What is Poll SCM in Jenkins?

Poll SCM is a Jenkins feature that checks a source control repository (like Git) **at regular intervals** to see if **any new changes (commits)** have been made. If changes are found, the Jenkins job is triggered.

Feature	Description	
Full Name	Poll Source Code Management (SCM)	
Trigger Type	Conditional — Only triggers if there are new changes in the repo	
Tool Used	Cron syntax (e.g., H/5 * * * *)	
Common Use	Automating builds based on Git commits without constant manual triggering	

* How It Works:

- 1. Jenkins runs a **Git status check** at the interval you set.
- 2. If **new commits are detected**, the job is triggered.
- 3. If no changes, Jenkins skips the build.

Your Notes (Explained):

From your handwritten notes:

- Poll SCM:

"By given time, Jenkins job will trigger with condition."

Correct: Unlike Build Periodically, Poll SCM only triggers when a change is detected.

- Condition:

Before triggering the job, Jenkins verifies Git status.

- If commit found → Jenkins triggers the build.
- If no commit → Jenkins does nothing.

- Example:

"At 45th minute, my Jenkins job tries to trigger but no commit"
"I commit at 46th min — Jenkins needs to wait till 47th min"

Correct: Jenkins **polls at fixed times**. If you commit between two polls, Jenkins **waits until next poll**.

Scenario:

Time	Action	Result
12:00	Jenkins polls, no changes	Build not triggered
12:01	Developer pushes commit	Nothing happens immediately
12:02	Jenkins polls again, sees commit	Build triggered

☑ Solution You Mentioned: GitHub Hooks

Correct: Instead of Poll SCM, use Webhooks for instant response.

Trigger Type	Description	
Poll SCM	Jenkins checks periodically	
GitHub Webhook	GitHub tells Jenkins instantly	

X Poll SCM Syntax Example:

H/5 * * * *

Runs every 5 minutes and checks for new commits.

Comparison

Feature	Poll SCM	GitHub Webhook
Trigger	Based on schedule	Triggered by GitHub event (push/PR)
Response time	May be delayed until next check	Instant
Server load	Higher (polling frequently)	Low
Internet access	Jenkins pulls	GitHub pushes to Jenkins (must be reachable)

When to Use Poll SCM?

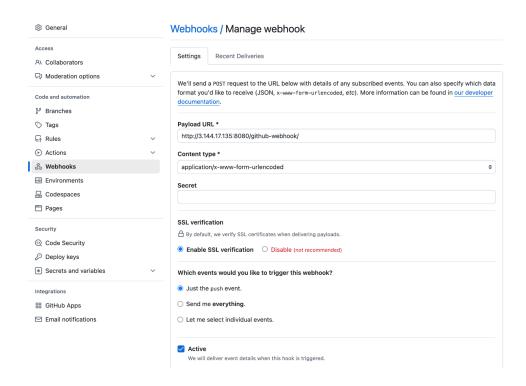
- Jenkins cannot receive incoming webhooks (firewall, internal server).
- You need **scheduled checks** instead of instant build.
- You prefer **controlled load** instead of real-time triggers.

Step-by-Step Jenkins + GitHub + Poll SCM Integration

New York Step 1: Create GitHub Webhook

- Navigate to: GitHub repo \rightarrow Settings \rightarrow Webhooks
- Payload URL: http://<your-public-ip>:8080/github-webhook/
- Content type: application/x-www-form-urlencoded
- Events: Choose Just the push event
- Active: Yes

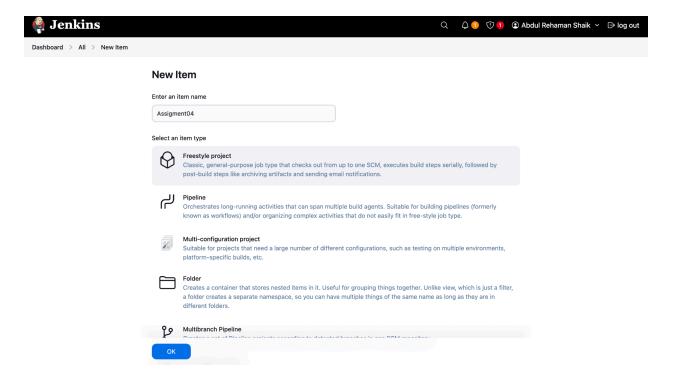
♣ This is useful if you later switch to using GitHub webhook instead of polling. For now, you're using Poll SCM, so webhook is optional.



