

# Finance Me - Project

## **Banking and Finance Domain**

**FinanceMe has decided to opt for microservice architecture for its applications and decided to go DevOps by implementing necessary automations using CICD. FinanceMe has decided to use AWS as primary cloud services provider to create servers, databases and application deployments.**

## SOLUTIONS:

- We are going to build 5 servers to complete this project
  - Tools usages are explained below

Instances (5/5) <a href="#">Info</a>		<a href="#">Create instance</a>	<a href="#">Connect</a>	<a href="#">Instance state</a>	<a href="#">Actions</a>	<a href="#">Launch instances</a>
<input type="text"/> Find Instance by attribute or tag (case-sensitive)			<a href="#">Any state</a>			
<a href="#">running</a>	<a href="#">X</a>	<a href="#">Clear filters</a>				
<input checked="" type="checkbox"/>	Name <a href="#">Edit</a>	Instance ID	Instance state	Instance type	Status check	Alarm status
<input checked="" type="checkbox"/>	Build_Server	i-0e522668be45f414e	<span>Running</span> <a href="#">Details</a> <a href="#">Logs</a>	t2.micro	<span>Initializing</span> <a href="#">Details</a>	<a href="#">View alarms</a> <a href="#">+</a>
<input checked="" type="checkbox"/>	Jenkins_Master	i-0eafcc11a7538e7f	<span>Running</span> <a href="#">Details</a> <a href="#">Logs</a>	t2.micro	<span>Initializing</span> <a href="#">Details</a>	<a href="#">View alarms</a> <a href="#">+</a>
<input checked="" type="checkbox"/>	kubernetes_Master	i-0d2ecb5570abc01f1	<span>Running</span> <a href="#">Details</a> <a href="#">Logs</a>	t2.micro	<span>Initializing</span> <a href="#">Details</a>	<a href="#">View alarms</a> <a href="#">+</a>
<input checked="" type="checkbox"/>	Worker_Node2	i-0b0f4c14e2873efb9	<span>Running</span> <a href="#">Details</a> <a href="#">Logs</a>	t2.micro	<span>Initializing</span> <a href="#">Details</a>	<a href="#">View alarms</a> <a href="#">+</a>
<input checked="" type="checkbox"/>	Monitor_Server	i-008ea64a05ccfad93	<span>Running</span> <a href="#">Details</a> <a href="#">Logs</a>	t2.micro	<span>Initializing</span> <a href="#">Details</a>	<a href="#">View alarms</a> <a href="#">+</a>

