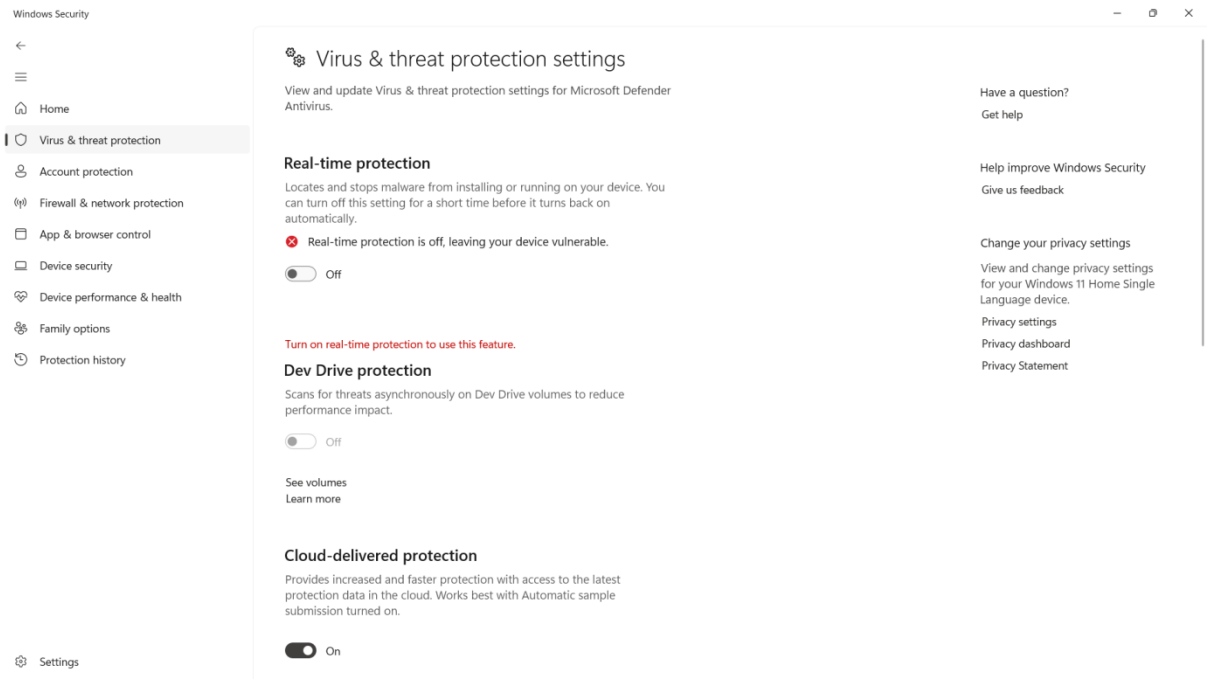
WEEK 11

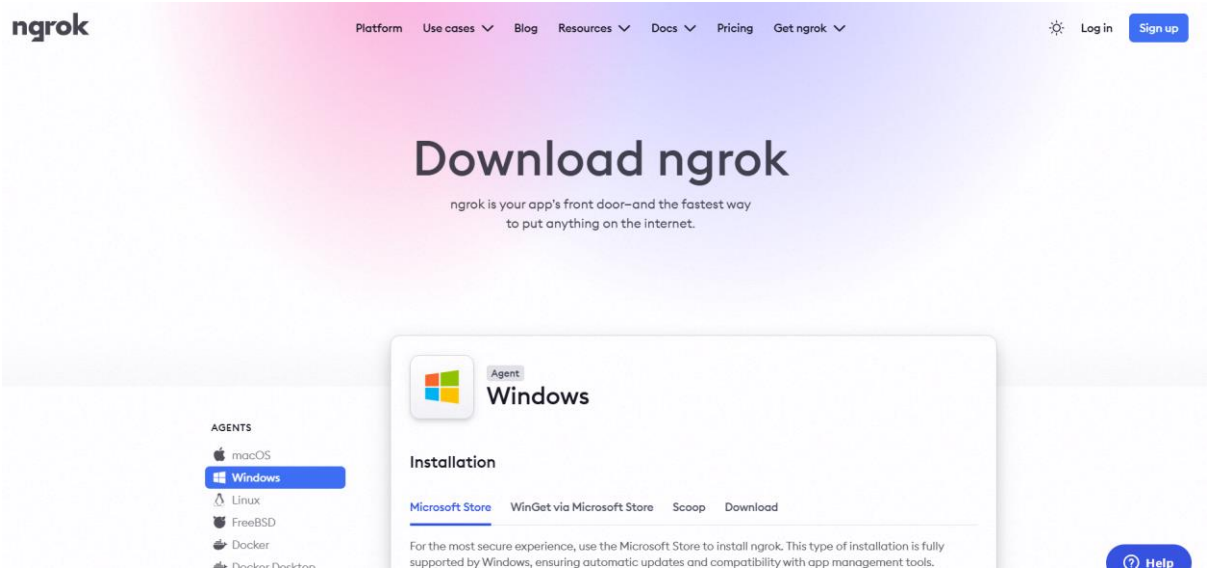
Working on windows 11

Exercise 1: Jenkins CI/CD using Git Webhook

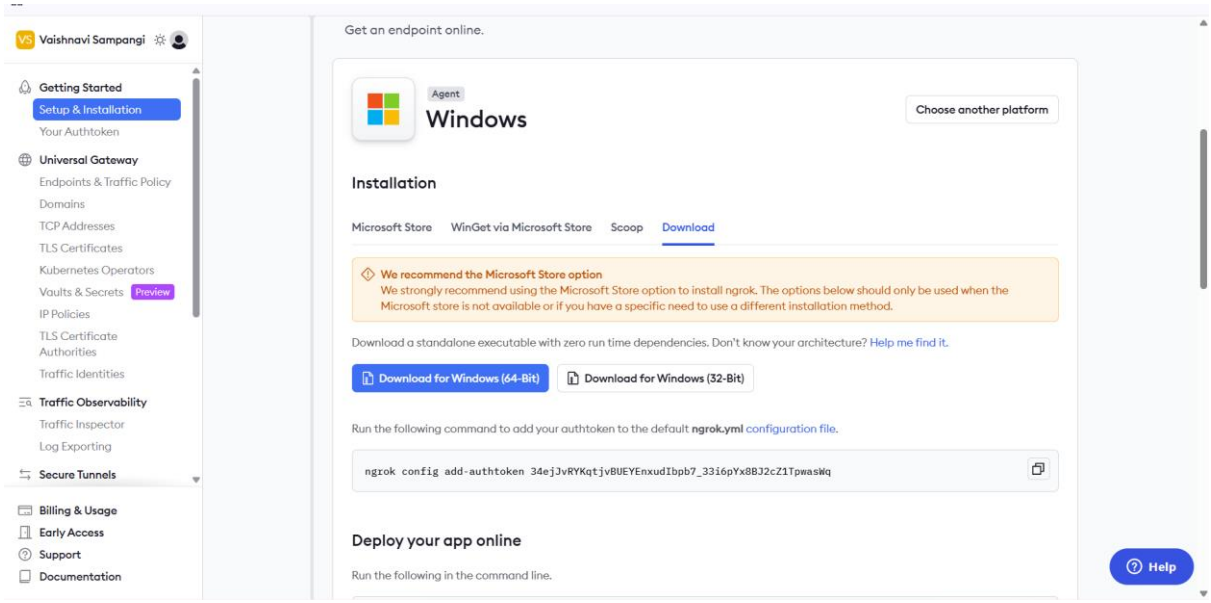
Step-1: To install ngroks Go->settings->privacy and security -> windows security -> off antivirus ->