TStep 2: Create Jenkins Job

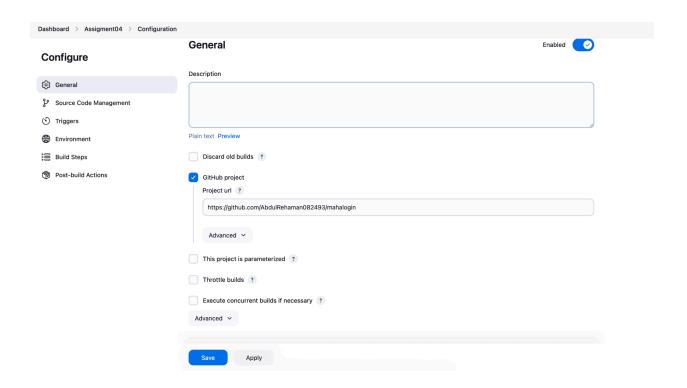
• New Item → Name: Assignment04

• Choose: Freestyle Project



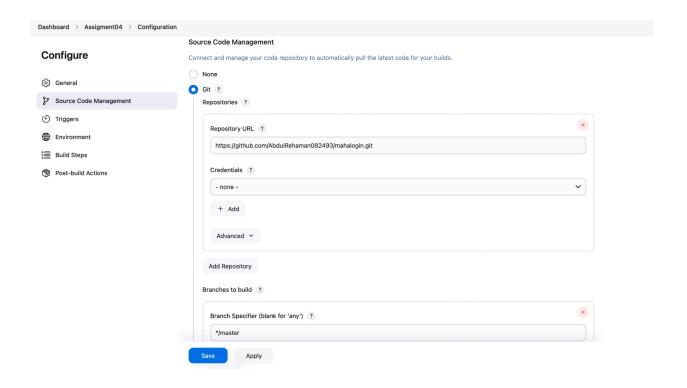
* Step 3: General Configuration

- Check GitHub project
- Project URL: https://github.com/AbdulRehaman082493/mahalogin



Step 4: Source Code Management (Git)

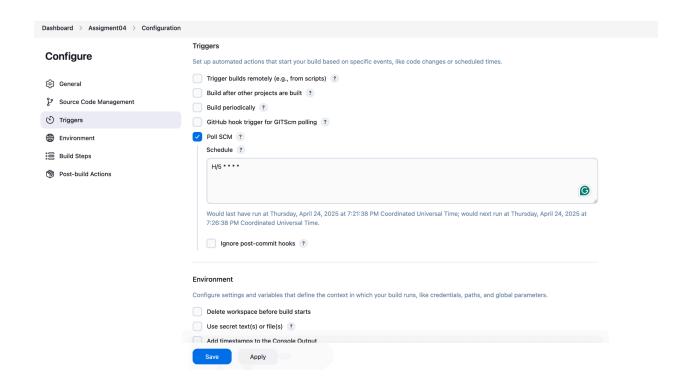
- Repository URL: https://github.com/AbdulRehaman082493/mahalogin.git
- Branches to build: */master
- Credentials: Currently set to none -
 - If your repo is private, this will cause issues. You'll need to add GitHub credentials under "Add" → Jenkins credentials.



