

Created and Launched an Instance

sudo -i (switch Normal to root user)

Created folder practice in /root

cd /root

mkdir practice

cd practice

pwd : /root/practice

Java Installation

yum install java -y

java --version

```
aws Services Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS
[root@ip-172-31-15-37 ~]# pwd
/root
[root@ip-172-31-15-37 ~]# mkdir practice
[root@ip-172-31-15-37 ~]# cd practice
[root@ip-172-31-15-37 practice]# yum install java -y
Last metadata expiration check: 2:45:37 ago on Tue Sep 19 14:16:10 2023.
Package java-17-amazon-corretto-1:17.0.8+8-1.amzn2023.1.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-15-37 practice]# java --version
openjdk 17.0.8.1 2023-08-22 LTS
OpenJDK Runtime Environment Corretto-17.0.8.1 (build 17.0.8.1+8-LTS)
OpenJDK 64-Bit Server VM Corretto-17.0.8.1 (build 17.0.8.1+8-LTS, mixed mode, sharing)
[root@ip-172-31-15-37 practice]#
```

Maven Installation

wget <https://dlcdn.apache.org/maven/maven-3/3.9.4/binaries/apache-maven-3.9.4-bin.zip>

unzip apache-maven-3.9.4-bin.zip

```
aws Services Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS
[root@ip-172-31-15-37 practice]# wget https://dlcdn.apache.org/maven/maven-3/3.9.4/binaries/apache-maven-3.9.4-bin.zip
--2023-09-19 17:12:05-- https://dlcdn.apache.org/maven/maven-3/3.9.4/binaries/apache-maven-3.9.4-bin.zip
Resolving dlcdn.apache.org (dlcdn.apache.org)... 151.101.2.132, 2a04:4e42::644
Connecting to dlcdn.apache.org (dlcdn.apache.org)|151.101.2.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 9439276 (9.0M) [application/zip]
Saving to: 'apache-maven-3.9.4-bin.zip'

apache-maven-3.9.4-bin.zip 100%[=====>] 9.00M --.-KB/s in 0.08s

2023-09-19 17:12:06 (118 MB/s) - 'apache-maven-3.9.4-bin.zip' saved [9439276/9439276]

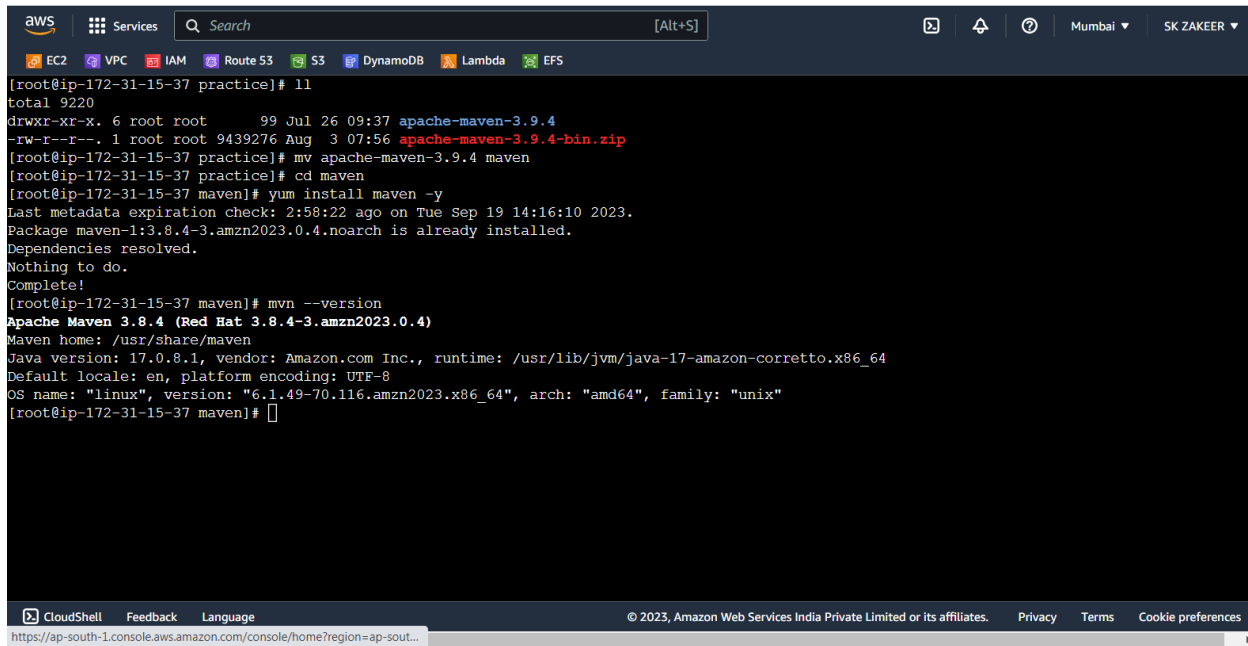
[root@ip-172-31-15-37 practice]# unzip apache-maven-3.9.4-bin.zip
```