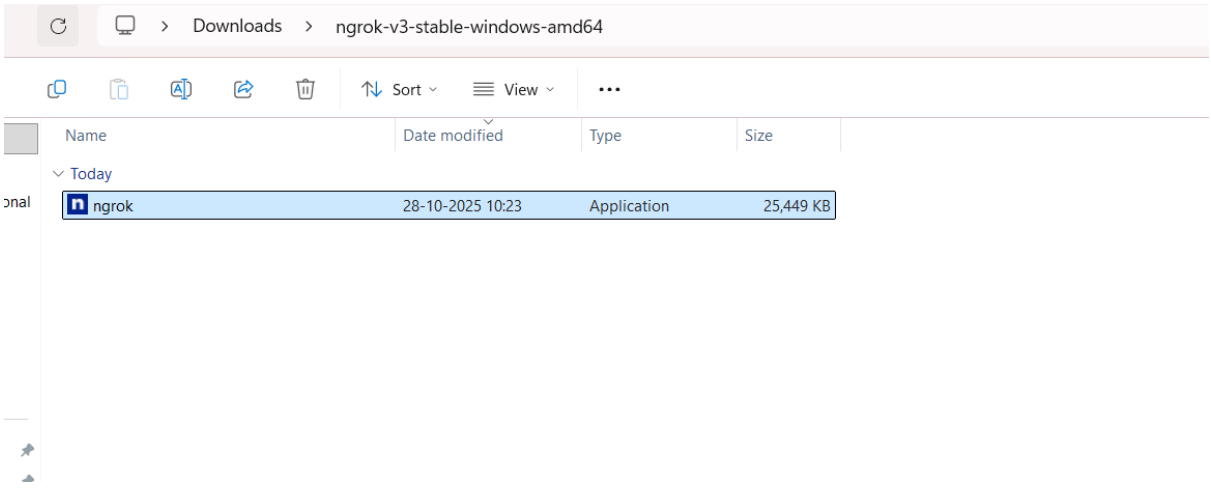
Step-2:Go -> https://ngrok.com and signup by giving your name ,email and password of atleast 10 charcaters



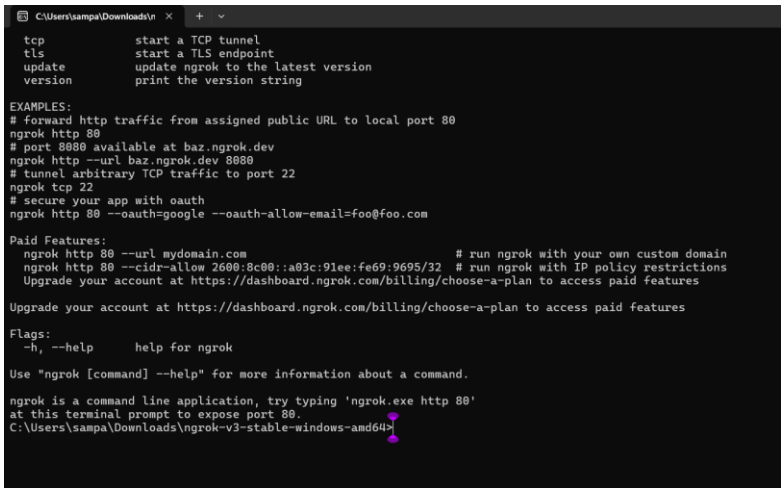
Step-3: After sign in up ,it will show below screen with your name in the top left .now click on download for windows (64Bit) to download ngork



Step4:After downloading ,Extract the file and click on ngrok.exe

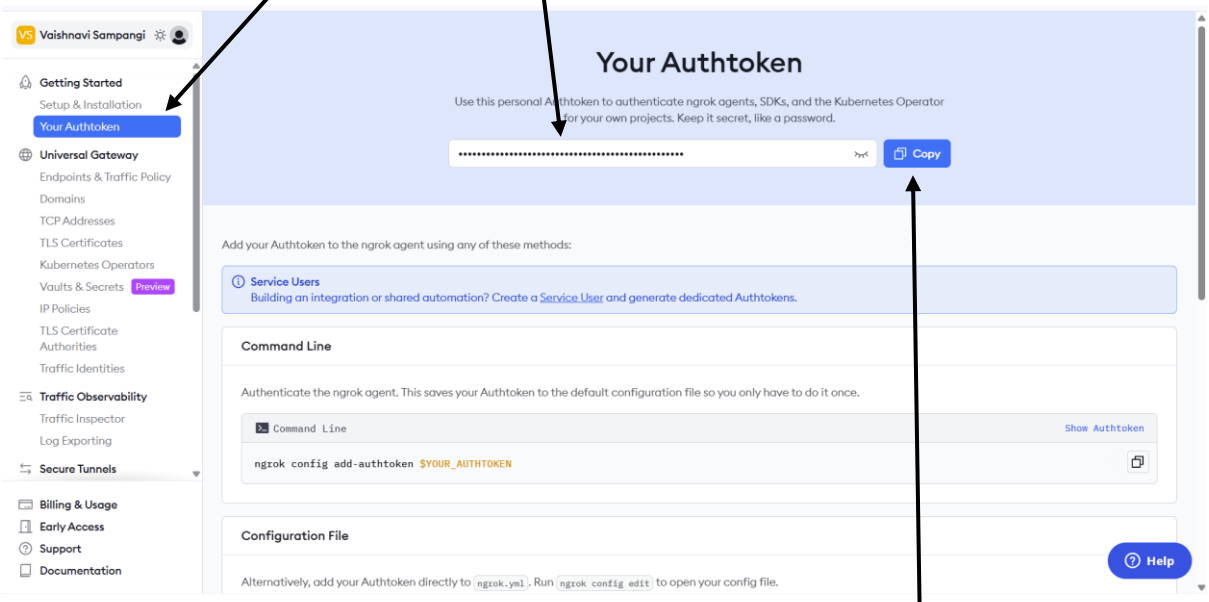


Ngrok command prompt appears as below



Step-5:Connect Your ngrok Account (optional but useful)

- Go to ngrok gives you an auth token.
- Then go to your Authtoken click here
- Copy your Authtoken



CREATE AUTHENTICATOR [https://dashboard.ngrok.com/get-started/your-authtoken]
Run this command in ngrok command prompt:(replace <your_token> with yours):