## **TOOLS USED in each server :**

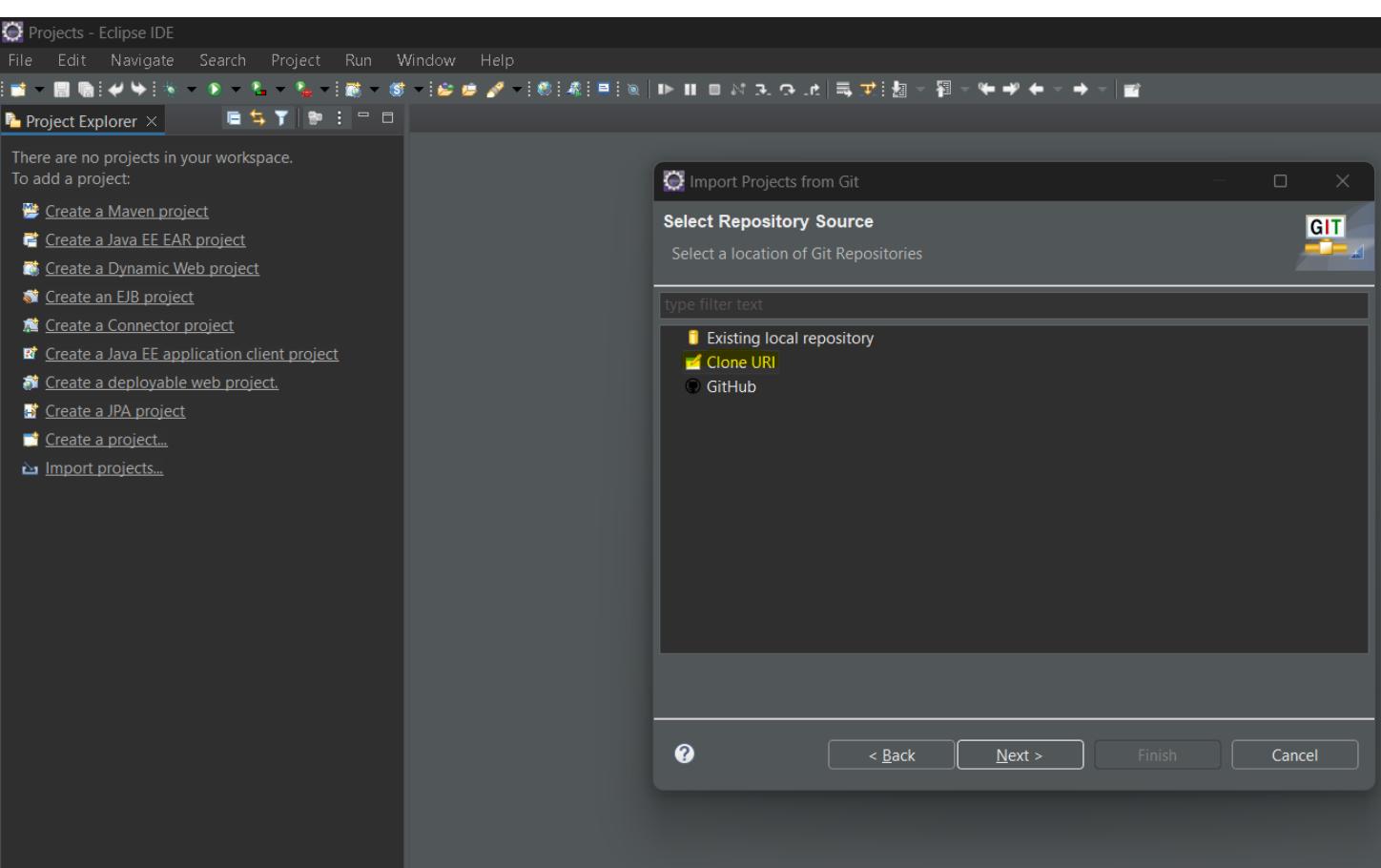
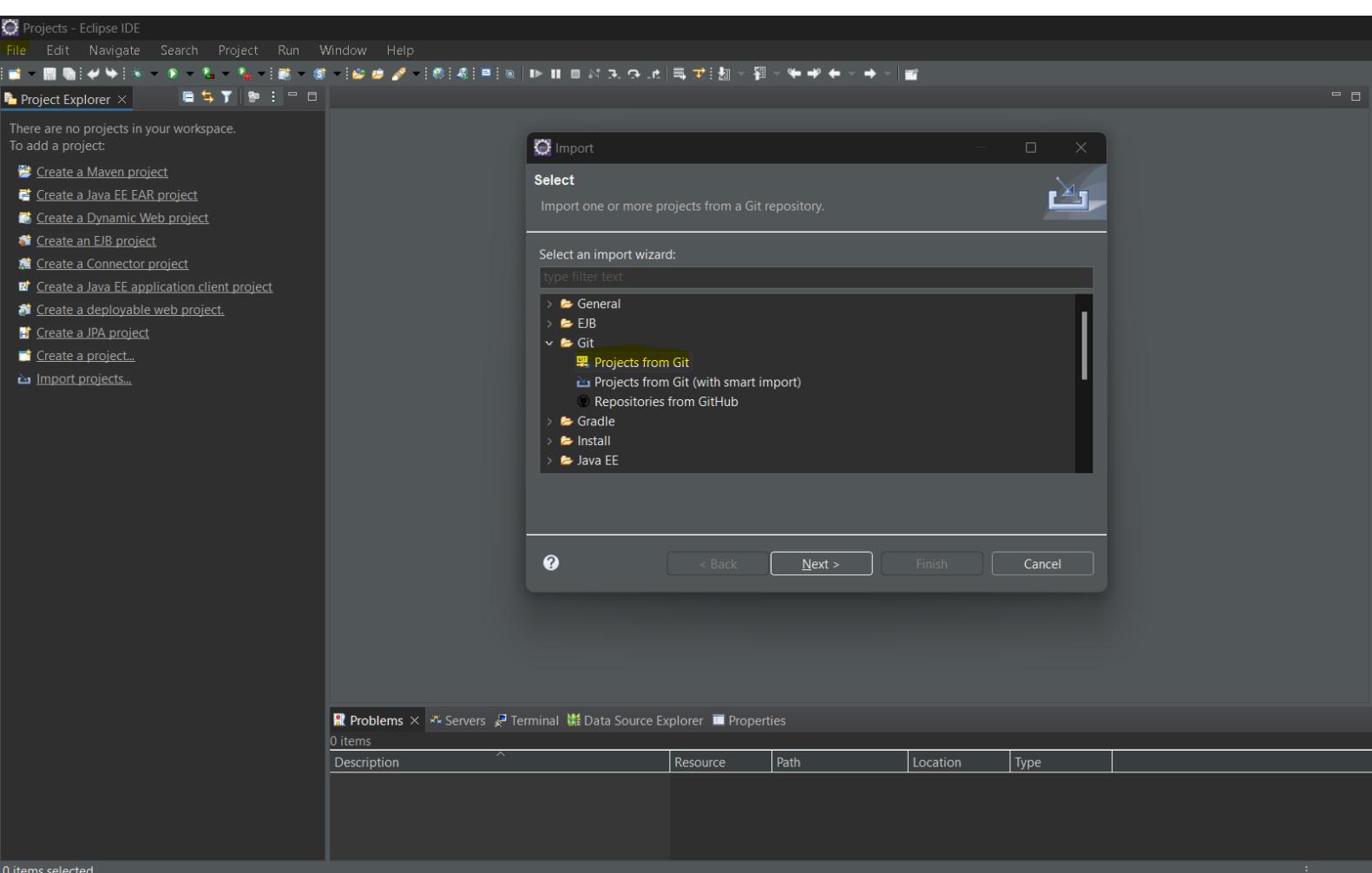
- **Eclipse IDE**
- **Jenkins Master (JDK, Git, Jenkins)**
- **Build Server (JDK,Maven , Git ,Docker)**
- **Kubernetes Master ( Cointainer,Kubectl ,kubeadm ,kubelet)**
  - **Kubernetes WorkerNode**
- **Monitor Server ( Prometheus and Grafana)**

