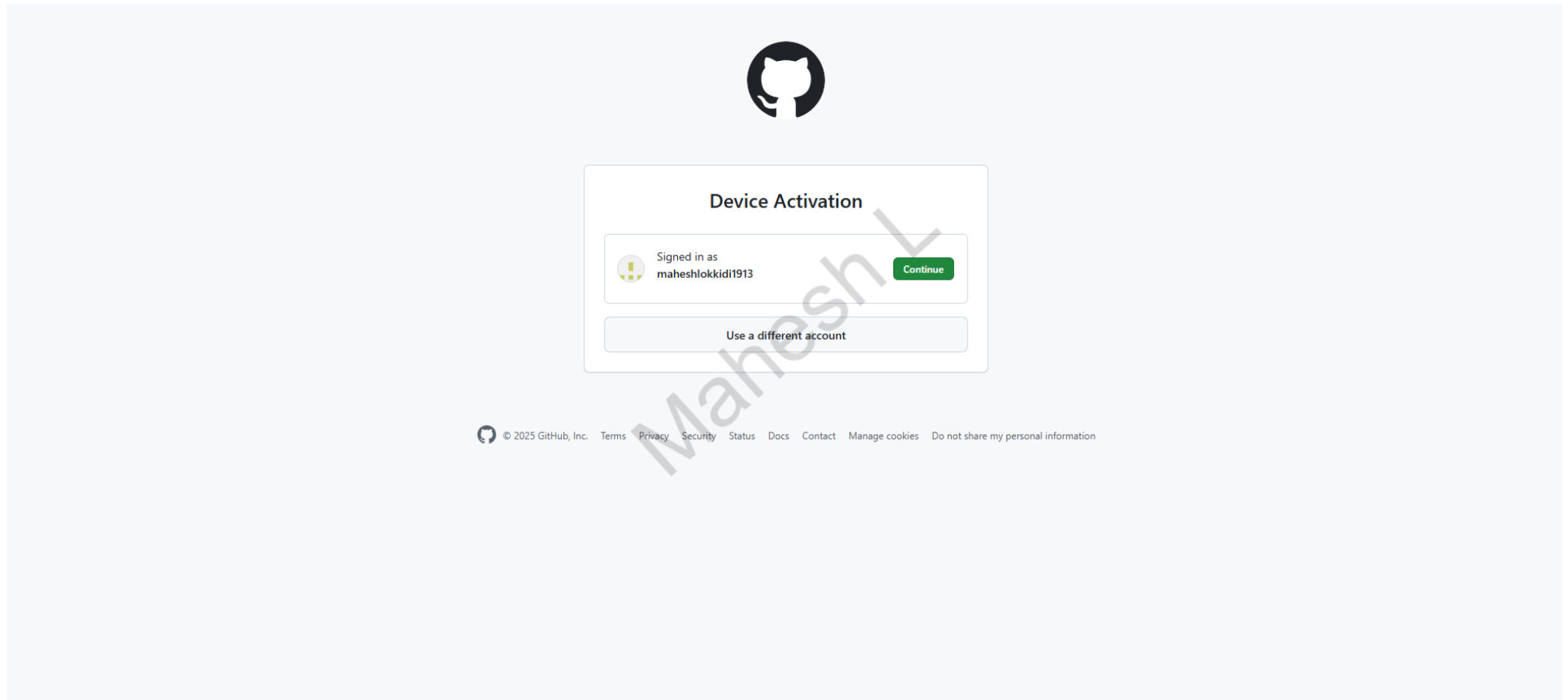
3.6 Verify the Branch on GitHub

- Once the feature branch is published, **GitHub Code** will be displayed in BAS.
- Open **GitHub** in your browser.

