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Connect a GitHub Repo with AWS

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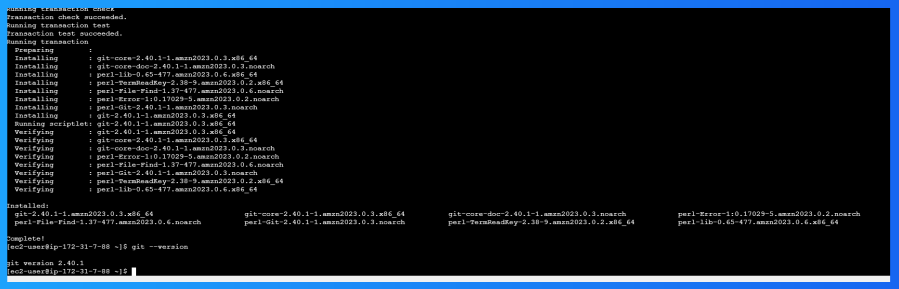

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Introducing Today's Project!

What is GitHub?

GitHub is a platform for hosting Git repositories and enabling version control. I used GitHub in today’s project to store my web app’s code, track changes, and sync my local repository with the remote one for backup and collaboration.

One thing I didn't expect...

One thing I didn't expect in this project was the need for a GitHub token instead of a password for authentication. It was a bit of a surprise, but it made the process more secure and streamlined once I set it up.

This project took me...

This project took me about 2 hours. It involved setting up Git, connecting it with GitHub, making changes to the web app, and ensuring everything was properly committed and pushed to GitHub. It was a productive session with a lot of hands-on learning

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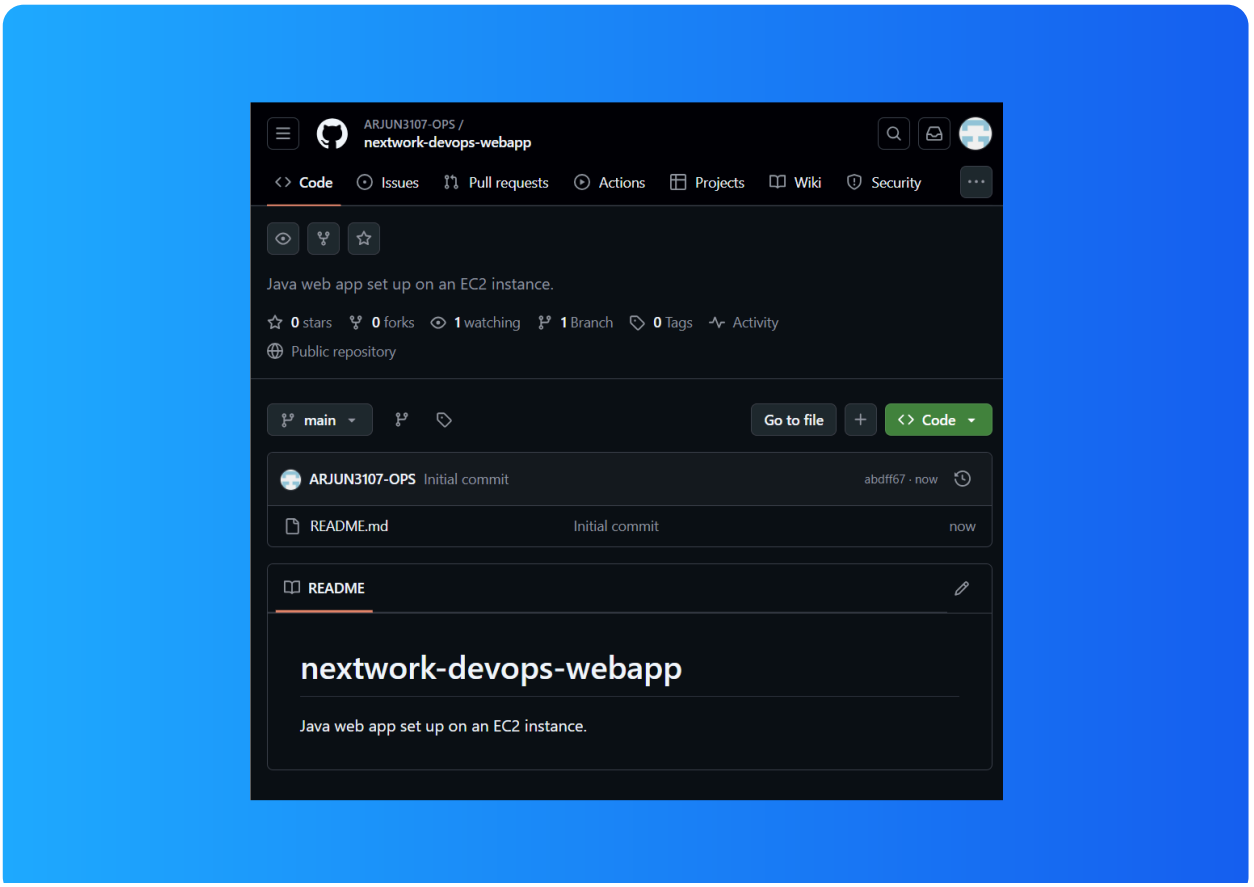
Git and GitHub