||

```
mv apache-maven-3.9.4 maven
```

```
yum install maven -y
```

```
mvn --version
```



```
aws
Services
Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS

[root@ip-172-31-15-37 practice]# ll
total 9220
drwxr-xr-x. 6 root root    99 Jul 26 09:37 apache-maven-3.9.4
-rw-r--r--. 1 root root 9439276 Aug  3 07:56 apache-maven-3.9.4-bin.zip
[root@ip-172-31-15-37 practice]# mv apache-maven-3.9.4 maven
[root@ip-172-31-15-37 practice]# cd maven
[root@ip-172-31-15-37 maven]# yum install maven -y
Last metadata expiration check: 2:58:22 ago on Tue Sep 19 14:16:10 2023.
Package maven-1:3.8.4-3.amzn2023.0.4.noarch is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-15-37 maven]# mvn --version
Apache Maven 3.8.4 (Red Hat 3.8.4-3.amzn2023.0.4)
Maven home: /usr/share/maven
Java version: 17.0.8.1, vendor: Amazon.com Inc., runtime: /usr/lib/jvm/java-17-amazon-corretto.x86_64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.1.49-70.116.amzn2023.x86_64", arch: "amd64", family: "unix"
[root@ip-172-31-15-37 maven]#
```

Setup Environment Variables

```
cd /etc/profile.d
```

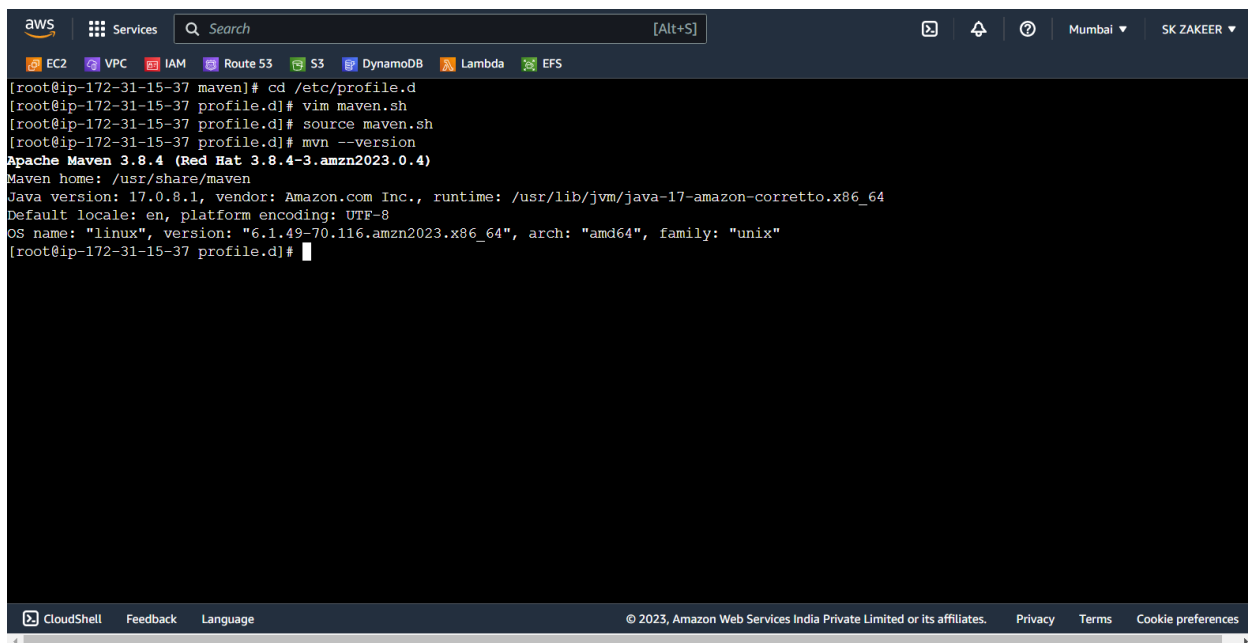
```
vim maven.sh (#!/bin/bash
```

```
    export M2_HOME=/practice/maven
```

```
    export PATH=${M2_HOME}/bin:${PATH} )
```

```
source maven.sh
```

```
mvn --version
```



```
aws
Services
Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS

[root@ip-172-31-15-37 maven]# cd /etc/profile.d
[root@ip-172-31-15-37 profile.d]# vim maven.sh
[root@ip-172-31-15-37 profile.d]# source maven.sh
[root@ip-172-31-15-37 profile.d]# mvn --version
Apache Maven 3.8.4 (Red Hat 3.8.4-3.amzn2023.0.4)
Maven home: /usr/share/maven
Java version: 17.0.8.1, vendor: Amazon.com Inc., runtime: /usr/lib/jvm/java-17-amazon-corretto.x86_64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.1.49-70.116.amzn2023.x86_64", arch: "amd64", family: "unix"
[root@ip-172-31-15-37 profile.d]#
```

Maven Build Process

Generate archetype

cd /root

mvn archetype:generate

choose artefactId: 1986

choose version: 8

define groupId: com.global

define artifactId: maven-project

define 1.0-SNAPSHOT: 1.0-SNAPSHOT

define package: com.global.app

confirm properties configuration: Y

```
aws Services Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS
Confirm properties configuration:
archetypeRepository: https://repository.apache.org/content/repositories/releases