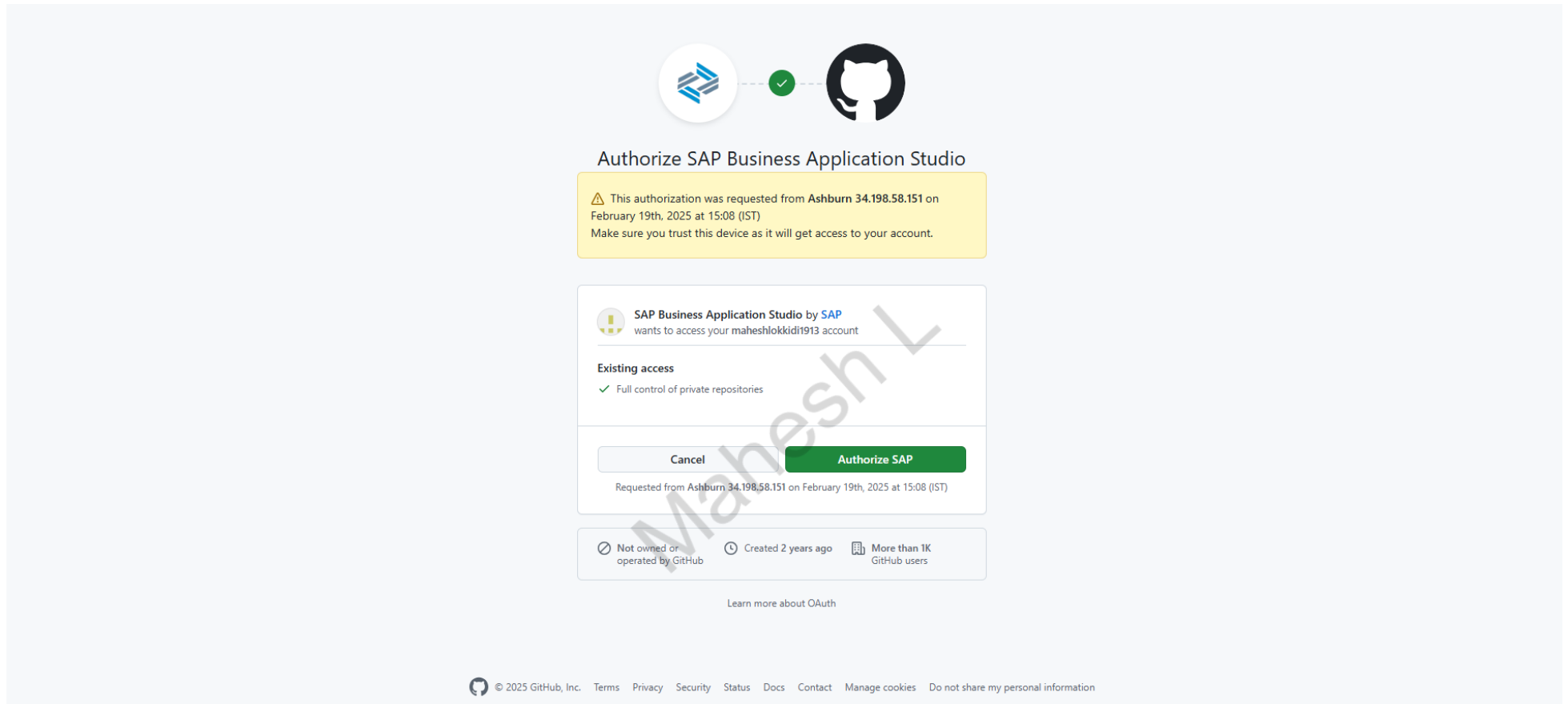


3.7 Device Activation and Authorization

- When connecting BAS with GitHub for the first time, **GitHub may ask for authentication.**
- A **GitHub authentication window** will appear, asking you to sign in.
- If prompted, enter the **GitHub authentication code** displayed in BAS.















- Click **Authorize** to grant BAS access to your GitHub repository.



3.8 Verify Your Project in the Feature Branch

- After successful authentication, go back to **GitHub**.
- Navigate to your **repository**.
- Switch to the **feature branch** using the **branch dropdown**.
- You should now see your **project files** in the **feature branch**.

This branch is 1 commit ahead of, 1 commit behind main.		
	mareshlokkidi1913 Initial commit	54cecab · 7 h
	.pipeline	Initial commit
	.vscode	Initial commit
	app	Initial commit
	db	Initial commit
	resources	Initial commit
	srv	Initial commit
	.gitignore	Initial commit
	Jenkinsfile	Initial commit
	README.md	Initial commit
	eslint.config.mjs	Initial commit
		

4.0 Pull Code from GitHub

4.1 Edit the README File

- In **GitHub**, navigate to your repository.
- Open the **README.md** file.
- Click on the **edit (pencil) icon**.
- Add some text to the file (e.g., "This is a test update").

🔒 You have unsaved changes on this file that can be restored. Discard Restore X

bookshop / README.md in features Cancel changes Commit changes...