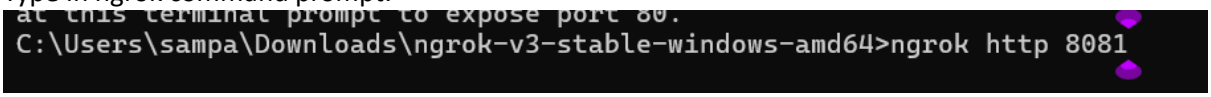
ngrok config add-authtoken <your_token> // syntax:
Example command
ngrok config add-authtoken 34ejJvRYKqtjvBUEYEnxudIbpb7_33i6pYx8BJ2cZ1TpwasWq

Step-6

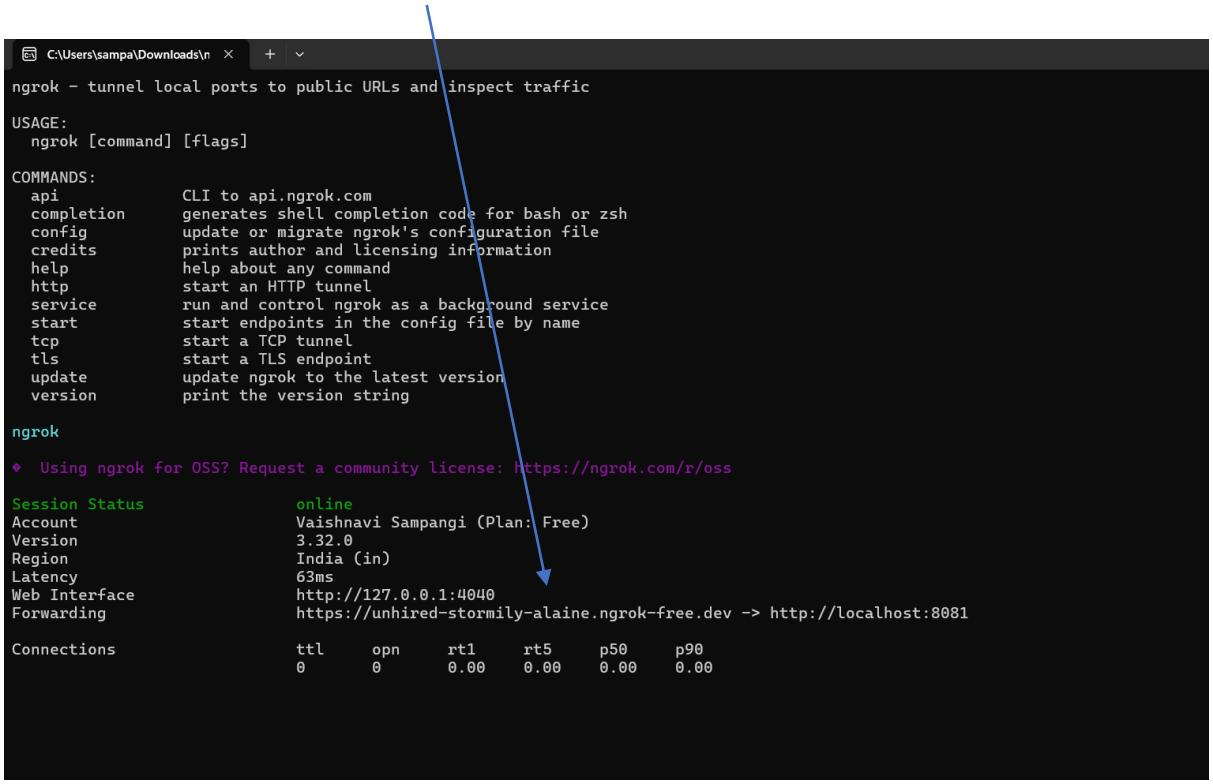
Start a Tunnel for Jenkins

- Check on which port is your Jenkins running . for this give in browers or url localhost:8081
  For me Jenkins is running on 8081
- Go to ngrok command prompt and type below command
- ngork http 8081 //Always use this command to start a tunnel for jenkins .

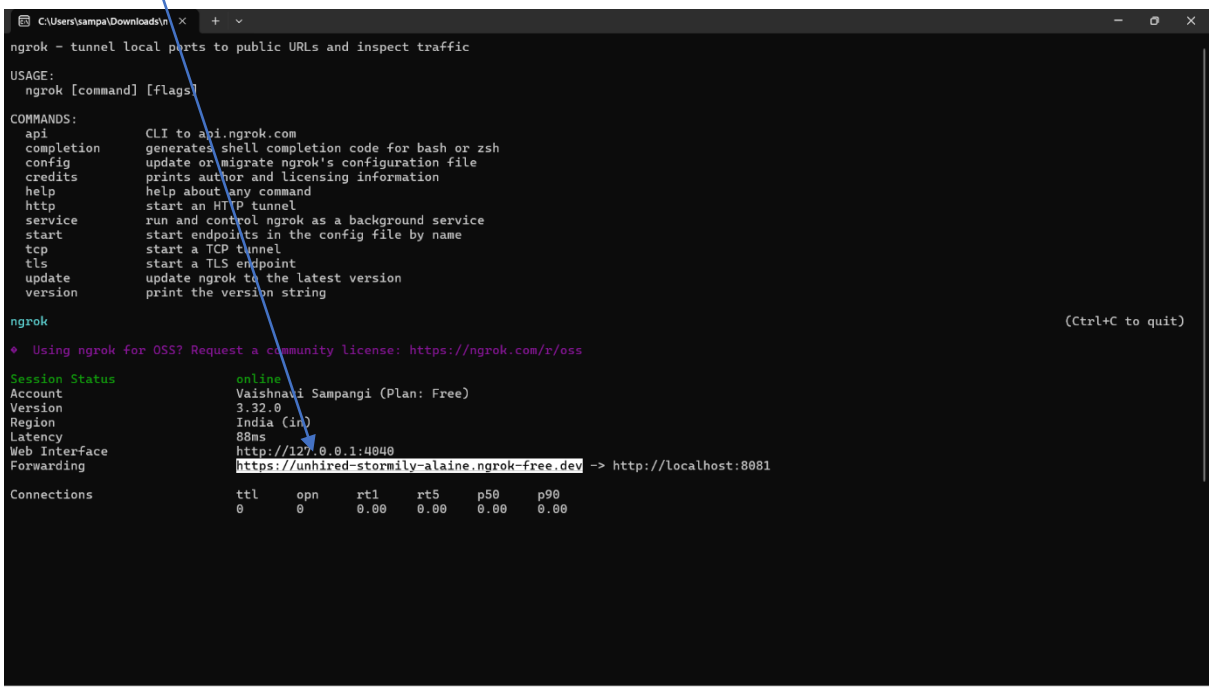
Type in ngrok command prompt:



Next it shows this public jenkins URL generated by ngrok that can be pasted into github repo for Webhooks.