Git is a version control system that tracks changes in code and facilitates collaboration. I installed it on my EC2 instance using `sudo yum update` to update the system, followed by `sudo yum install git` to install Git and enable version control.

GitHub is a platform for hosting Git repositories, enabling version control and collaboration. I'm using GitHub in this project to store my code remotely, track changes, and collaborate with others, ensuring a backup and easy synchronization.



My local repository

A Git repository is a storage location for tracking changes in a project's files using Git. It allows version control, collaboration, and history tracking, enabling developers to manage and sync their work efficiently.

`git init` is a command that initializes a new Git repository in a directory, enabling version control. I ran `git init` in my web app folder to start tracking changes locally before connecting it to the GitHub repository.

After running git init, the response from the terminal was a message indicating the repository was initialized. A branch in Git is a separate line of development, allowing you to work on changes without affecting the main project until you're ready.

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To push local changes to GitHub, I ran three commands

git add

The first command I ran was git add .. A staging area is where Git gathers all the changes you want to include in the next commit. It lets you review and prepare your changes before making them part of the project's history with a commit.

git commit

The second command I ran was `git commit -m "Updated index.jsp with new content"`. Using `-m` means I can add a message to describe the changes made, which helps track the project's history and makes it easier to review changes later.

git push

The third command I ran was git push -u origin master. Using -u means I'm setting the upstream branch, so Git remembers to push changes to the master branch on GitHub by default, making future pushes easier without specifying the branch.

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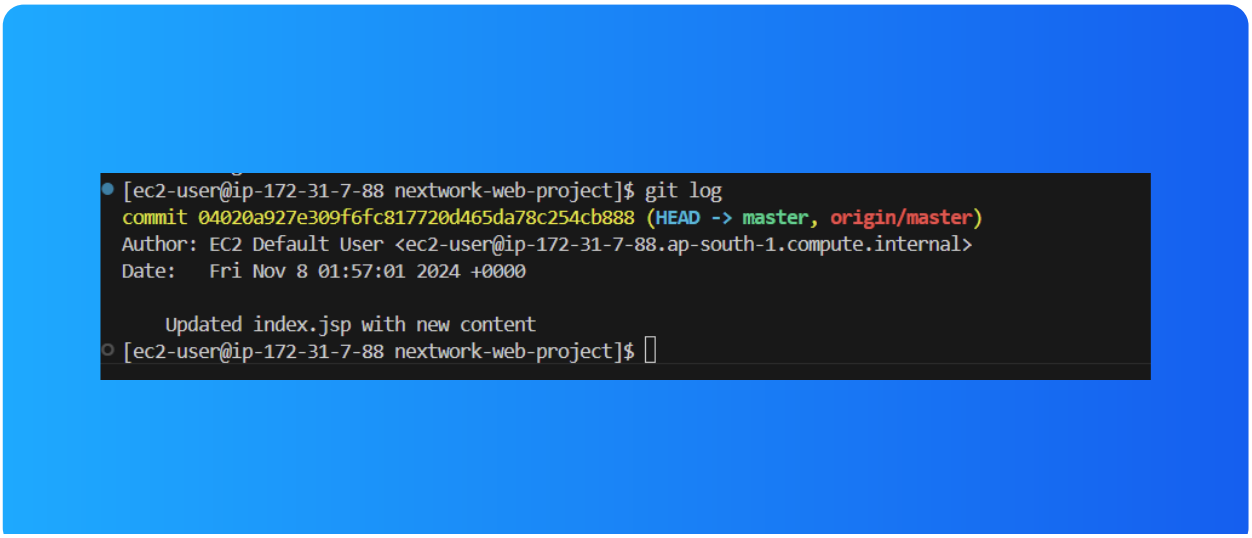
Authentication