Edit Preview Spaces 2 Soft wrap

```
1 # Getting Started /// adding content in Github
2
3 Welcome to your new project.
4
5 It contains these folders and files, following our recommended project layout:
6
7 File or Folder | Purpose
8 -----|-----
9 `app/` | content for UI frontends goes here
10 `db/` | your domain models and data go here
11 `srv/` | your service models and code go here
12 `package.json` | project metadata and configuration
13 `readme.md` | this getting started guide
14
15
16 ## Next Steps
17
18 - Open a new terminal and run `cds watch`
19 - (in VS Code simply choose Terminal > Run Task > cds watch_)
20 - Start adding content, for example, a [db/schema.cds](db/schema.cds).
21
22
23 ## Learn More
24
25 Learn more at https://cap.cloud.sap/docs/get-started/.
26
```

Use **Control + Shift + M** to toggle the **tab** key moving focus. Alternatively, use **esc** then **tab** to move to the next interactive element on the page.

Attach files by dragging & dropping, selecting or pasting them. 143

- Click **"Commit changes"** to save the file.

The screenshot shows a GitHub repository editor interface. At the top, there's a navigation bar with tabs for Code, Issues, Pull requests (1), Actions, Projects, Wiki, Security, Insights, and Settings. Below this, the repository name 'bookshop/' is shown, followed by the file 'README.md' and the branch 'features'. On the right, there are buttons for 'Cancel changes' and 'Commit changes...'. Below the file name, there are tabs for 'Edit' and 'Preview'. The main area displays the content of 'README.md' with line numbers 1 through 26. A 'Commit changes' dialog box is open in the center, with a close button (X) in the top right corner. The dialog has two sections: 'Commit message' with a text input field containing 'Update README.md', and 'Extended description' with a larger text area containing 'Add an optional extended description...'. At the bottom of the dialog, there are two radio button options: 'Commit directly to the features branch' (which is selected) and 'Create a new branch for this commit and start a pull request' (with a link to 'Learn more about pull requests'). Below these options are 'Cancel' and 'Commit changes' buttons. A large, semi-transparent watermark 'Mahesh L' is visible across the dialog box. At the bottom of the editor, there's a footer with instructions: 'Use Control + Shift + M to toggle the tab key moving focus. Alternatively, use esc then tab to move to the next interactive element on the page.' and 'Attach files by dragging & dropping, selecting or pasting them.'

```
1 # Getting Started /// adding contnet in Github
2
3 Welcome to your new project.
4
5 It contains these folders and files, following our recommended project layout:
6
7 File or Folder | Purpose
8 -----|-----
9 `app/` | content for UI frontends goes here
10 `db/` | your domain models and data go here
11 `srv/` | your service models and code go here
12 `package.json` | project metadata and configuration
13 `readme.md` | this getting started guide
14
15
16 ## Next Steps
17
18 - Open a new terminal and run `cds watch`
19 - (in VS Code simply choose **Terminal** > Run Task > cds watch)
20 - Start adding content, for example, a [db/schema.cds](db/schema.cds).
21
22
23 ## Learn More
24
25 Learn more at https://cap.cloud.sap/docs/get-started/.
26
```


The screenshot shows the Visual Studio Code interface with a Git context menu open for a file named `README.md`. The menu options include: View & Sort, Pull, Push, Clone, Checkout to..., **Fetch** (highlighted), Commit, Changes, Pull, Push, Branch, Remote, Stash, Tags, and Reset. Below these is a 'Show Git Output' option.