groupId: com.global
artifactId: maven-project
version: 1.0-SNAPSHOT
package: com.global.app
Y: : Y
[INFO] -----
[INFO] Using following parameters for creating project from Archetype: brooklyn-archetype-quickstart:1.0.0
[INFO] -----
[INFO] Parameter: groupId, Value: com.global
[INFO] Parameter: artifactId, Value: maven-project
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] Parameter: package, Value: com.global.app
[INFO] Parameter: packageInPathFormat, Value: com/global/app
[INFO] Parameter: archetypeRepository, Value: https://repository.apache.org/content/repositories/releases
[INFO] Parameter: package, Value: com.global.app
[INFO] Parameter: groupId, Value: com.global
[INFO] Parameter: artifactId, Value: maven-project
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[WARNING] Don't override file /root/maven-project/src/main/resources/sample-icon.png
[INFO] Project created from Archetype in dir: /root/maven-project
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 07:24 min
[INFO] Finished at: 2023-09-19T17:33:54Z
[INFO] -----
[root@ip-172-31-15-37 ~]#
```

Validate

cd /root/maven-project

mvn validate

```
aws Services Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS
[root@ip-172-31-15-37 ~]# ll
total 0
drwxr-xr-x. 3 root root 49 Sep 19 17:33 maven-project
drwxr-xr-x. 3 root root 53 Sep 19 17:14 practice
[root@ip-172-31-15-37 ~]# cd maven-project
[root@ip-172-31-15-37 maven-project]# ll
total 12
-rw-r--r--. 1 root root 2656 Sep 19 17:33 README.md
-rw-r--r--. 1 root root 4358 Sep 19 17:33 pom.xml
drwxr-xr-x. 4 root root 30 Sep 19 17:33 src
[root@ip-172-31-15-37 maven-project]# mvn validate
[INFO] Scanning for projects...
[INFO] -----< com.global:maven-project >-----
[INFO] Building Sample Apache Brooklyn Project com.global:maven-project v1.0-SNAPSHOT 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO] --- buildnumber-maven-plugin:1.3:create (default) @ maven-project ---
[INFO] Executing: /bin/sh -c cd /root/maven-project && git rev-parse --verify HEAD
[INFO] Working directory: /root/maven-project
[INFO] Storing buildNumber: null at timestamp: 1695145189187
[INFO] Storing buildScmBranch: master
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 2.726 s
[INFO] Finished at: 2023-09-19T17:39:49Z
[INFO] -----
[root@ip-172-31-15-37 maven-project]#
```

