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Connect a GitHub Repo with AWS

S

Shadrack Kalukwo

```
Installed:
git-2.47.1-1.amzn2023.0.2.x86_64          git-core-2.47.1-1.amzn2023.0.2.x86_64      git-core-doc-2.47.1-1.amzn2023.0.2.noarch    perl-Error-1:0.17029-5.amzn2023.0.2.noarch
perl-File-Find-1.37-477.amzn2023.0.6.noarch  perl-Git-2.47.1-1.amzn2023.0.2.noarch      perl-TermReadKey-2.38-9.amzn2023.0.2.x86_64   perl-lib-0.65-477.amzn2023.0.6.x86_64

Complete!
[ec2-user@ip-172-31-23-164 ~]$ git --version
git version 2.47.1
```



Introducing Today's Project!

Today, I'll be storing my web application's code in a Git repository.

Key tools and concepts

Services I used were; Github & git, ec2, VSCode, Key Concepts; GitHub access tokens, pushing changes to Github, Connecting GitHub repo to local repo

Project reflection

This project took me approximately 2 hours. The most challenging part was setting up and using my GitHub access tokens. It was most rewarding to solve each error I faced.

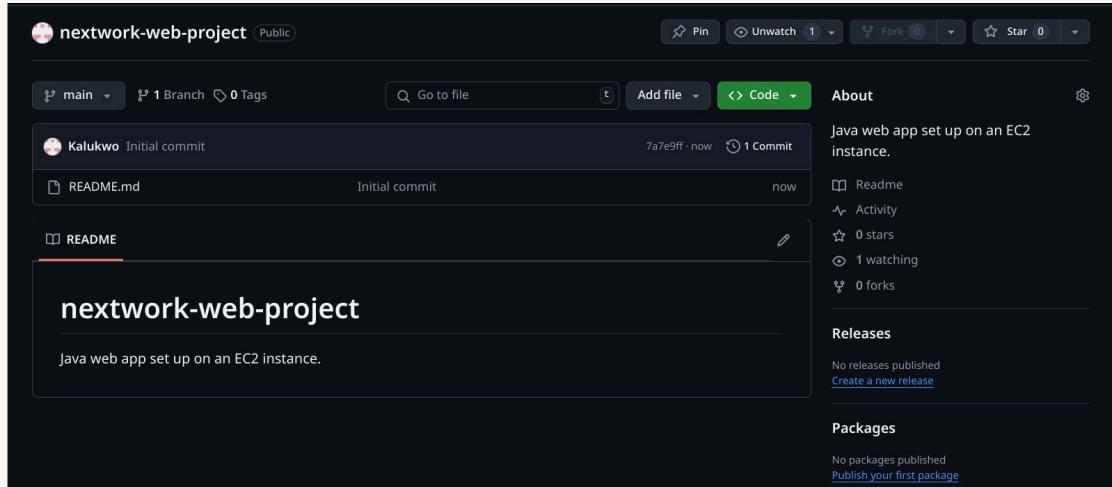
I did this project to learn how to link my GitHub repo to my local repo. The project met my goals.

This project is part two of a series of DevOps projects where I'm building a CI/CD pipeline! I'll be working on the next project from April 13th, 2025

Git and GitHub

Git is a distributed version control system that tracks changes in files over time. I installed git using the below commands: sudo dnf install git -y And verified the installation using: git --version

GitHub is as a storage space for different version of your project that Git tracks. Since GitHub is a cloud service, it also lets you access your work from anywhere and collaborate with other developers over the internet.



My local repository

A Git repository is a group of folders that contain all your project files and their entire version history. Hosting a repo in the cloud, like on GitHub, means you can also collaborate with other engineers and access your work from anywhere

Git init is a command that sets up the directory as a local Git repository which means changes are now tracked for version control. I ran git init in my nextwork-web-project directory.

Git branches as parallel versions or 'alternate universes' of the same project, i.e. a lightweight, movable pointer to a specific commit in the project's history.

```
[ec2-user@ip-172-31-23-164 nextwork-web-project]$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/ec2-user/nextwork-web-project/.git/
```

To push local changes to GitHub, I ran three commands

git add

The first command I ran was `git add .` which stages all files in `nextwork-web-project` to be saved. A staging area is a file, contained in your Git directory, that stores information about what will go into your next commit

git commit

The second command I ran was '`git commit -m "Updated index.jsp with new content"`' which saves the staged changes as a snapshot in your project's history. '`-m`' flag lets you leave a message describing what the commit is about.

git push

The third command I ran was '`git push -u origin master`' which pushes your committed changes to `origin`, which you've bookmarked as your GitHub repo.' Using '`-u`' means' you're also setting an '`upstream`' for your local branch.

Authentication

When I commit changes to GitHub, Git asks for my credentials because, it needs to double check that you have the right to push any changes to the remote origin your local repo is connected with.

Local Git identity

Git needs my name and email for commits to track who made what change. If you don't set it manually, Git uses the system's default username, which might not accurately represent your identity in your project's version history.