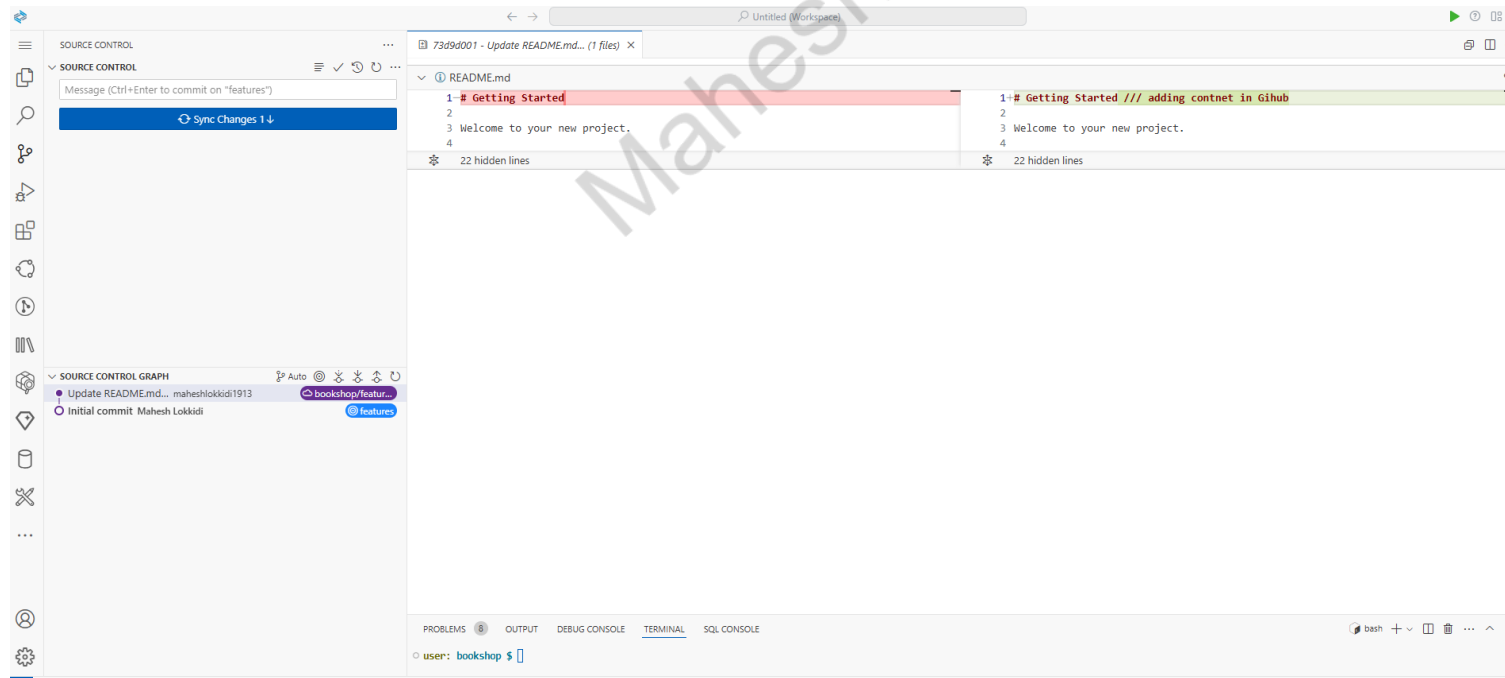
The **SOURCE CONTROL** panel on the left shows a 'Sync Changes 1 ↓' button and a 'SOURCE CONTROL GRAPH' with two commits: 'Update README.md... maheshlokkidi:1913' and 'Initial commit Mahesh Lokkidi'.

The editor window displays the content of `README.md`, which includes a 'Getting Started' section and a 'Learn More' section with a link to <https://cap.cloud.sap/docs/get-started/>.

The bottom status bar shows the file is named 'features', has 11 lines, 0 errors, and is connected to Java. The terminal at the bottom shows the command prompt `user: bookshop $`.