**NOTE : Tool Installation and configuration explained in other document**

## **STEP -1:**

### **Import our source code repository into Eclipse IDE.**

- Open IDE and select import option and select **import from Git** .
- Select option as **clone** url and copy our git url from our GitHub repository .
- And add our **credentials** which is username and password as our github token access which created from developer setting in github.
- Select Branch and click next



Screenshot of a GitHub repository page and an IDE interface.

**GitHub Repository Page:**

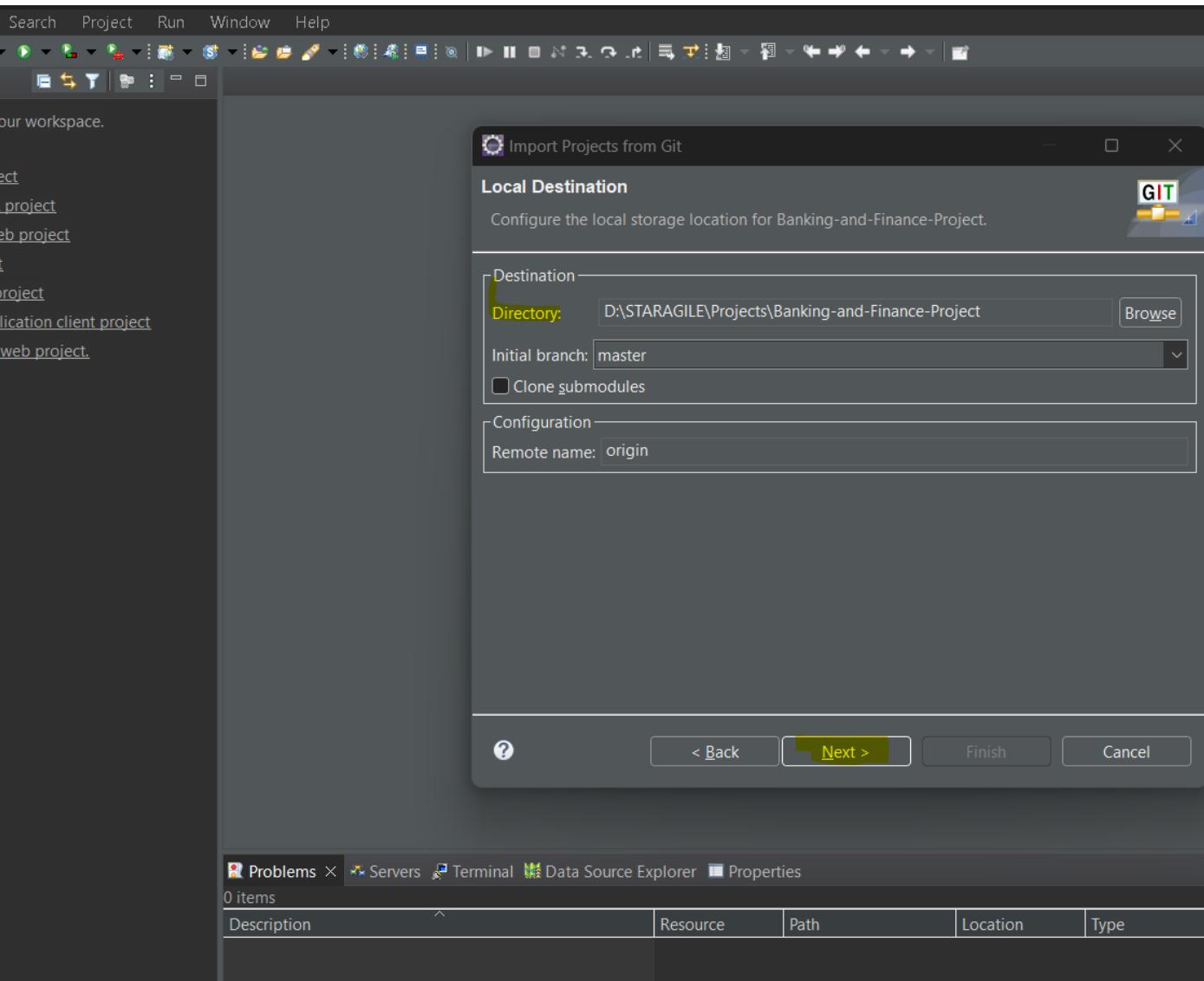
- Repository: Dhakshana1197 / Banking-and-Finance-Project
- Code tab is selected.
- Branch: master (1 branch, 0 tags)
- File list:
  - Dhakshana1197 Update ansible-playbook.yml
  - .mvn/wrapper Banking Project
  - bin Banking Project
  - src Banking Project
  - .DS\_Store Banking Project
  - .gitignore Banking Project
  - Dockerfile Banking Project
  - Jenkinsfile Update Jenkinsfile 28 minutes ago
  - ansible-playbook.yml Update ansible-playbook.yml 13 minutes ago
  - kubernetesdeploy.yaml Update kubernetesdeploy.yaml 30 minutes ago
  - mvnw Banking Project 14 hours ago
  - mvnw.cmd Banking Project 14 hours ago
- Clone options: Local, Codespaces, HTTPS, SSH, GitHub CLI.
- Activity: 1 watching, 0 stars, 0 forks.
- Releases: No releases published. Create a new release.
- Packages: No packages published. Publish your first package.
- Languages: JavaScript 55.3%, CSS 27.1%, HTML 16.5%, Other 0.0%.

