Lab Report: MLOps Deployment from PROD to DEV

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1.1 Introduction

In this report, I will explain how I utilized GitHub Codespaces to push my project, along with its requirements, to my repository and create a pull request (PR) to send it to my partner. The goal of this exercise is to simulate the role of a developer in a practical setting while collaborating with a team.

1.2 Why GitHub Codespaces?

GitHub Codespaces provides an efficient and streamlined platform for collaboration, especially when compared to traditional tools such as Anaconda, Visual Studio, or a conventional Windows environment. The primary objective of this lab is to replicate the experience of working as a developer within a team, thereby preparing for real-world scenarios in software development.

1.1.3 Current Situation and Problem/Opportunity Statement

These days, with the high order of growth of many businesses, the need of certain services arises up. So, we need an addressed, well-known, reliable intermediate. For example, some companies are in need to internal nursery, or an event has planned for and a catering is needed. So here we need the best way to communicate with service providers. Here the power of Service Hub shows up. Service Hub team can provide the best options of best service providers to the company manger.

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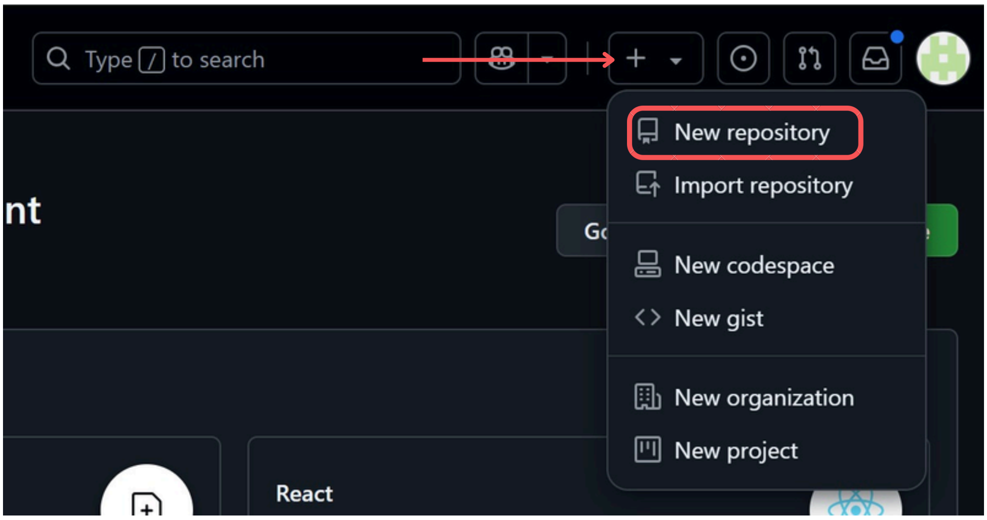
Steps to Push a Project and Create a Pull Request Using GitHub Codespaces

1. Open GitHub Codespaces

Go to https://github.com/codespaces to access the Codespaces dashboard.

2. Create a New Repository

On your GitHub account, create a new repository.
Important: Make sure to check the option 'Add a README file' Codespaces won’t work on an empty repository.



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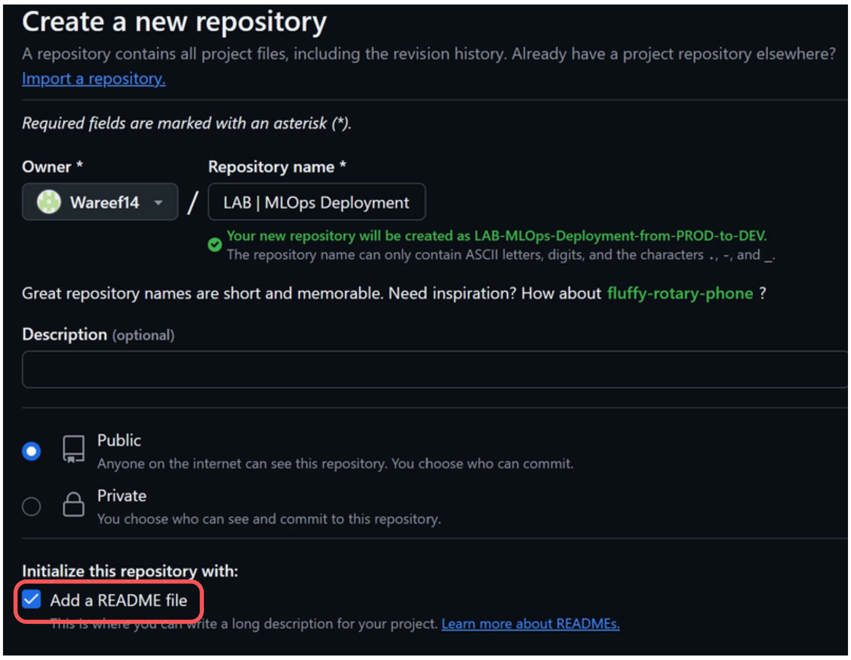


Create a new repository

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 *: Wareef14 / Repository name *: LAB | MLOps Deployment

✓ Your new repository will be created as LAB-MLOps-Deployment-from-PROD-to-DEV.
The repository name can only contain ASCII letters, digits, and the characters ., -, and _.