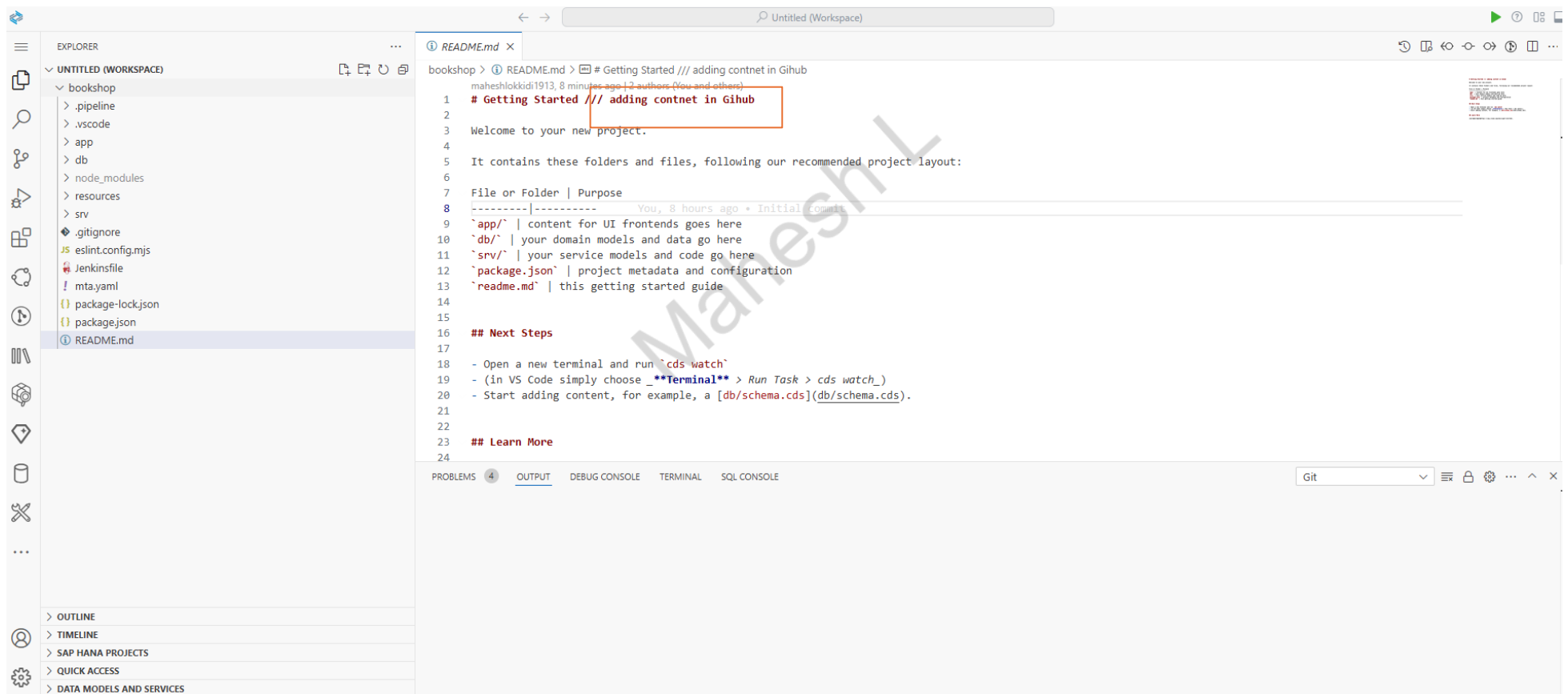
4.2 Fetch and Compare Code in BAS

- Open **SAP Business Application Studio (BAS)**.
- Go to the **Source Control** panel.
- Click on "**Fetch**" to pull the latest changes from GitHub.
- Below the **Source Control** section, a **graph** will appear showing file updates.
- Click on the updated file (e.g., README.md).
- The file will open in a **comparison view**, displaying:
 - **Old Version Code** (left side).
 - **New Version Code** (right side with recent changes)
- Click on the Sync Changes