When I commit changes to GitHub, Git asks for my credentials because it needs to authenticate my identity to ensure I have permission to push changes to the repository. This helps keep the code secure and prevents unauthorized access.

Local Git identity

Git needs my name and email because it uses them to track who makes changes in a repository. This information is included in each commit, allowing others to see the author of each change and ensuring proper attribution in collaborative projects.

Running `git log` showed me that it displays the commit history, including each commit's unique identifier (hash), author name, date, and commit message. It helps me track changes made to the project and review the project's version history.



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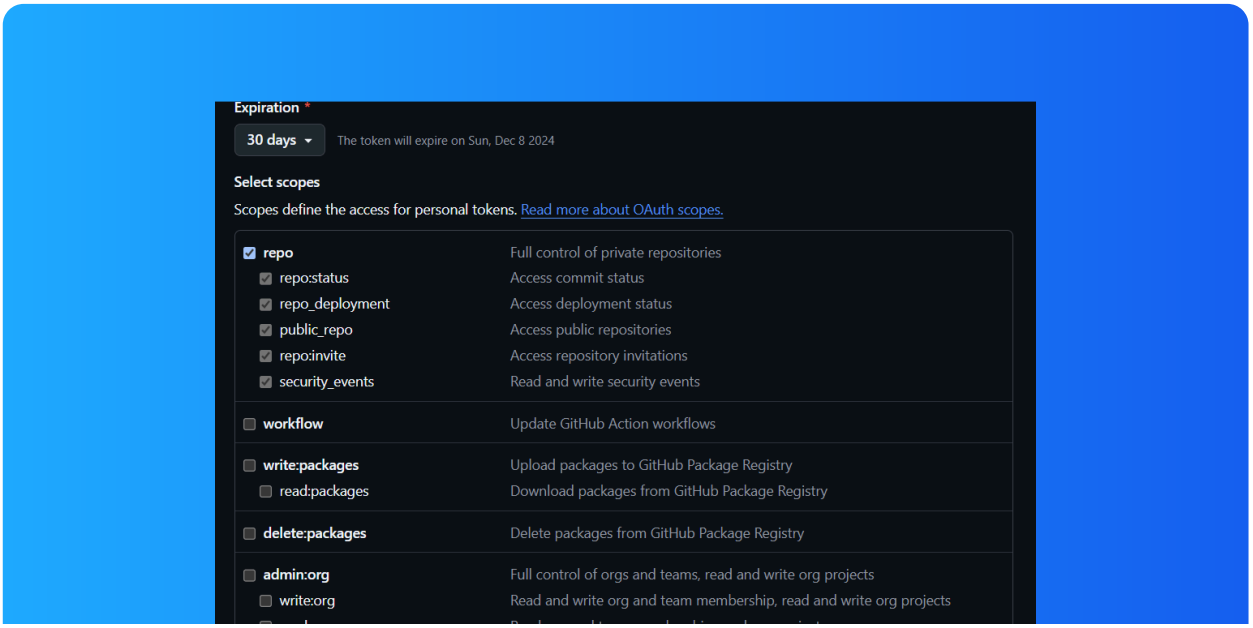
GitHub tokens

GitHub authentication failed when I entered my password because GitHub no longer supports password-based authentication for Git operations. Instead, it requires a personal access token (PAT) to securely authenticate and authorize access.

A GitHub token is a personal access token (PAT) that provides secure access to GitHub repositories for actions like cloning, pushing, and pulling. I'm using one in this project because GitHub no longer supports password-based authentication.