**IDE Interface (Import Projects from Git dialog):**

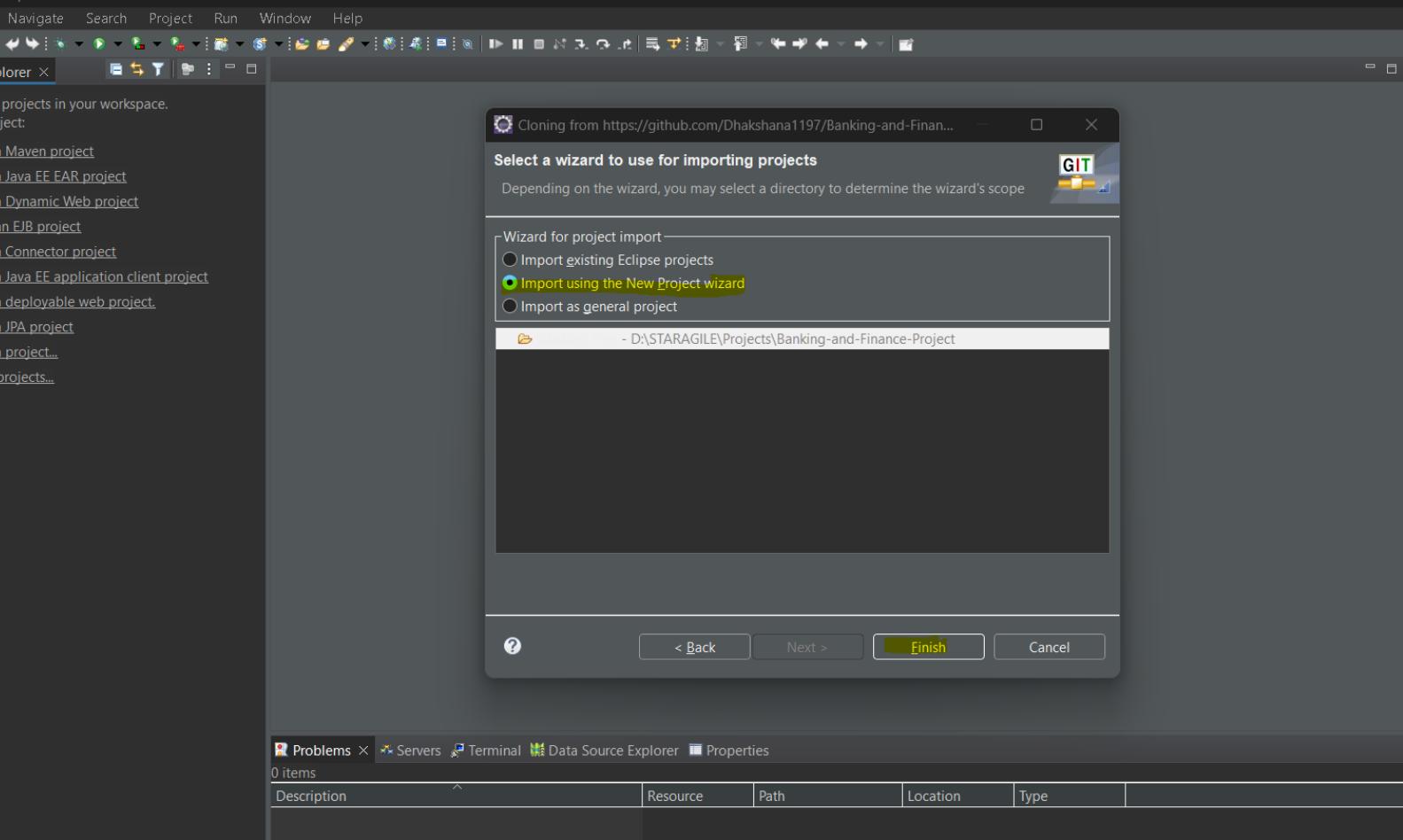
- Source Git Repository dialog open.
- Location:
  - URI: na1197/Banking-and-Finance-Project.git
  - Host: github.com
  - Repository path: /Dhakshana1197/Banking-and-Finance-Project.git
- Connection:
  - Protocol: https
  - Port: (empty)
- Authentication:
  - User: dhakshana1197
  - Password: (redacted)
  - Store in Secure Store
- Buttons: ? (Help), < Back, Next >, Finish, Cancel.