Great repository names are short and memorable. Need inspiration? How about fluffy-rotary-phone ?

Description (optional)

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

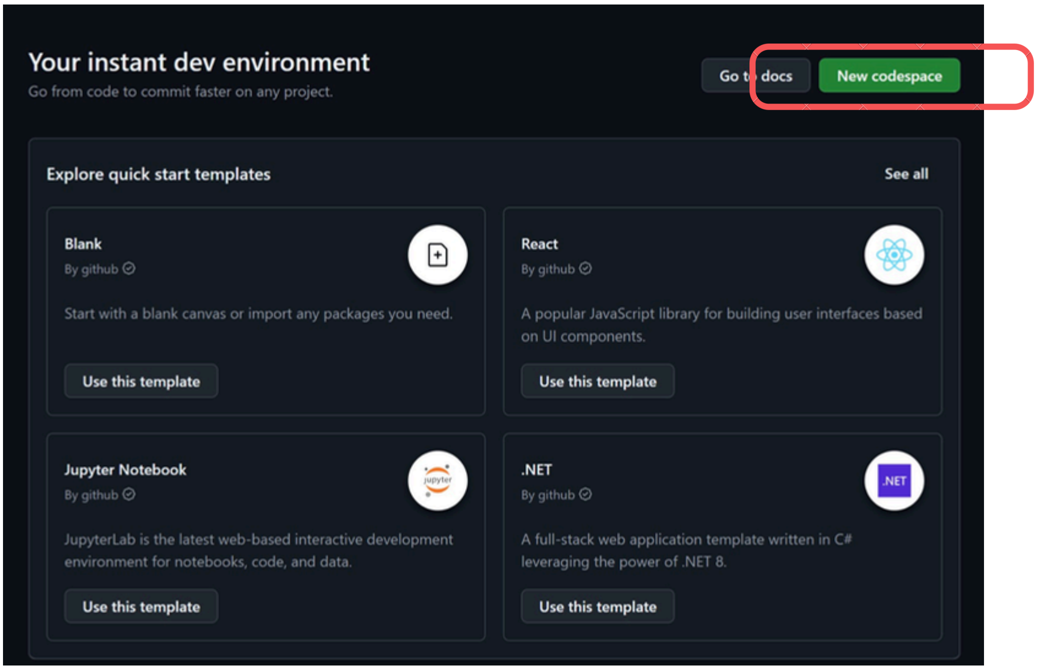
○ Private
You choose who can see and commit to this repository.

Initialize this repository with:

☑ Add a README file
This is where you can write a long description for your project. Learn more about READMEs.

3. Create a New Codespace

Return to the Codespaces page and click the green 'New codespace' button.



Your instant dev environment

Go from code to commit faster on any project.

Explore quick start templates

Blank
By github
Start with a blank canvas or import any packages you need.

React
By github
A popular JavaScript library for building user interfaces based on UI components.

Jupyter Notebook
By github
JupyterLab is the latest web-based interactive development environment for notebooks, code, and data.

.NET
By github
A full-stack web application template written in C# leveraging the power of .NET 8.

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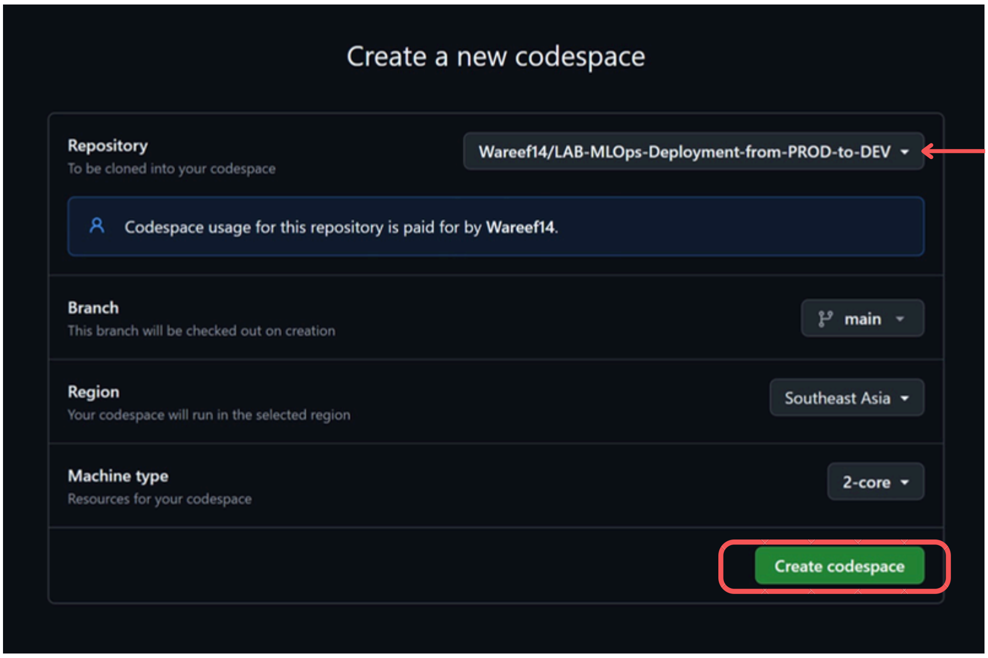
4. Select Your Repository

From the dropdown list, choose the repository you just created. Then click 'Create codespace' to launch the environment.