Copy this URL only highlighted part

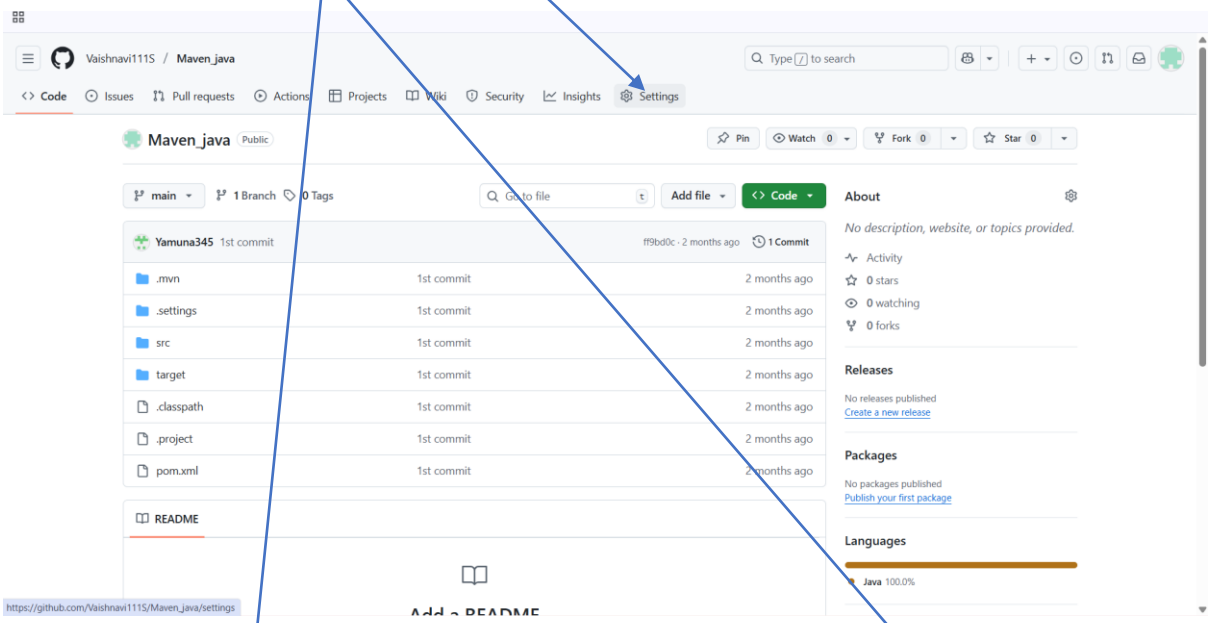


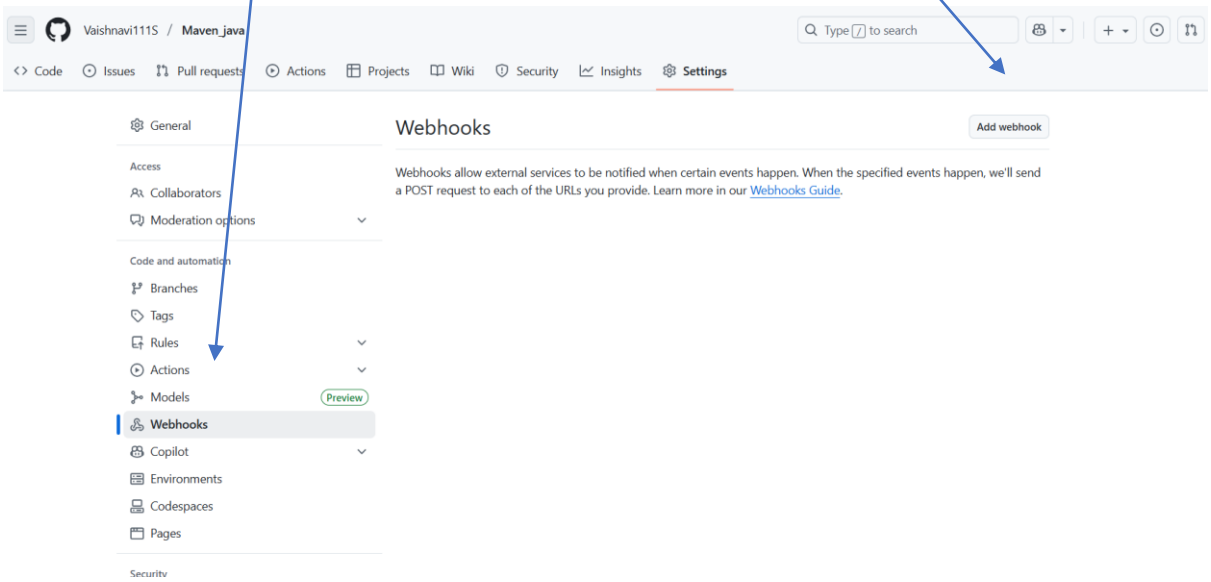
Step-7: **Configure Webhook in GitHub**

1. Go to your GitHub repository.

2. Navigate to Settings → **Webhooks.**
3. Click "**Add webhook**".
4. In the Payload URL field:
    - Enter the Jenkins webhook URL in the format:
      http://<**jenkins-server-url**>/github-webhook/
      Ex: **https://unhired-stormily-alaine.ngrok-free.dev**/github-webhook/

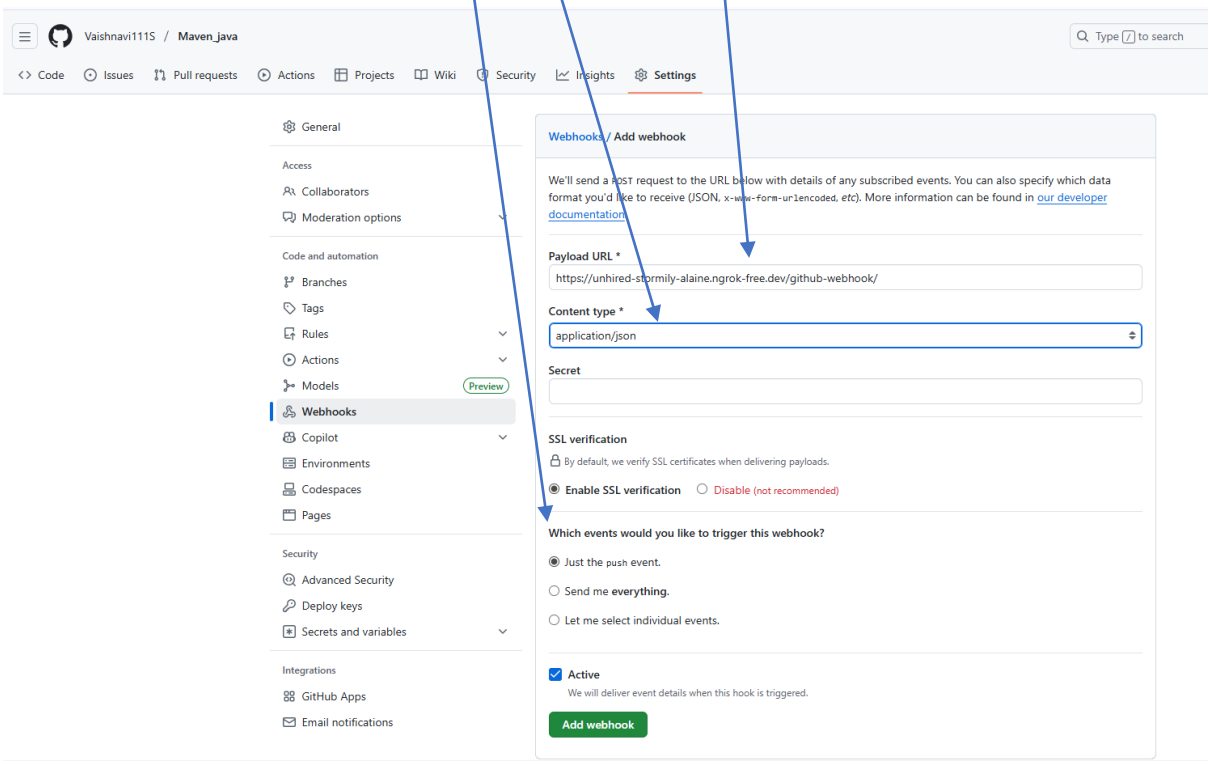
Note: If Jenkins is running on localhost, GitHub cannot access it directly