I set up a GitHub token by going to "Developer settings" in GitHub, selecting "Personal access tokens," and generating a new token with the required permissions. I then used this token for authentication instead of my password.



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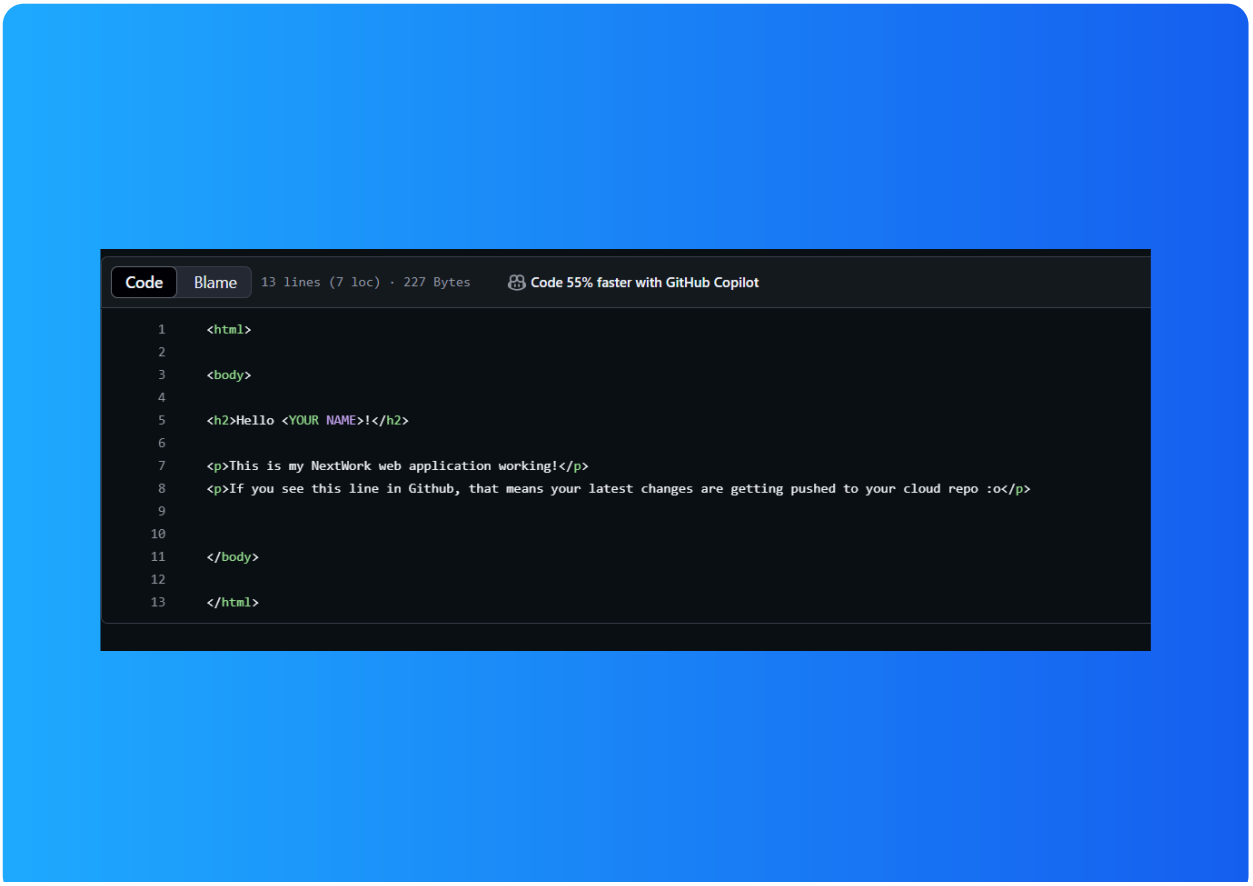
Making changes again

I wanted to see Git working in action, so I updated `index.jsp` in my nextwork-web-project. I couldn't see the changes in my GitHub repo initially because I hadn't committed and pushed the changes yet, so they weren't reflected in the remote repo

I finally saw the changes in my GitHub repo after committing the updated `index.jsp` file and pushing the commit to the remote repository using `git commit` and `git push`. This synchronized the local changes with my GitHub repo.



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