Create a new codespace

Repository
To be cloned into your codespace
Wareef14/LAB-MLOps-Deployment-from-PROD-to-DEV

Codespace usage for this repository is paid for by **Wareef14**.

Branch
This branch will be checked out on creation
main

Region
Your codespace will run in the selected region
Southeast Asia

Machine type
Resources for your codespace
2-core

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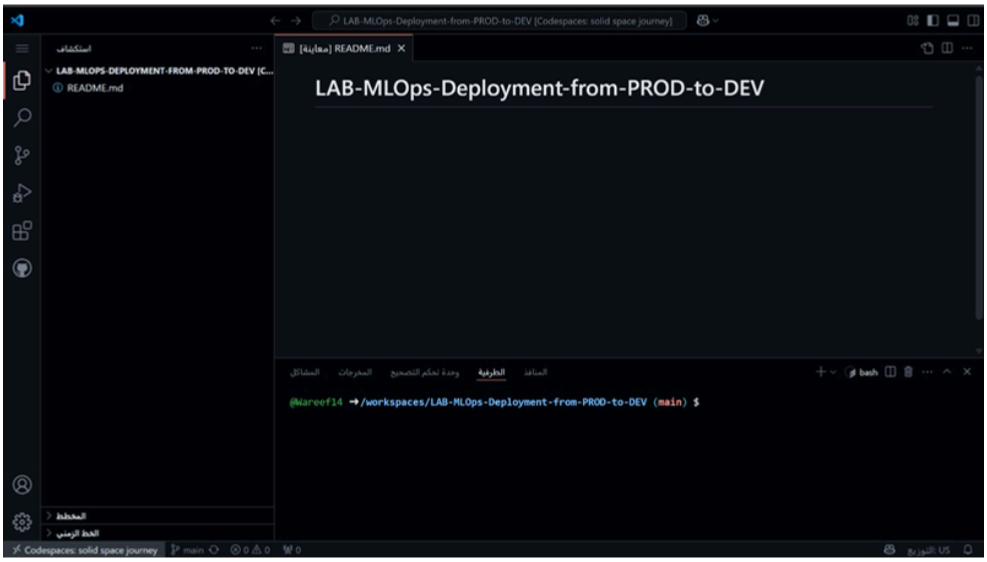
5. Environment Setup

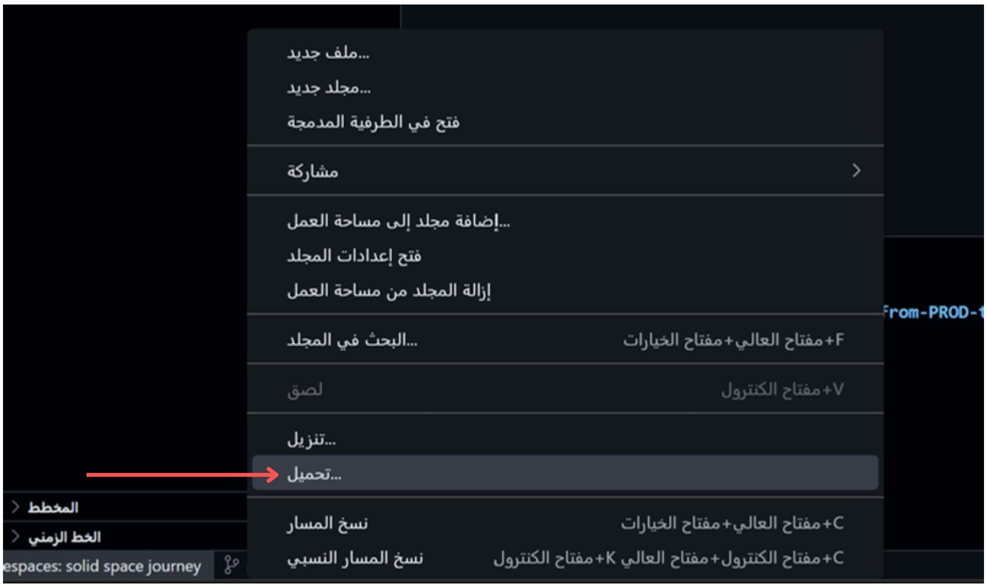
Once loaded, you'll see a VS Code-like interface with a terminal at the bottom. You'll use this terminal to run your commands.


LAB-MLOps-Deployment-from-PROD-to-DEV [Codespaces: solid space journey]
استكشاف
LAB-MLOPS-DEPLOYMENT-FROM-PROD-TO-DEV [C...
README.md
[معاينة] README.md
LAB-MLOps-Deployment-from-PROD-to-DEV
المشاكل
المخرجات
وحدة تحكم التصحيح
الطرفية
المنافذ
bash
المخطط
الخط الزمني
Codespaces: solid space journey
main
0 0
0
التوزيع: US

```
@Wareef14 →/workspaces/LAB-MLOps-Deployment-from-PROD-to-DEV (main) $
```

6. Upload Your Project Files

Right-click in the file explorer, choose 'Upload', and select the project files from your device. Once uploaded, the files will appear in the file list.