mvn compile

```
aws
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[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.global:maven-project >-----
[INFO] Building Sample Apache Brooklyn Project com.global:maven-project v1.0-SNAPSHOT 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- buildnumber-maven-plugin:1.3:create (default) @ maven-project ---
[INFO] Executing: /bin/sh -c cd /root/maven-project && git rev-parse --verify HEAD
[INFO] Working directory: /root/maven-project
[INFO] Storing buildNumber: null at timestamp: 1695145582058
[INFO] Storing buildScmBranch: master
[INFO]
[INFO] --- maven-remote-resources-plugin:1.5:process (default) @ maven-project ---
[INFO]
[INFO] --- maven-resources-plugin:2.7:resources (default-resources) @ maven-project ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] Copying 2 resources
[INFO] Copying 3 resources
[INFO]
[INFO] --- maven-compiler-plugin:3.6.1:compile (default-compile) @ maven-project ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to /root/maven-project/target/classes
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] -----
[INFO] Total time: 13.931 s
[INFO] Finished at: 2023-09-19T17:46:32Z
[INFO] -----
[root@ip-172-31-15-37 maven-project]#
```

mvn test

```
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2023-09-19 17:54:55,170 INFO - MySampleImpl.init() with config myConfVal
2023-09-19 17:54:55,193 INFO GQ9OBmpQ-[mgdshvdjkl,elvw43ht4b] MySampleImpl.start({})
2023-09-19 17:54:55,194 WARN GQ9OBmpQ-[mgdshvdjkl,elvw43ht4b] Setting MySampleImpl(id=elvw43ht4b) on-fire due to problems when expected running, up=false, not-up-indicators: {}
2023-09-19 17:54:55,219 INFO m0cvaXPa-[mgdshvdjkl,elvw43ht4b] MySampleImpl.myEffector(myArgVal)
2023-09-19 17:54:55,222 INFO ROgWgtgq-[mgdshvdjkl,elvw43ht4b] MySampleImpl.stop()
2023-09-19 17:54:55,231 INFO - TESTNG PASSED: "Surefire test" - com.global.app.MySampleTest.testEntity() finished in 85 ms
2023-09-19 17:54:55,234 INFO - TESTNG INVOKING CONFIGURATION: "Surefire test" - @AfterMethod org.apache.brooklyn.core.test.BrooklynMgmtUnitTestSupport.tearDown()
2023-09-19 17:54:55,242 INFO - TESTNG PASSED CONFIGURATION: "Surefire test" - @AfterMethod org.apache.brooklyn.core.test.BrooklynMgmtUnitTestSupport.tearDown() finished in 8 ms
2023-09-19 17:54:55,262 INFO - TESTNG

=====
Surefire test
Tests run: 3, Failures: 0, Skips: 0
=====
Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 5.108 sec - in TestSuite
Results :

Tests run: 3, Failures: 0, Errors: 0, Skipped: 0

[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 23.012 s
[INFO] Finished at: 2023-09-19T17:54:55Z
[INFO] -----
[root@ip-172-31-15-37 maven-project]#
```