Step-8:

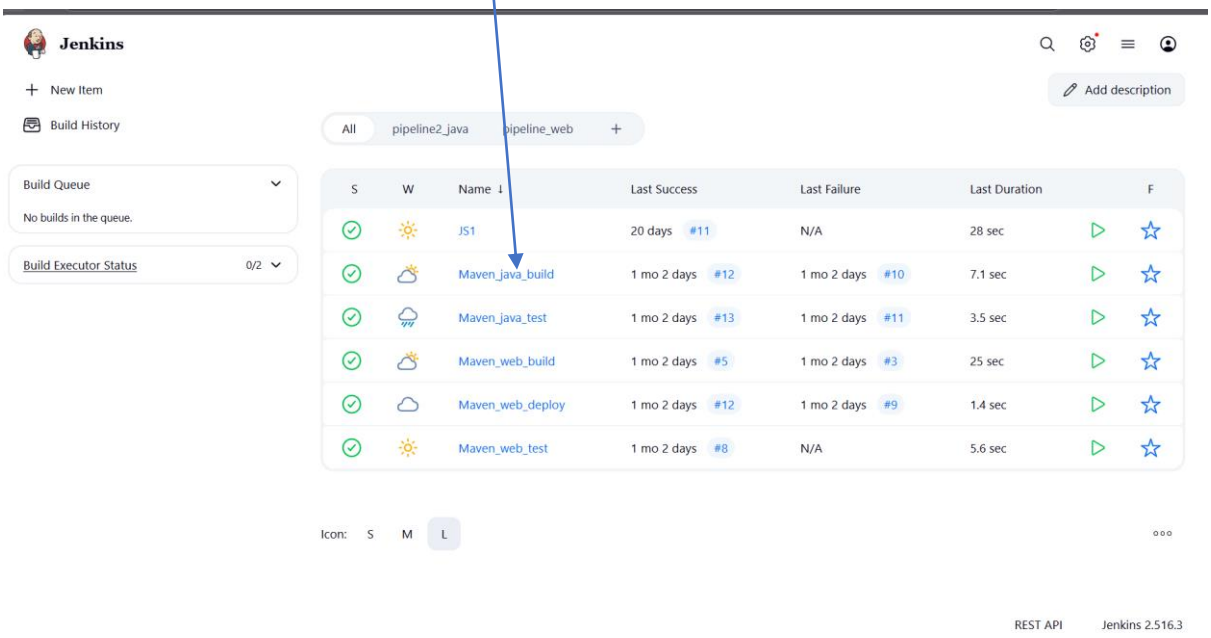
- Add url **https://unhired-stormily-alaine.ngrok-free.dev**/github-webhook/
- Set content Type to application/json
- Under “Which events would you like to trigger this webhook?”, select: Just the push event.
    - Click “Add webhook” to save.



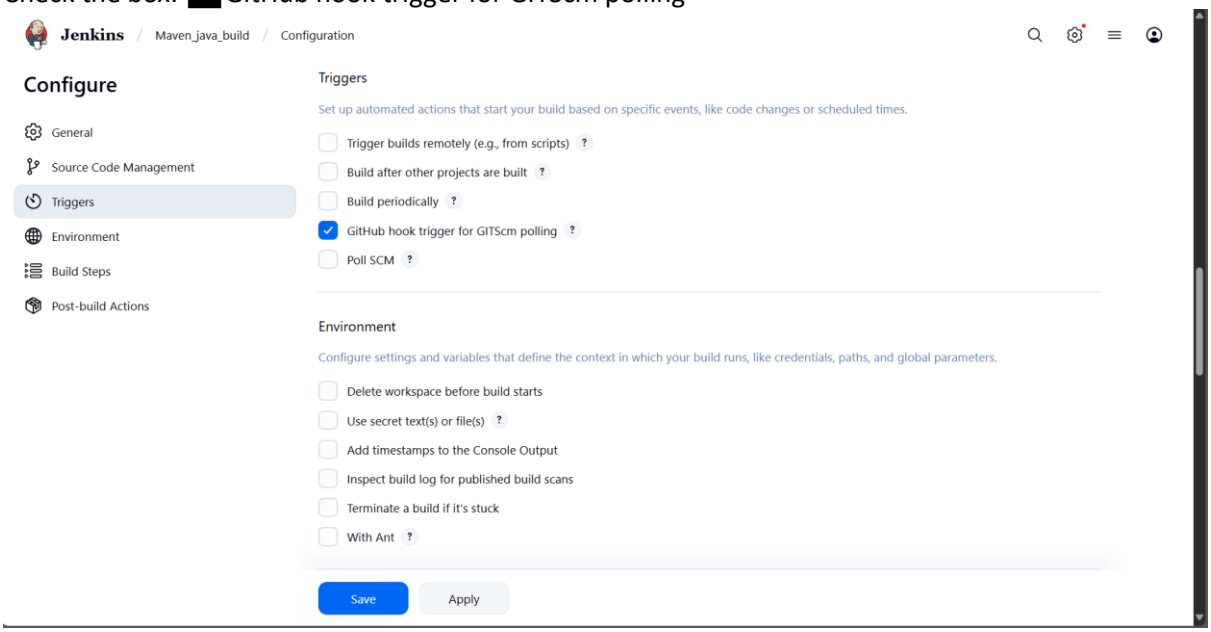
Step 10: Configure Jenkins to Accept GitHub Webhooks