ملف جديد...
مجلد جديد...
فتح في الطرفية المدمجة
مشاركة
إضافة مجلد إلى مساحة العمل...
فتح إعدادات المجلد
إزالة المجلد من مساحة العمل
البحث في المجلد...
مفتاح العالي+مفتاح الخيارات+F
لصق
مفتاح الكنترول+V
تنزيل...
تحميل...
نسخ المسار
مفتاح العالي+مفتاح الخيارات+C
نسخ المسار النسبي
مفتاح الكنترول+مفتاح العالي+K مفتاح الكنترول+C
المخطط
الخط الزمني
espaces: solid space journey
From-PROD-

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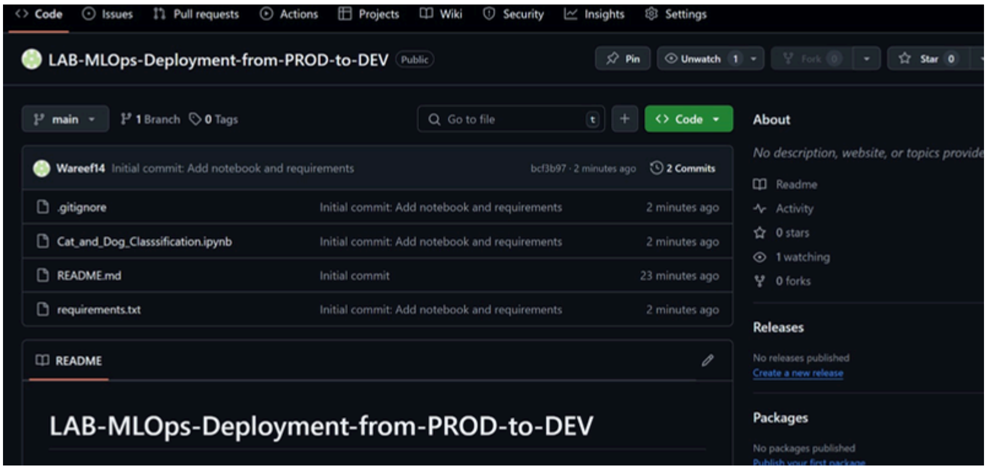
7. Push Your Project Files Using the Terminal

After uploading your project files, you can now run the necessary Git commands line by line in the terminal (as explained in Step 5).

Once the commands are executed successfully, all essential files will be pushed to your GitHub repository.

The files pushed to the repository include:

- **Your main project files**
- **The requirements.txt file, which contains all the required packages and their specific versions used in the project**



LAB-MLOps-Deployment-from-PROD-to-DEV

Wareef14 Initial commit: Add notebook and requirements bcf3b97 · 2 minutes ago 2 Commits

.gitignore	Initial commit: Add notebook and requirements	2 minutes ago
Cat_and_Dog_Classsification.ipynb	Initial commit: Add notebook and requirements	2 minutes ago
README.md	Initial commit	23 minutes ago
requirements.txt	Initial commit: Add notebook and requirements	2 minutes ago

LAB-MLOps-Deployment-from-PROD-to-DEV

About

No description, website, or topics provide

Readme

Activity

0 stars

1 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

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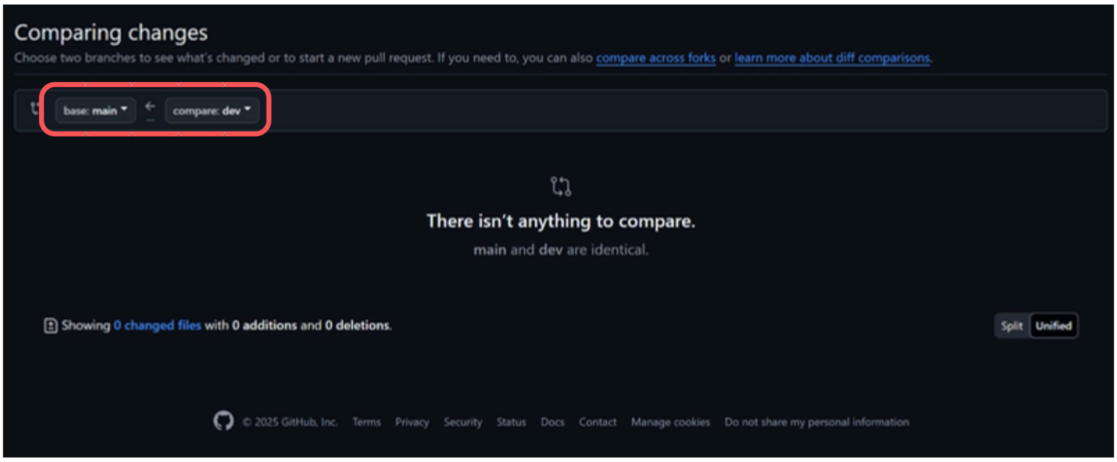
8. Fix 'Nothing to Compare' Issue

If you try to create a pull request and see 'There isn’t anything to compare', that means there are no changes between your branches yet.