mvn package

```
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EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS

tSupport.tearDown()
2023-09-19 17:56:20,414 INFO - TESTNG PASSED CONFIGURATION: "Surefire test" - @AfterMethod org.apache.brooklyn.core.test.BrooklynMgmtUnitTestSupport.tearDown() finished in 10 ms
2023-09-19 17:56:20,437 INFO - TESTNG
=====
Surefire test
Tests run: 3, Failures: 0, Skips: 0
=====
Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 4.779 sec - in TestSuite
Results :

Tests run: 3, Failures: 0, Errors: 0, Skipped: 0

[INFO]
[INFO] --- maven-jar-plugin:2.6:jar (default-jar) @ maven-project ---
[INFO] Building jar: /root/maven-project/target/maven-project-1.0-SNAPSHOT.jar
[INFO]
[INFO] --- maven-site-plugin:3.4:attach-descriptor (attach-descriptor) @ maven-project ---
[INFO]
[INFO] --- maven-jar-plugin:2.6:test-jar (test-jar-creation) @ maven-project ---
[INFO] Building jar: /root/maven-project/target/maven-project-1.0-SNAPSHOT-tests.jar
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] -----
[INFO] Total time: 20.987 s
[INFO] Finished at: 2023-09-19T17:56:21Z
[INFO] -----
[root@ip-172-31-15-37 maven-project]#
```

mvn verify

```
aws Services Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS

tSupport.tearDown()
2023-09-19 18:29:02,990 INFO - TESTNG PASSED CONFIGURATION: "Surefire test" - @AfterMethod org.apache.brooklyn.core.test.BrooklynMgmtUnitTests
upport.tearDown() finished in 12 ms
2023-09-19 18:29:03,012 INFO - TESTNG
=====
Surefire test
Tests run: 3, Failures: 0, Skips: 0
=====
Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 5.272 sec - in TestSuite

Results :

Tests run: 3, Failures: 0, Errors: 0, Skipped: 0

[INFO]
[INFO] --- maven-jar-plugin:2.6:jar (default-jar) @ maven-project ---
[INFO] Building jar: /root/maven-project/target/maven-project-1.0-SNAPSHOT.jar
[INFO]
[INFO] --- maven-site-plugin:3.4:attach-descriptor (attach-descriptor) @ maven-project ---
[INFO]
[INFO] --- maven-jar-plugin:2.6:test-jar (test-jar-creation) @ maven-project ---
[INFO] Building jar: /root/maven-project/target/maven-project-1.0-SNAPSHOT-tests.jar
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 20.981 s
[INFO] Finished at: 2023-09-19T18:29:04Z
[INFO]
[root@ip-172-31-15-37 maven-project]#
```