4.3 Sync Changes and Verify Updates

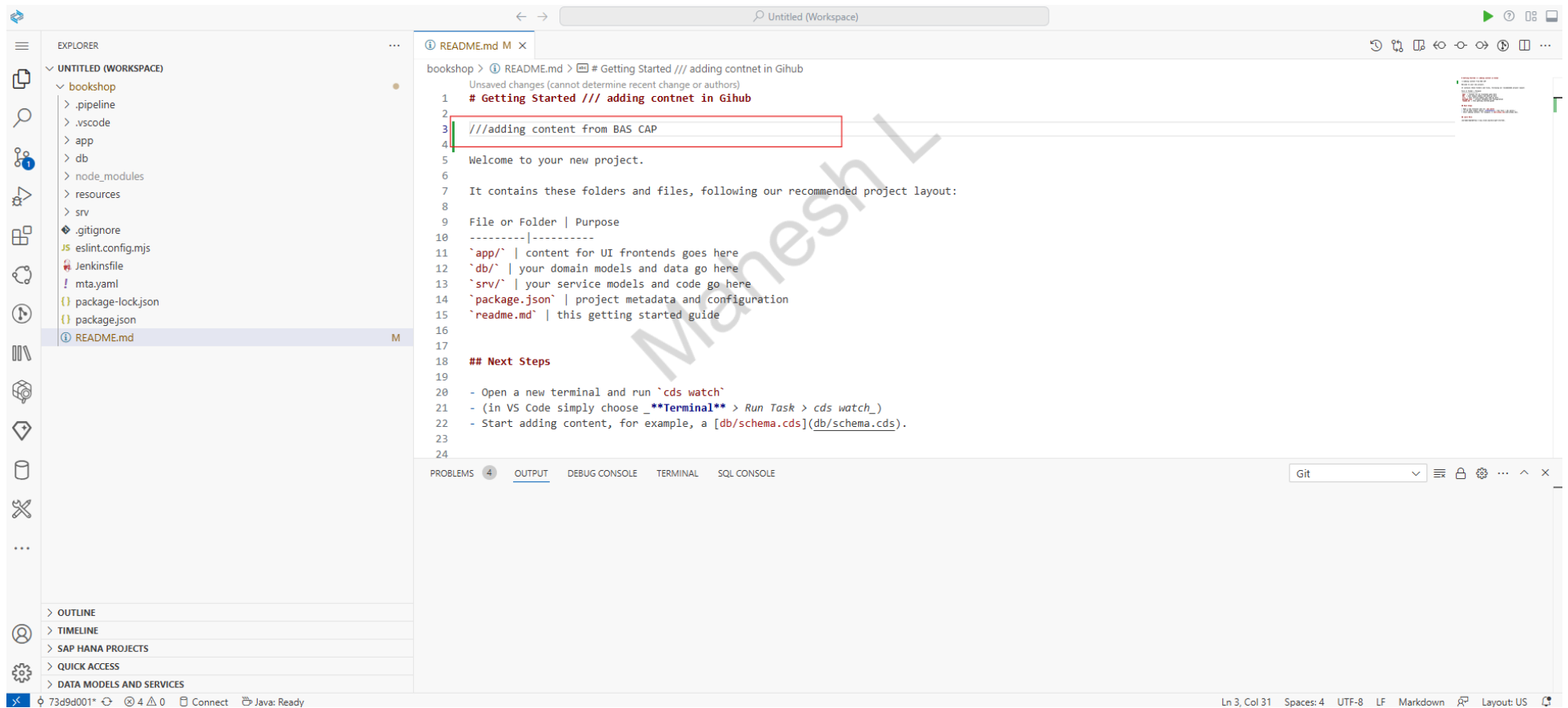
- After syncing, open the **README.md** file in BAS.
- You will now see the changes made in GitHub reflected in the file.