1. Open Jenkins Dashboard.

2. Select the job (freestyle or pipeline) you've already created.



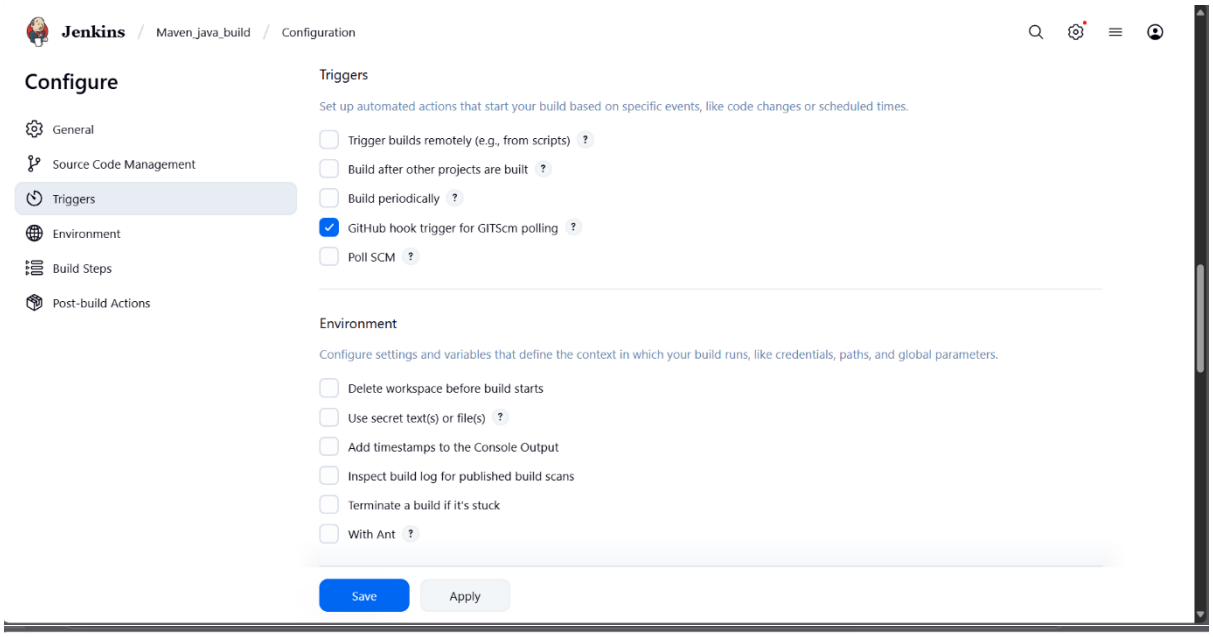
3. Click Configure.
4. Scroll down to the Build Triggers section.
5. Check the box: ☑ GitHub hook trigger for GITScm polling

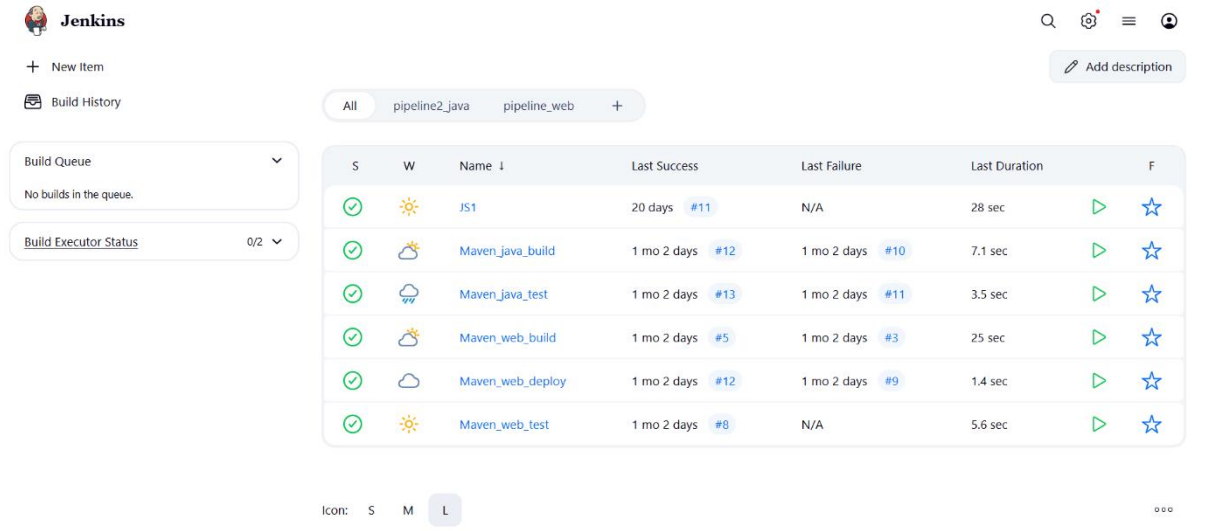


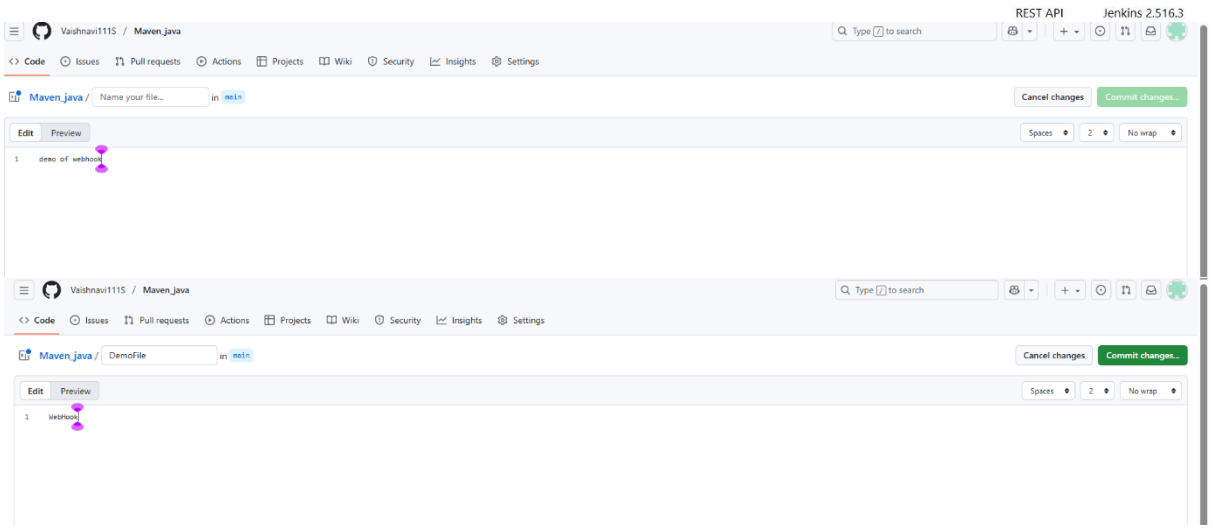
6. Click Save.