Running git log showed me that I have created a README.md and updated my index.jsp file. The file that contains my web app's html.

```
[ec2-user@ip-172-31-23-164 nextwork-web-project]$ git log
commit f422e75ef308e12c3a4bcef89c3fb8effe68dfa7 (HEAD -> master, origin/master)
Author: Kalukwo <123067924+Kalukwo@users.noreply.github.com>
Date:   Sun Apr 13 15:47:58 2025 +0300

    Create README.md

commit 56e7f554ba43f60674b08e00de195689cd59b674
Author: EC2 Default User <ec2-user@ip-172-31-23-164.ec2.internal>
Date:   Sun Apr 13 11:58:55 2025 +0000

    Updated index.jsp with new content
```

GitHub tokens

GitHub phased out password authentication to connect with repositories over HTTPS - there are too many security risks and passwords can get intercepted over the internet .You need to use a personal access token instead, which is a more secure method.

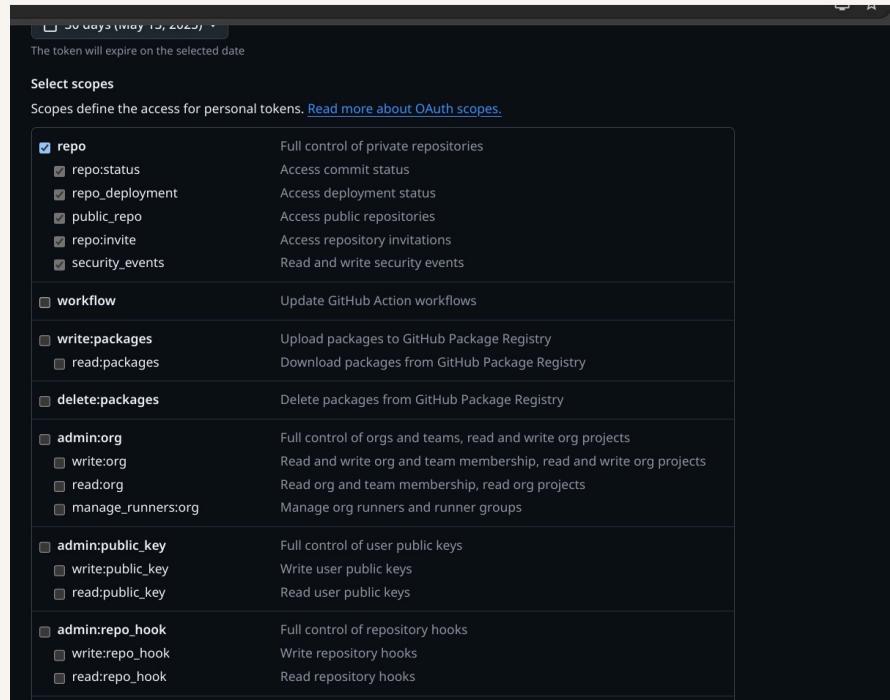
A GitHub token is a secure authentication method used to access GitHub resources, often instead of a password. I'm using one in this project because I want to connect my GitHub repo to my local repo in my ec2

I could set up a github token by going to developer setting in my GitHub console account and generating new tokens

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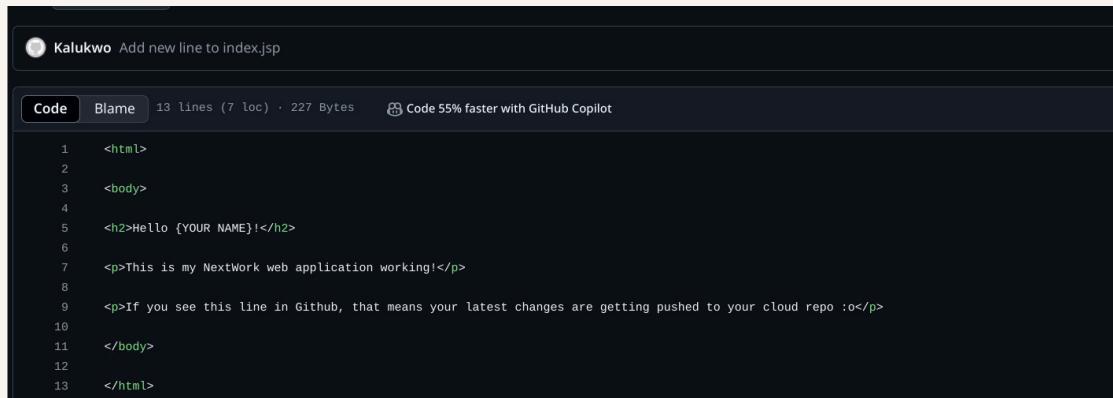
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Making changes again

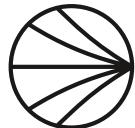
'I wanted to see Git working in action, so I updated the code in my index.jsp file. I couldn't see the changes in my GitHub repo initially because I had only saved changes in my local repo and not pushed the changes to GitHub.

I finally saw the changes in my GitHub repo after I pushed the changes in my GitHub. I used the following commands: git add . git commit -m "Updated a line to my index.jsp" git push



A screenshot of a GitHub code editor interface. The title bar says "Kalukwo Add new line to index.jsp". The code tab is selected, showing 13 lines of JavaServer Pages (JSP) code. The code includes a placeholder for the user's name and a message indicating successful push to GitHub.

```
1 <html>
2
3 <body>
4
5 <h2>Hello {YOUR NAME}!</h2>
6
7 <p>This is my NextWork web application working!</p>
8
9 <p>If you see this line in GitHub, that means your latest changes are getting pushed to your cloud repo :o</p>
10
11 </body>
12
13 </html>
```



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