To fix this, you can make a small change (like editing the README file)



Comparing changes

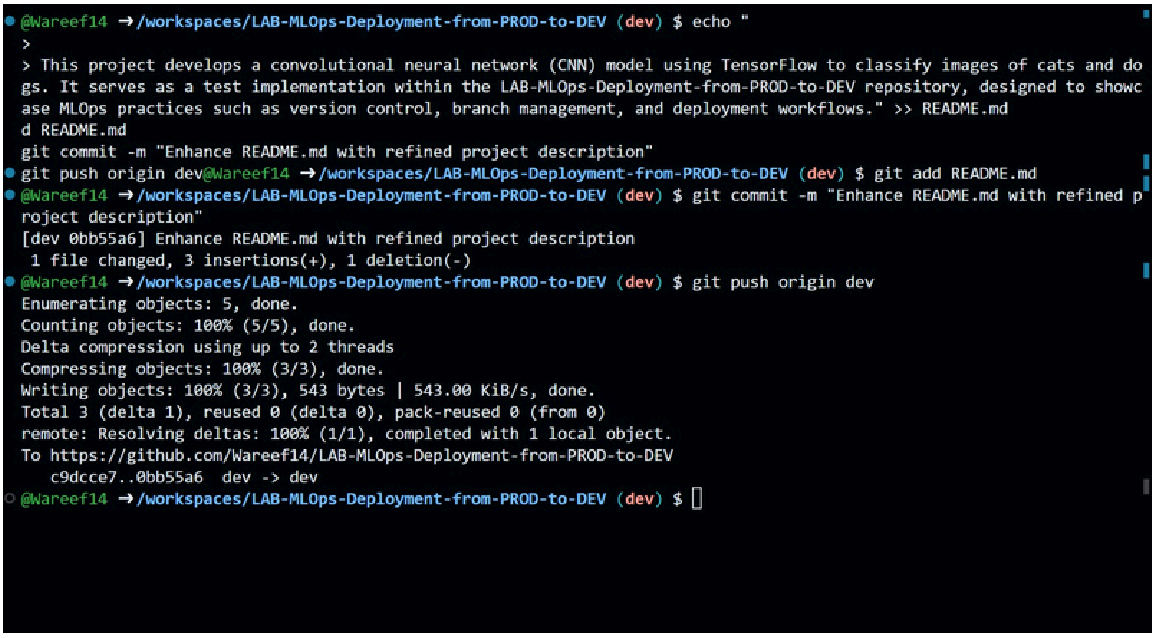
Choose two branches to see what’s changed or to start a new pull request. If you need to, you can also compare across forks or learn more about diff comparisons.

There isn’t anything to compare.

main and dev are identical.

Showing 0 changed files with **0 additions** and **0 deletions**.

Split
Unified
© 2025 GitHub, Inc. Terms Privacy Security Status Docs Contact Manage cookies Do not share my personal information



```
@Wareef14 ➜ /workspaces/LAB-MLOps-Deployment-from-PROD-to-DEV (dev) $ echo "
>
> This project develops a convolutional neural network (CNN) model using TensorFlow to classify images of cats and do
gs. It serves as a test implementation within the LAB-MLOps-Deployment-from-PROD-to-DEV repository, designed to showc
ase MLOps practices such as version control, branch management, and deployment workflows." >> README.md
d README.md
git commit -m "Enhance README.md with refined project description"
git push origin dev@Wareef14 ➜ /workspaces/LAB-MLOps-Deployment-from-PROD-to-DEV (dev) $ git add README.md
@Wareef14 ➜ /workspaces/LAB-MLOps-Deployment-from-PROD-to-DEV (dev) $ git commit -m "Enhance README.md with refined p
roject description"
[dev 0bb55a6] Enhance README.md with refined project description
 1 file changed, 3 insertions(+), 1 deletion(-)
@Wareef14 ➜ /workspaces/LAB-MLOps-Deployment-from-PROD-to-DEV (dev) $ git push origin dev
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 2 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 543 bytes | 543.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/Wareef14/LAB-MLOps-Deployment-from-PROD-to-DEV
   c9dcce7..0bb55a6  dev -> dev
@Wareef14 ➜ /workspaces/LAB-MLOps-Deployment-from-PROD-to-DEV (dev) $ 
```

Now the branches will have differences and GitHub will allow you to open a pull request.

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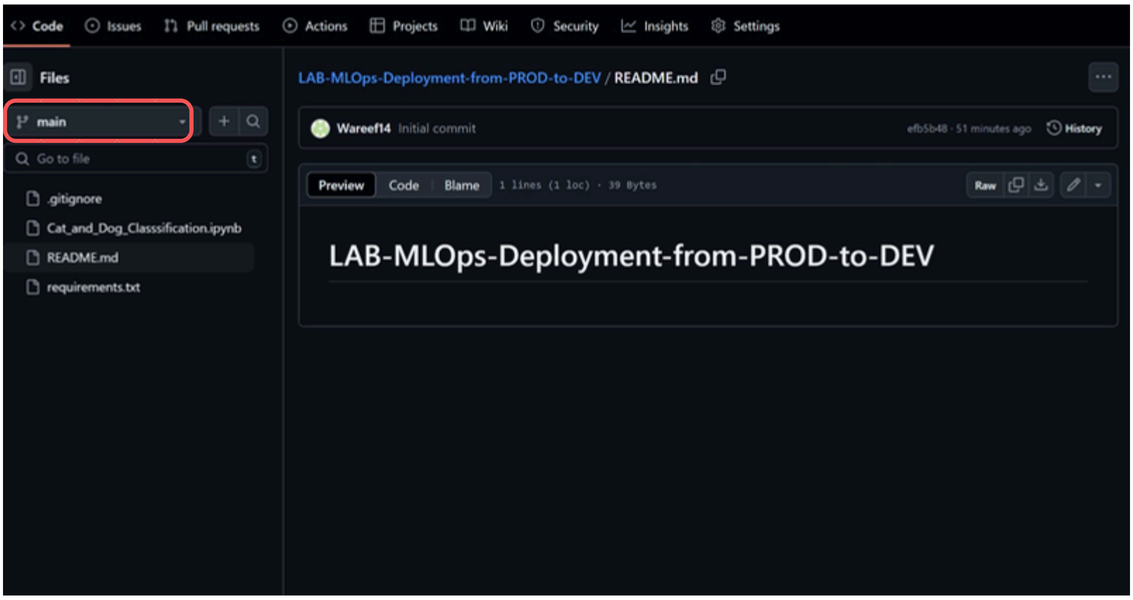
9. Verify Your Changes on the dev Branch