5.0 Push Code to GitHub

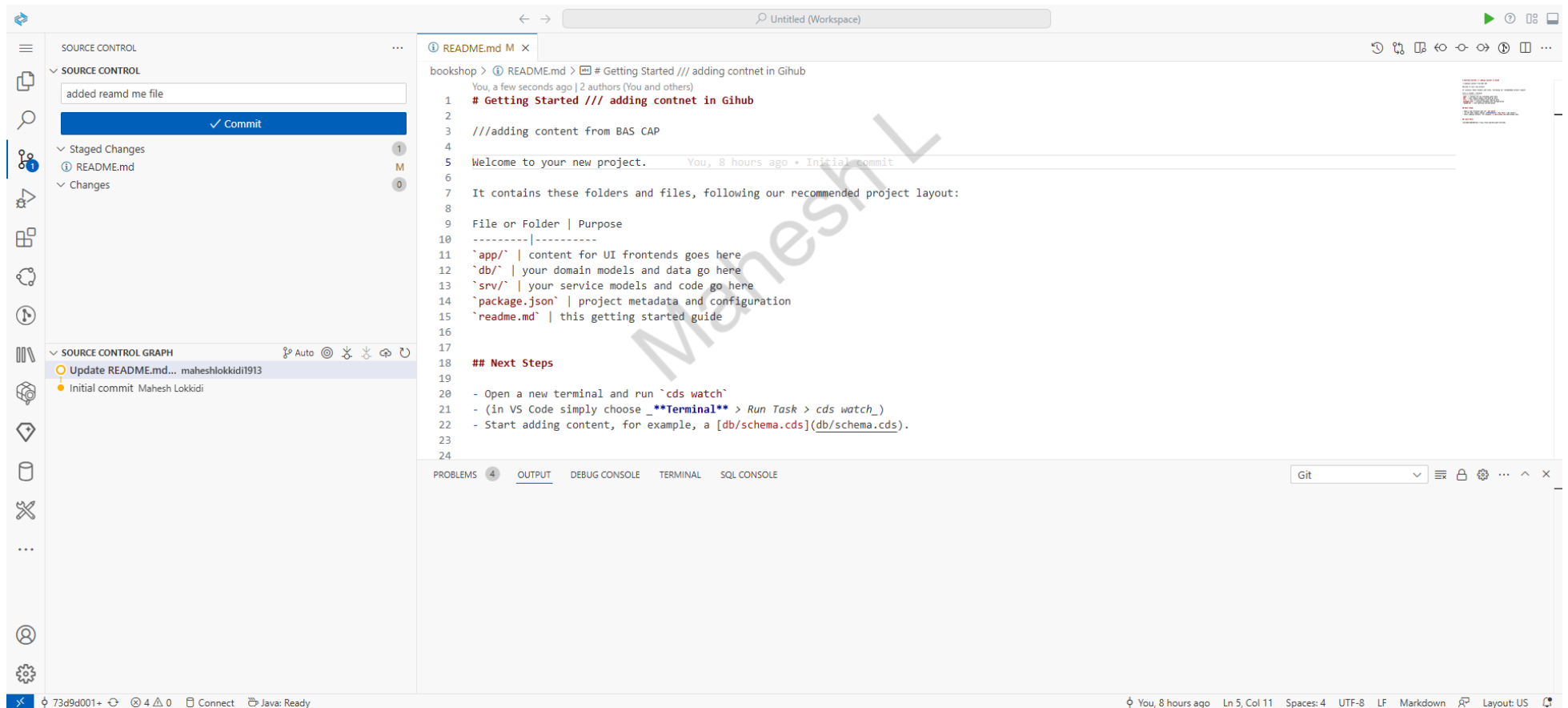
5.1 Modify the README File

- Navigate to the **README.md** file.
- Add some content (e.g., "This is a new update from BAS").
- Save the file (Ctrl + S or Cmd + S).