mvn install

```
aws Services Search [Alt+S]
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS

Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 5.023 sec - in TestSuite

Results :

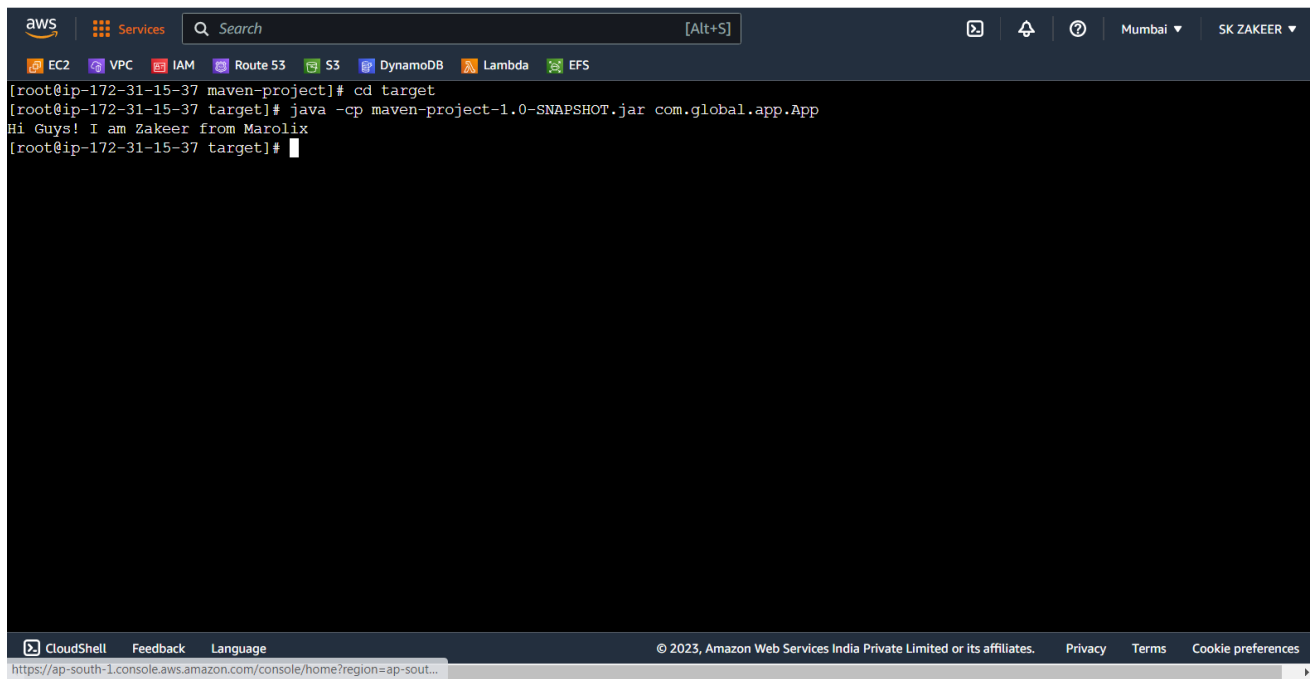
Tests run: 3, Failures: 0, Errors: 0, Skipped: 0

[INFO]
[INFO] --- maven-jar-plugin:2.6:jar (default-jar) @ maven-project ---
[INFO] Building jar: /root/maven-project/target/maven-project-1.0-SNAPSHOT.jar
[INFO]
[INFO] --- maven-site-plugin:3.4:attach-descriptor (attach-descriptor) @ maven-project ---
[INFO]
[INFO] --- maven-jar-plugin:2.6:test-jar (test-jar-creation) @ maven-project ---
[INFO] Building jar: /root/maven-project/target/maven-project-1.0-SNAPSHOT-tests.jar
[INFO]
[INFO] --- maven-install-plugin:2.5.2:install (default-install) @ maven-project ---
[INFO] Installing /root/maven-project/target/maven-project-1.0-SNAPSHOT.jar to /root/.m2/repository/com/global/maven-project/1.0-SNAPSHOT/maven-project-1.0-SNAPSHOT.jar
[INFO] Installing /root/maven-project/pom.xml to /root/.m2/repository/com/global/maven-project/1.0-SNAPSHOT/maven-project-1.0-SNAPSHOT.pom
[INFO] Installing /root/maven-project/target/maven-project-1.0-SNAPSHOT-tests.jar to /root/.m2/repository/com/global/maven-project/1.0-SNAPSHOT/maven-project-1.0-SNAPSHOT-tests.jar
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 21.096 s
[INFO] Finished at: 2023-09-19T17:57:36Z
[INFO]
[root@ip-172-31-15-37 maven-project]#
```

Run the jar file

cd target

java -cp maven-project-1.0-SNAPSHOT.jar com.global.app



The screenshot shows the AWS CloudShell terminal interface. At the top, there is a navigation bar with the AWS logo, a 'Services' menu, a search bar, and a '[Alt+S]' shortcut. Below this is a row of service icons: EC2, VPC, IAM, Route 53, S3, DynamoDB, Lambda, and EFS. The terminal window displays the following commands and output:

```
[root@ip-172-31-15-37 maven-project]# cd target
[root@ip-172-31-15-37 target]# java -cp maven-project-1.0-SNAPSHOT.jar com.global.app.App
Hi Guys! I am Zakeer from Marolix
[root@ip-172-31-15-37 target]#
```

The bottom of the interface includes a footer with 'CloudShell', 'Feedback', and 'Language' links, a copyright notice '© 2023, Amazon Web Services India Private Limited or its affiliates.', and links for 'Privacy', 'Terms', and 'Cookie preferences'. The browser address bar at the very bottom shows the URL: <https://ap-south-1.console.aws.amazon.com/console/home?region=ap-sout...>