After pushing your changes, go back to your GitHub repository.

From the branch dropdown, switch to the dev branch.

Open the README.md file to make sure your project description was added successfully.

This manual check helps confirm that everything is working as expected.



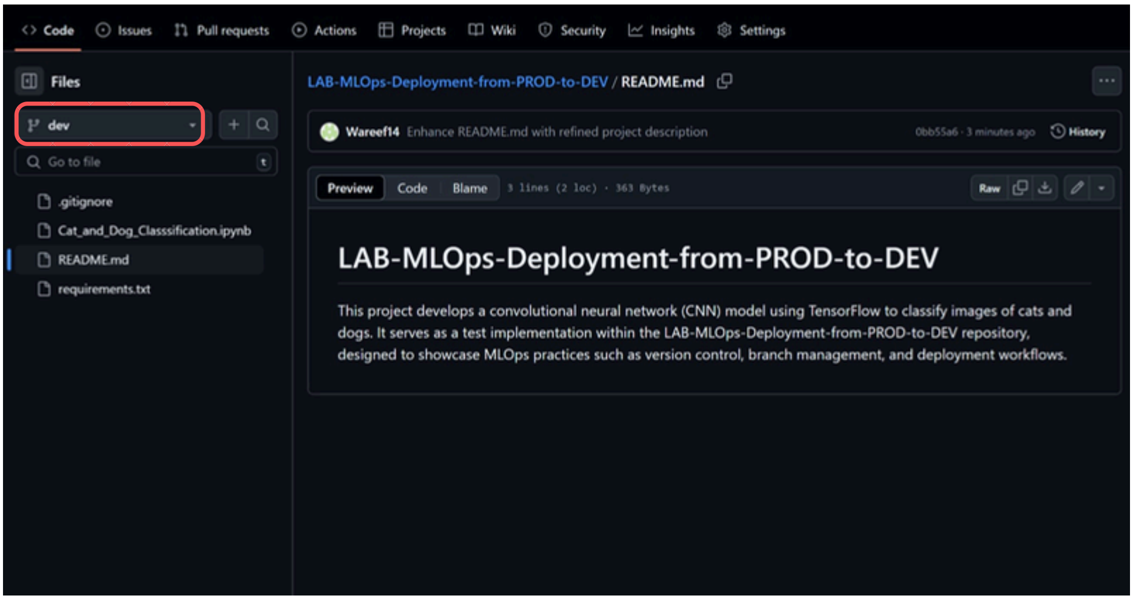
LAB-MLOps-Deployment-from-PROD-to-DEV / README.md

Wareef14 Initial commit efb5b48 · 51 minutes ago

1 lines (1 loc) · 39 Bytes

- .gitignore
- Cat_and_Dog_Classsification.ipynb
- README.md
- requirements.txt

LAB-MLOps-Deployment-from-PROD-to-DEV



LAB-MLOps-Deployment-from-PROD-to-DEV / README.md

Wareef14 Enhance README.md with refined project description 0bb55a6 · 3 minutes ago

3 lines (2 loc) · 363 Bytes

- .gitignore
- Cat_and_Dog_Classsification.ipynb
- README.md
- requirements.txt

LAB-MLOps-Deployment-from-PROD-to-DEV

This project develops a convolutional neural network (CNN) model using TensorFlow to classify images of cats and dogs. It serves as a test implementation within the LAB-MLOps-Deployment-from-PROD-to-DEV repository, designed to showcase MLOps practices such as version control, branch management, and deployment workflows.