Step 5: Configure Triggers

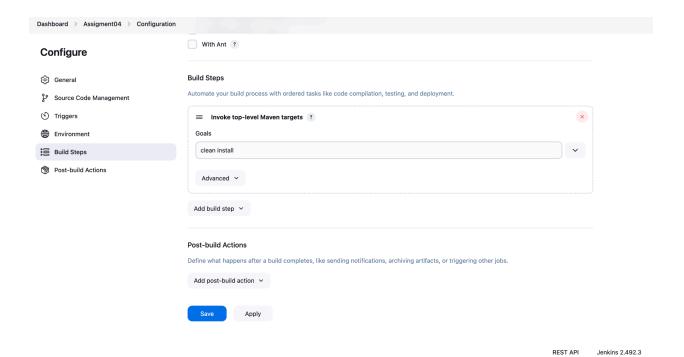
- Z Enable Poll SCM
- Schedule: H/5 * * * *
 - Jenkins will poll every 5 minutes for Git changes.
 - \circ If it finds new commits \rightarrow it triggers the build
 - \circ If not \rightarrow build is skipped

This is **not instant** like a webhook, but useful when Jenkins is behind a firewall or webhook is not reliable.



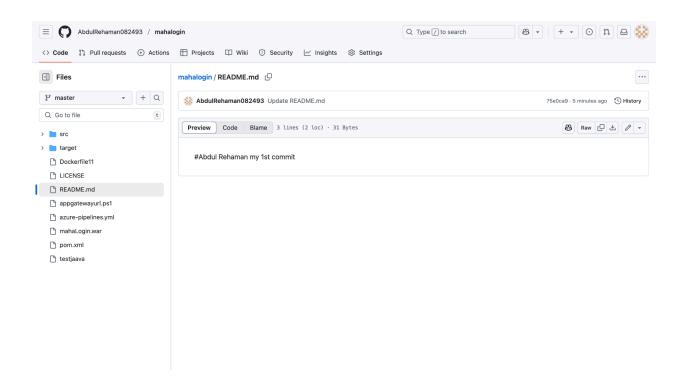
Step 6: Build Step - Maven

- Goal: clean install
- Jenkins runs mvn clean install to compile, test, and build the .war file from your code.



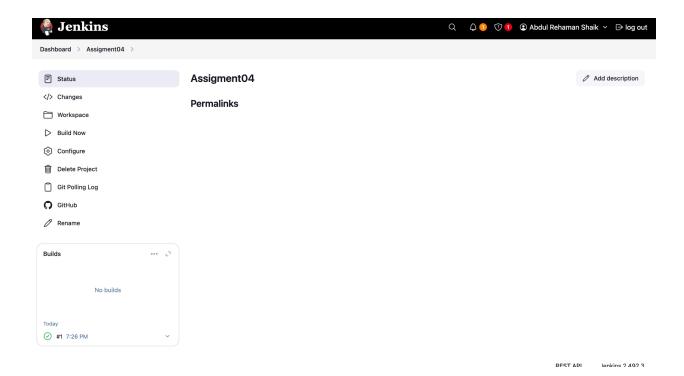
Step 7: GitHub Commit Made

- You pushed this message: Abdul Rehaman my 1st commit
- Jenkins polls GitHub
 - If commit is new \rightarrow $\boxed{\ }$ build triggers
 - \circ If no change \rightarrow \times no action



Step 8: Check Jenkins Status

• Go to Dashboard → Assignment04



• V First build triggered at 7:26 PM (as per screenshot)

Poll SCM vs Webhook (Quick Recap)

Feature	Poll SCM	GitHub Webhook
Trigger	Schedule-based (cron)	Event-based (push, PR)
Speed	May delay until next poll	Instant trigger
Jenkins Server	Can be private/internal	Must be public (receives HTTP)
Server Load	Slightly higher (polling)	Lightweight

▼ Tips to Improve Setup

- 1. **Switch to webhook** for faster builds if your Jenkins server is public.
- 2. **Add credentials** in Jenkins Git config if GitHub repo is private.
- 3. Use **post-build actions** (e.g., archive .war, deploy, email notification).