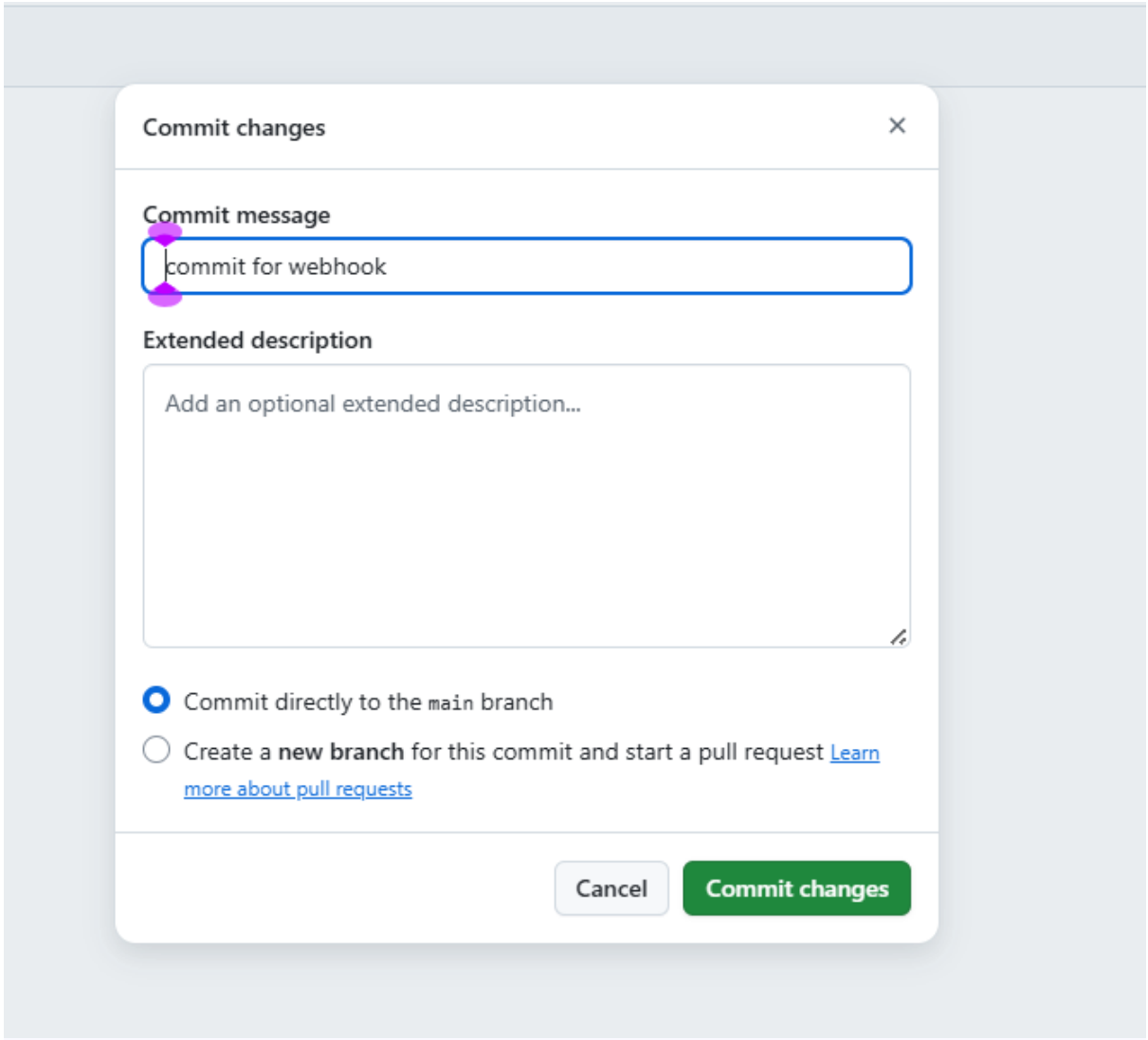
Step 11: Test the Setup

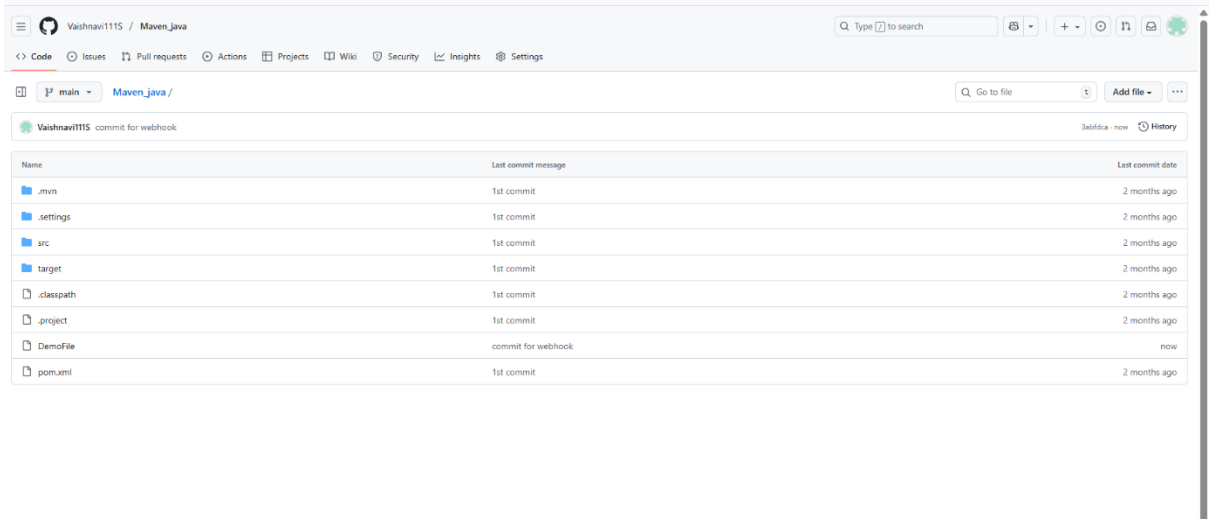
1. Make any code update in your local repo and push it to GitHub.
2. Once pushed, GitHub will trigger the webhook.
3. Jenkins will automatically detect the change and start the build pipeline.