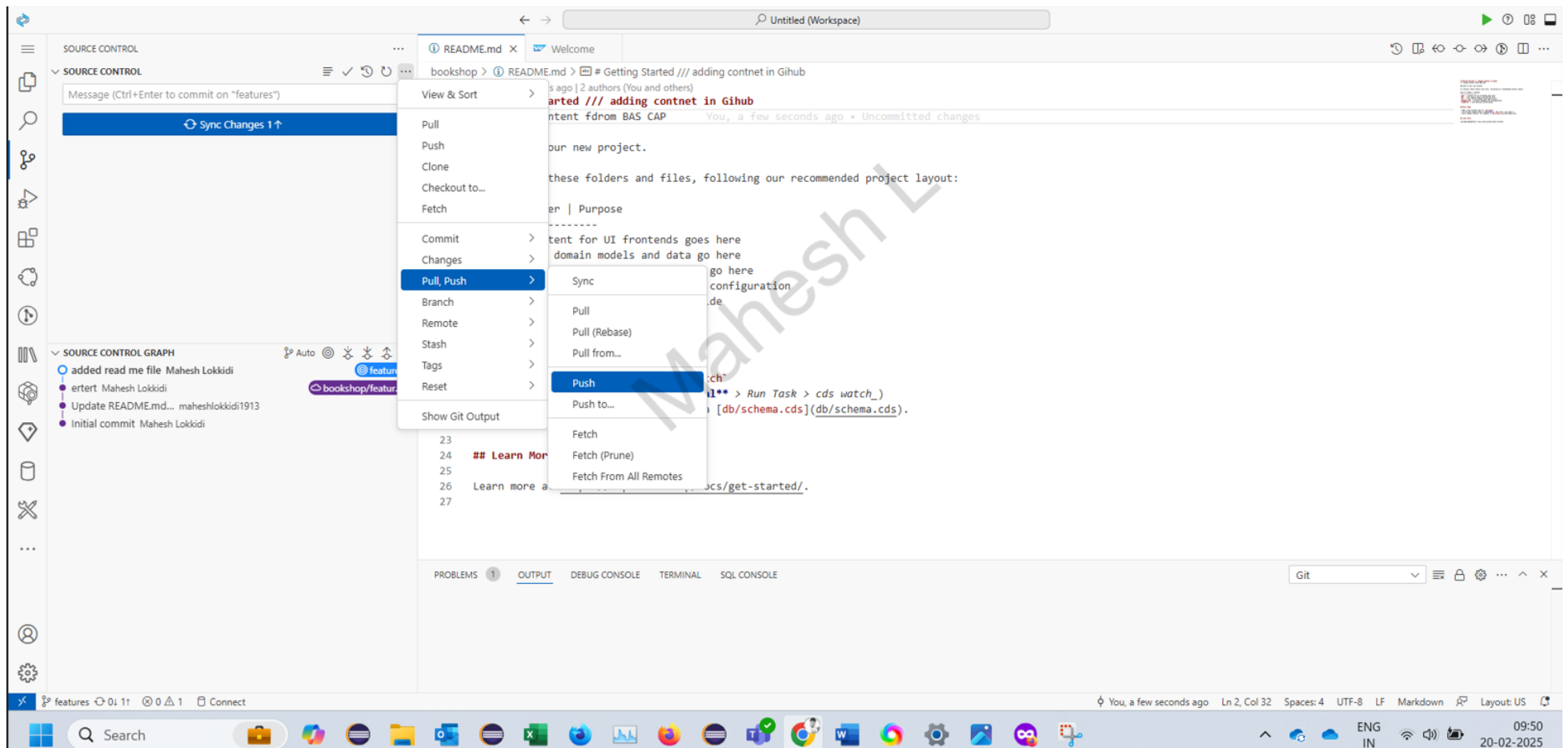
5.2 Stage and Commit Changes

- Go to the **Source Control** panel.
- You will see the changes detected in the **README.md** file.
- Click the **"+" (Stage Changes)** button to stage the file.
- In the **commit message box**, enter a meaningful commit message (e.g., "Updated README file").
- Click on **"Commit"** to save the changes locally.



5.3 Push the Code to GitHub

- In **SAP Business Application Studio (BAS)**, go to the **Source Control** panel.
- Click on the **menu** in the top-right corner.
- Select **"Push"** from the options.
- This will upload your committed changes to the **GitHub repository**.



5.4 Verify Changes on GitHub

- Open **GitHub** in your browser.
- Navigate to your **repository**.
- Open the **README.md** file.
- You should now see the updated content that was pushed from BAS.

The screenshot shows the GitHub interface for a repository named 'bookshop' by user 'maheshlokkidi1913'. The 'README.md' file is open in the 'features' branch. The file content is as follows:

```
1 # Getting Started /// adding contnet in Gihub
2 /// ading content fdrum BAS CAP
3
4 Welcome to your new project.
5
6 It contains these folders and files, following our recommended project layout:
7
8 File or Folder | Purpose
9 -----|-----
10 `app/` | content for UI frontends goes here
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22
23
24 ## Learn More
25
26 Learn more at https://cap.cloud.sap/docs/get-started/.
27
```

A red box highlights the line '/// adding content fdrum BAS CAP' on line 2. The interface includes a search bar at the top right, navigation tabs for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. At the bottom, there are instructions on how to toggle the tab key and attach files.

7.0 Merge Feature Branch into Main

7.1 Create a Pull Request

- Open **GitHub** and navigate to your repository.
- Click on the "**Pull Requests**" tab.
- Click "**New pull request**".
- Select "**feature**" as the source branch and "**main**" as the target branch.
- Click "**Create pull request**" and add a description if needed.

7.2 Merge the Pull Request

- After reviewing the changes, click "**Merge pull request**".
- Click "**Confirm merge**" to merge the **feature** branch into **main**.
- The code from the **feature** branch is now merged into the **main** branch.

OR

8.0 Merge Feature Branch into Main in BAS

8.1 Switch to the Main Branch

- Open **SAP Business Application Studio (BAS)**.
- Go to the **Source Control** panel.
- Click on the **branch dropdown** (currently on "feature").
- Select "**main**" to switch to the main branch.
- If the main branch is not available locally, fetch it by running:

```
git fetch origin
```


8.2 Merge Feature Branch into Main

- Open the **BAS Terminal** (View → Terminal).
- Run the following command to merge the **feature** branch into **main**:

```
git merge feature
```
- If there are conflicts, resolve them manually in the editor.
- After resolving conflicts, **stage the changes**, commit them, and proceed.

8.3 Push the Merged Code to GitHub

- After merging, push the updated main branch to GitHub by running:

```
git push origin main
```

8.4 Verify the Changes

- Open **GitHub** and navigate to your repository.
- Switch to the **main** branch and check that the changes from **feature** are now available.

Thank you.....