Bottom navigation bar:  
Problems, Servers, Terminal, Data Source Explorer, Properties  
0 items

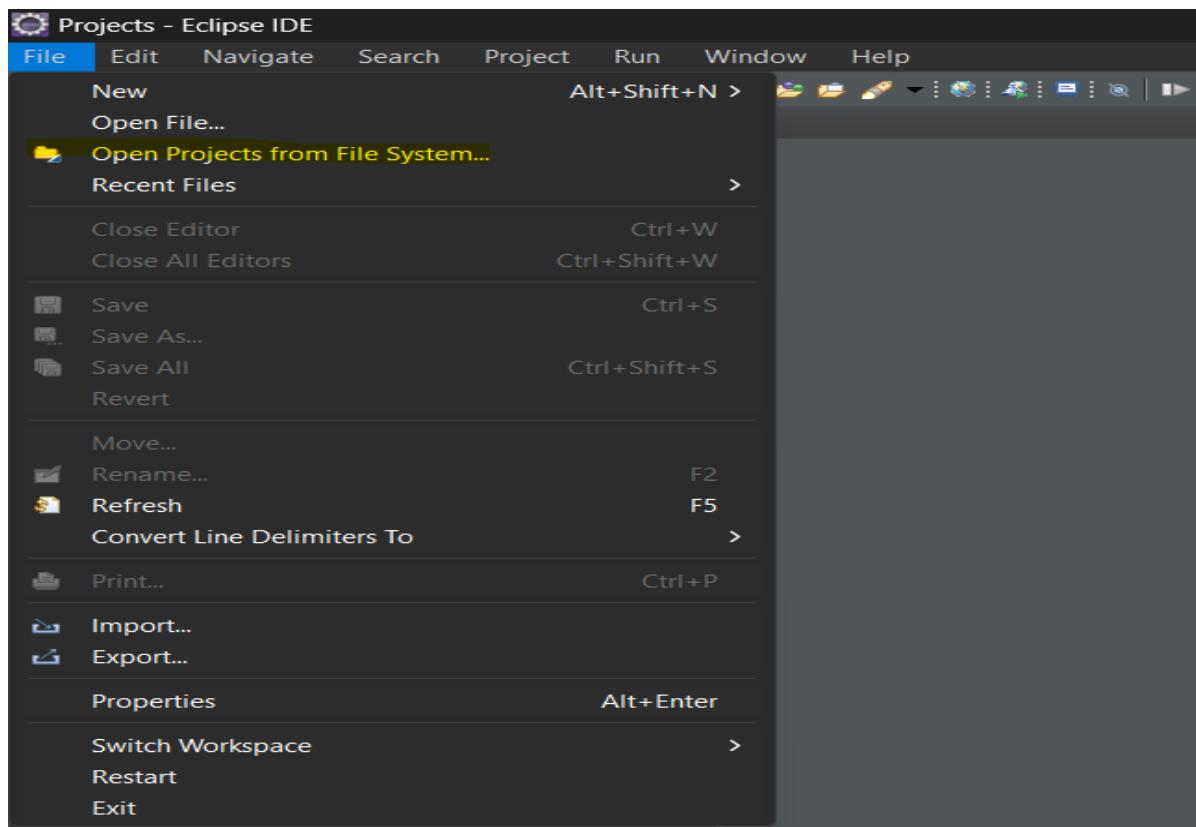
Choose directory and click Next .