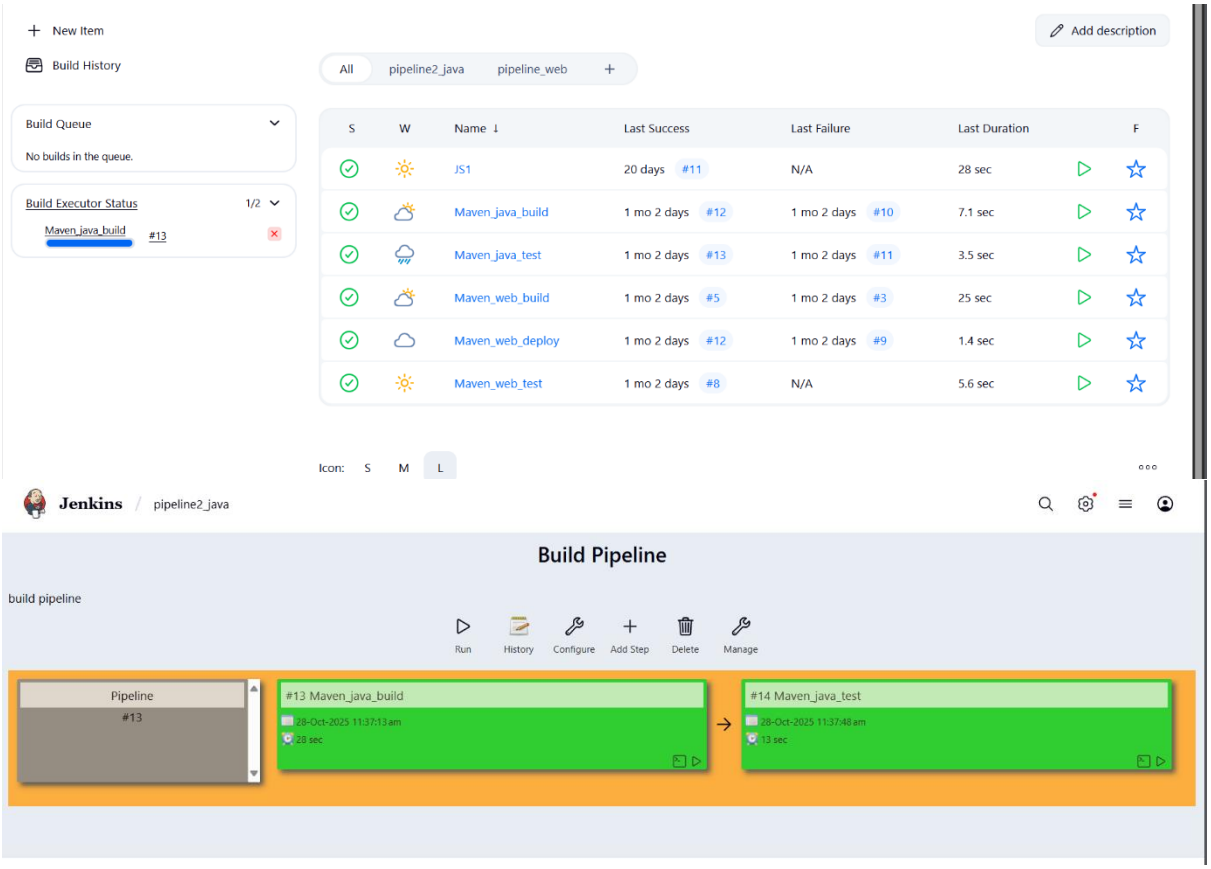

Jenkins / Maven_java_build / Configuration
Configure
General
Source Code Management
Triggers
Environment
Build Steps
Post-build Actions
Triggers
Set up automated actions that start your build based on specific events, like code changes or scheduled times.
Trigger builds remotely (e.g., from scripts)
Build after other projects are built
Build periodically
GitHub hook trigger for GITScm polling
Poll SCM
Environment
Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.
Delete workspace before build starts
Use secret text(s) or file(s)
Add timestamps to the Console Output
Inspect build log for published build scans
Terminate a build if it's stuck
With Ant
Save
Apply


Jenkins
New Item
Build History
Add description
All
pipeline2_java
pipeline_web
Build Queue
No builds in the queue.
Build Executor Status 0/2
S W Name ↓ Last Success Last Failure Last Duration F
JS1 20 days #11 N/A 28 sec
Maven_java_build 1 mo 2 days #12 1 mo 2 days #10 7.1 sec
Maven_java_test 1 mo 2 days #13 1 mo 2 days #11 3.5 sec
Maven_web_build 1 mo 2 days #5 1 mo 2 days #3 25 sec
Maven_web_deploy 1 mo 2 days #12 1 mo 2 days #9 1.4 sec
Maven_web_test 1 mo 2 days #8 N/A 5.6 sec
Icon: S M L


REST API
Jenkins 2.516.3
Vaishnavi111S / Maven_java
Code Issues Pull requests Actions Projects Wiki Security Insights Settings
Maven_java / Name your file... in main
Cancel changes
Commit changes...
Edit Preview
demo of webhook
Vaishnavi111S / Maven_java
Maven_java / DemoFile in main
Cancel changes
Commit changes...
Edit Preview
WebHook


Commit changes
Commit message
commit for webhook
Extended description
Add an optional extended description...
Commit directly to the main branch
Create a new branch for this commit and start a pull request Learn more about pull requests
Cancel
Commit changes


Vaishnavi1115 / Maven_java
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
main
Maven_java /
Add file
Vaishnavi1115 commit for webhook
History
Name
Last commit message
Last commit date
.mvn
1st commit
2 months ago
.settings
1st commit
2 months ago
src
1st commit
2 months ago
target
1st commit
2 months ago
.classpath
1st commit
2 months ago
.project
1st commit
2 months ago
DemoFile
commit for webhook
now
pom.xml
1st commit
2 months ago



outcome

- You've successfully connected GitHub and Jenkins using webhooks.
- Every time you push code to GitHub, Jenkins will automatically start building your project without manual intervention.

EXCERCISE-2

Setting Up Jenkins Email Notification Setup (Using Gmail with App Password)

Creation of app password

1. Gmail: Enable App Password (for 2-Step Verification)

i. Go to: https://myaccount.google.com

ii. Enable 2-Step Verification

- Navigate to:
  - Security → 2-Step Verification
  - Turn it **ON**
  - Complete the OTP verification process (via phone/email)

iii. Generate App Password for Jenkins

- Go to:
  - Security → App passwords
- Select:
  - **App**: Other (Custom name)
  - **Name**: Jenkins-Demo
- Click **Generate**

- Copy the **16-digit app password**
    - Save it in a secure location (e.g., Notepad)

2. Jenkins Plugin Installation

i. Open Jenkins Dashboard

ii. Navigate to:

- Manage Jenkins → Manage Plugins

iii. Install Plugin:

- Search for and install:
    - Email Extension Plugin

---

3. Configure Jenkins Global Email Settings

i. Go to:

- Manage Jenkins → Configure System

A. E-mail Notification Section

Field	Value
SMTP Server	smtp.gmail.com
Use SMTP Auth	✅ Enabled
User Name	Your Gmail ID (e.g., archanareddykmit@gmail.com)
Password	Paste the 16-digit App Password
Use SSL	✅ Enabled
SMTP Port	465
Reply-To Address	Your Gmail ID (same as above)

➤ **Test Configuration**

- Click: Test configuration by sending test e-mail
- Provide a valid email address to receive a test mail
- ✅ Should receive email from Jenkins

B. Extended E-mail Notification Section

Field	Value
SMTP Server	smtp.gmail.com
SMTP Port	465
Use SSL	✅ Enabled

Field	Value
Credentials	Add Gmail ID and App Password as Jenkins credentials
Default Content Type	text/html or leave default
Default Recipients	Leave empty or provide default emails
Triggers	Select as per needs (e.g., Failure)

---

4. Configure Email Notifications for a Jenkins Job

i. Go to:

- Jenkins → Select a Job → Configure

---

ii. In the Post-build Actions section:

- Click: Add post-build action → **Editable Email Notification**

A. Fill in the fields:

Field	Value
Project Recipient List	Add recipient email addresses (comma-separated)
Content Type	Default (text/plain) or text/html
Triggers	Select events (e.g., Failure, Success, etc.)
Attachments	(Optional) Add logs, reports, etc.

---

iii. Click Save

Now your Jenkins job is set up to send email notifications based on the build status!

Takeaway :
Students learned how to integrate Jenkins with GitHub using webhooks to automate build triggers and configure email notifications to monitor build success or failure effectively.