Git Installation

yum install git -y

git --version

```
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS
[root@ip-172-31-15-37 ~]# yum install git -y
Last metadata expiration check: 4:19:18 ago on Tue Sep 19 14:16:10 2023.
Package git-2.40.1-1.amzn2023.0.1.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@ip-172-31-15-37 ~]# git --version
git version 2.40.1
[root@ip-172-31-15-37 ~]#
```

Git initialization

cd maven-project

git init

```
[root@ip-172-31-15-37 ~]# git --version
git version 2.40.1
[root@ip-172-31-15-37 ~]# cd maven-project
[root@ip-172-31-15-37 maven-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 /root/maven-project/.git/
[root@ip-172-31-15-37 maven-project]# ls -la
total 1976
drwxr-xr-x. 5 root root   126 Sep 19 18:37 .
dr-xr-x---. 7 root root   200 Sep 19 18:12 ..
drwxr-xr-x. 7 root root   119 Sep 19 18:37 .git
-rw-r--r--. 1 root root 2651 Sep 19 17:52 README.md
-rw-r--r--. 1 root root 1861788 Sep 19 18:29 brooklyn.debug.log
-rw-r--r--. 1 root root 129294 Sep 19 18:29 brooklyn.info.log
-rw-r--r--. 1 root root 4348 Sep 19 17:52 pom.xml
drwxr-xr-x. 4 root root    30 Sep 19 17:52 src
drwxr-xr-x. 10 root root 16384 Sep 19 18:29 target
[root@ip-172-31-15-37 maven-project]#
```

CloudShell Feedback Language

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git add *

git commit -m "maven-project committed"

git branch -M master

git remote add origin {githuburl}

git push -u origin master

```
aws Services Search [Alt+S] Mumbai SK ZAKEER
EC2 VPC IAM Route 53 S3 DynamoDB Lambda EFS
[root@ip-172-31-15-37 maven-project]# git branch -M master
[root@ip-172-31-15-37 maven-project]# git remote add origin https://github.com/skzakeer27/maven-project.git
[root@ip-172-31-15-37 maven-project]# git push -u origin master
Username for 'https://github.com': skzakeer27
Password for 'https://github.com':
Enumerating objects: 101, done.
Counting objects: 100% (101/101), done.
Compressing objects: 100% (82/82), done.
Writing objects: 100% (101/101), 371.65 KiB | 4.83 MiB/s, done.
Total 101 (delta 7), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (7/7), done.
To https://github.com/skzakeer27/maven-project.git
 * [new branch]      master -> master
branch 'master' set up to track 'origin/master'.
[root@ip-172-31-15-37 maven-project]#
```

Created maven-project repository in GitHub

Before pushing the code from local repo

The screenshot shows the GitHub interface for a newly created repository named 'maven-project'. The repository is public and has 0 stars, 0 forks, and 1 watcher. The page includes a search bar, navigation tabs (Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, Settings), and a header with repository details. Below the header, there are two main sections: 'Set up GitHub Copilot' and 'Add collaborators to this repository'. A 'Quick setup' section provides instructions for cloning the repository using HTTPS or SSH, with a copyable URL: `https://github.com/skzakeer27/maven-project.git`. It also offers a command-line setup for creating a new repository, showing the following commands: `echo "# maven-project" >> README.md`, `git init`, and `git add README.md`.

After Pushing the code to maven-project repository in GitHub

The screenshot shows the GitHub repository page for 'maven-project' after the code has been pushed. The repository is now public and has 0 stars, 0 forks, and 1 watcher. The page includes a search bar, navigation tabs (Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, Settings), and a header with repository details. Below the header, there are two main sections: 'About' and 'Releases'. The 'About' section shows the repository's README, activity, stars, and forks. The 'Releases' section shows that no releases have been published. The 'Packages' section shows that no packages have been published. The 'Code' section shows the repository's files and folders, including 'src', 'target', 'README.md', 'brooklyn.debug.log', 'brooklyn.info.log', and 'pom.xml'. The 'README.md' file is selected, and its content is displayed in the main area.