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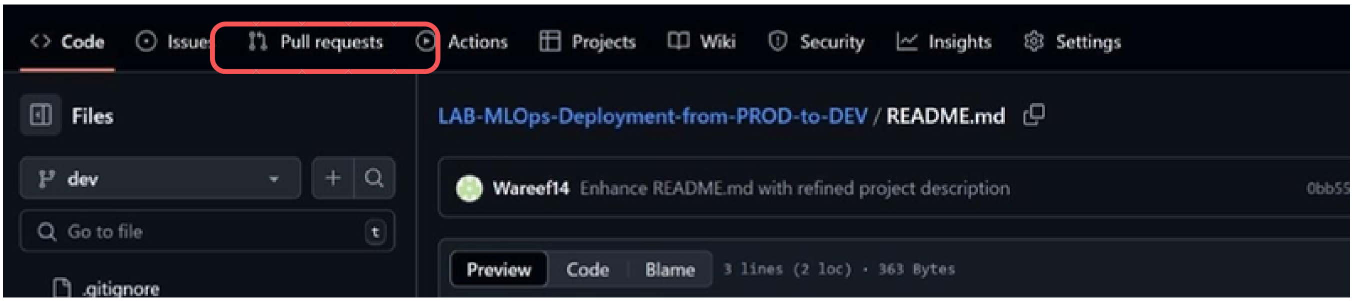
10. Create and Submit a Pull Request

Now that your changes are in place, go to the Pull Requests tab at the top of your repository.

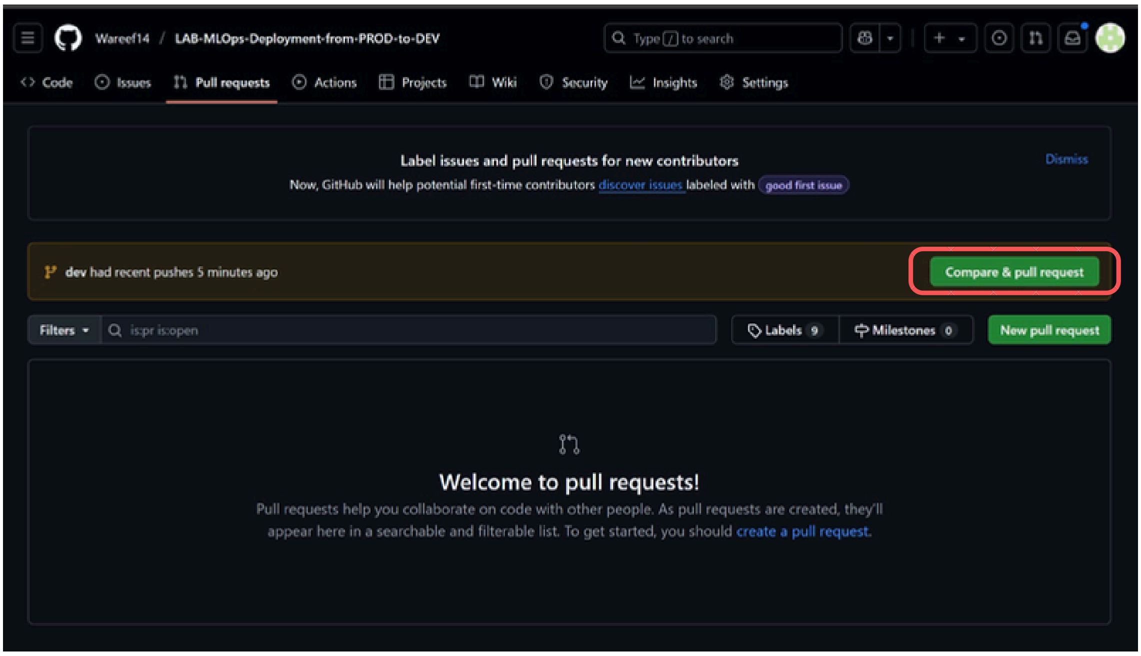


LAB-MLOps-Deployment-from-PROD-to-DEV / README.md

Wareef14 Enhance README.md with refined project description 0bb55

3 lines (2 loc) · 363 Bytes

This time, the “Nothing to compare” issue should not appear because you made changes to the repository.
GitHub will detect the difference between the branches and display a green button labeled "Compare & pull request". Click on it.



Label issues and pull requests for new contributors

Now, GitHub will help potential first-time contributors discover issues labeled with good first issue

dev had recent pushes 5 minutes ago

is:pr is:open

Welcome to pull requests!

Pull requests help you collaborate on code with other people. As pull requests are created, they'll appear here in a searchable and filterable list. To get started, you should create a pull request.

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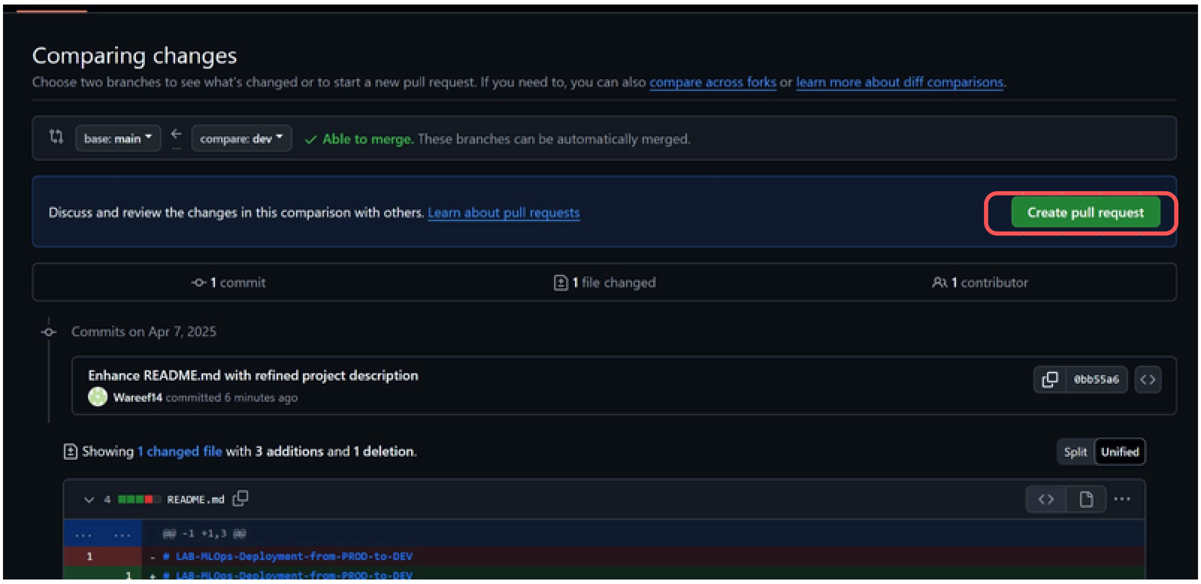
On the next page, GitHub will automatically set:
Base: main
Compare: dev
Click "Create pull request".



Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also compare across forks or learn more about diff comparisons.

base: main ← compare: dev ✓ Able to merge. These branches can be automatically merged.

Discuss and review the changes in this comparison with others. Learn about pull requests

Commits on Apr 7, 2025

Enhance README.md with refined project description
Wareef14 committed 6 minutes ago

Showing 1 changed file with 3 additions and 1 deletion.

```
@@ -1 +1,3 @@
- # LAB-MLOps-Deployment-from-PROD-to-DEV
+ # LAB-MLOps-Deployment-from-PROD-to-DEV
```

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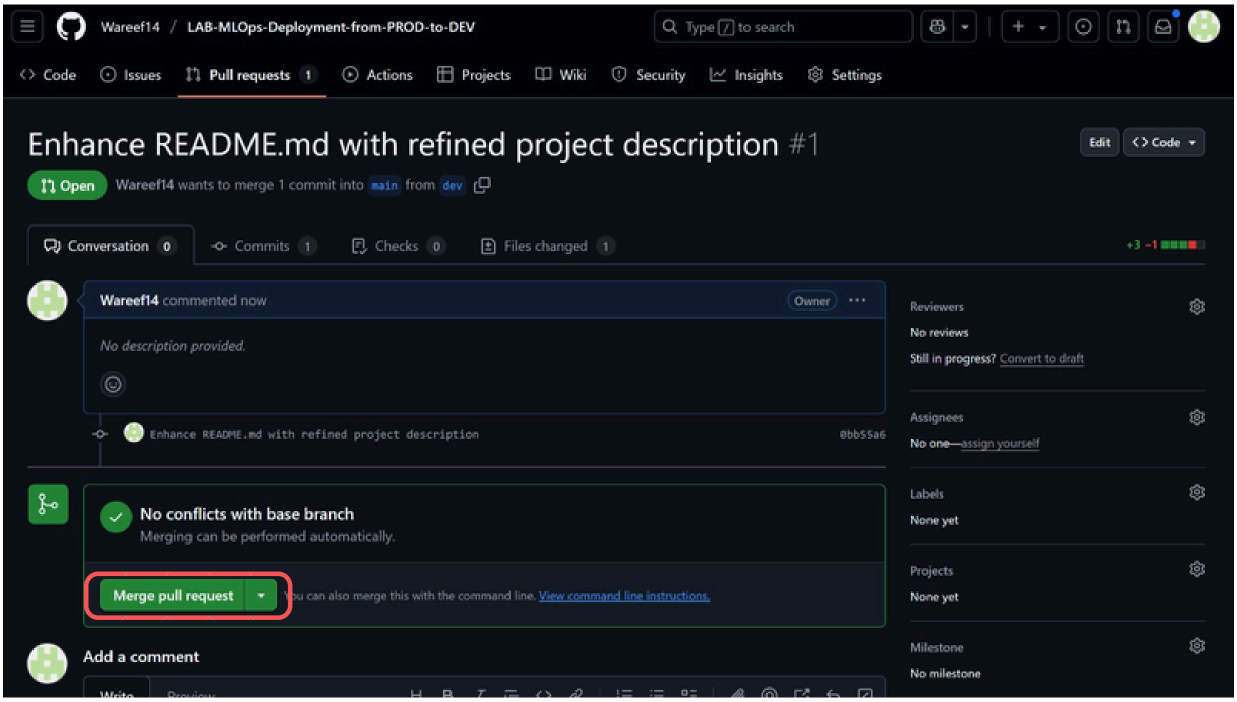
🎉 **That’s it! Your job as a developer is done.**
Now wait for your team to review your changes.
Once everything is approved, they can click "Merge pull request" to combine dev into main.



Enhance README.md with refined project description #1

Open Wareef14 wants to merge 1 commit into main from dev

Wareef14 commented now

No description provided.

Enhance README.md with refined project description 0bb55a6

No conflicts with base branch
Merging can be performed automatically.

You can also merge this with the command line. View command line instructions.

Reviewers
No reviews
Still in progress? Convert to draft

Assignees
No one—assign yourself

Labels
None yet

Projects
None yet

Milestone
No milestone