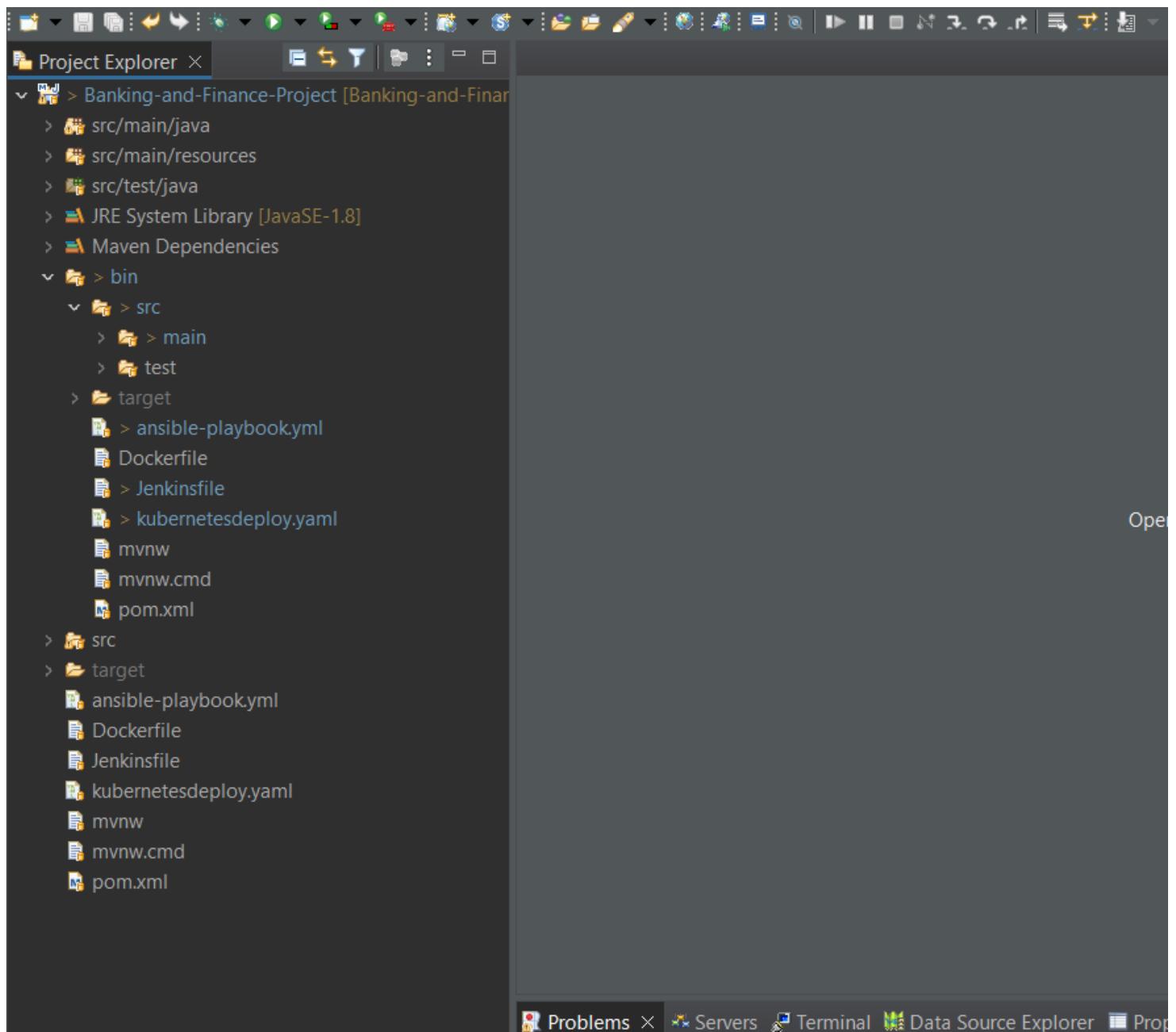
Select as Import as new project and finish.



Select File and click open from file system where we cloned our repository into local.

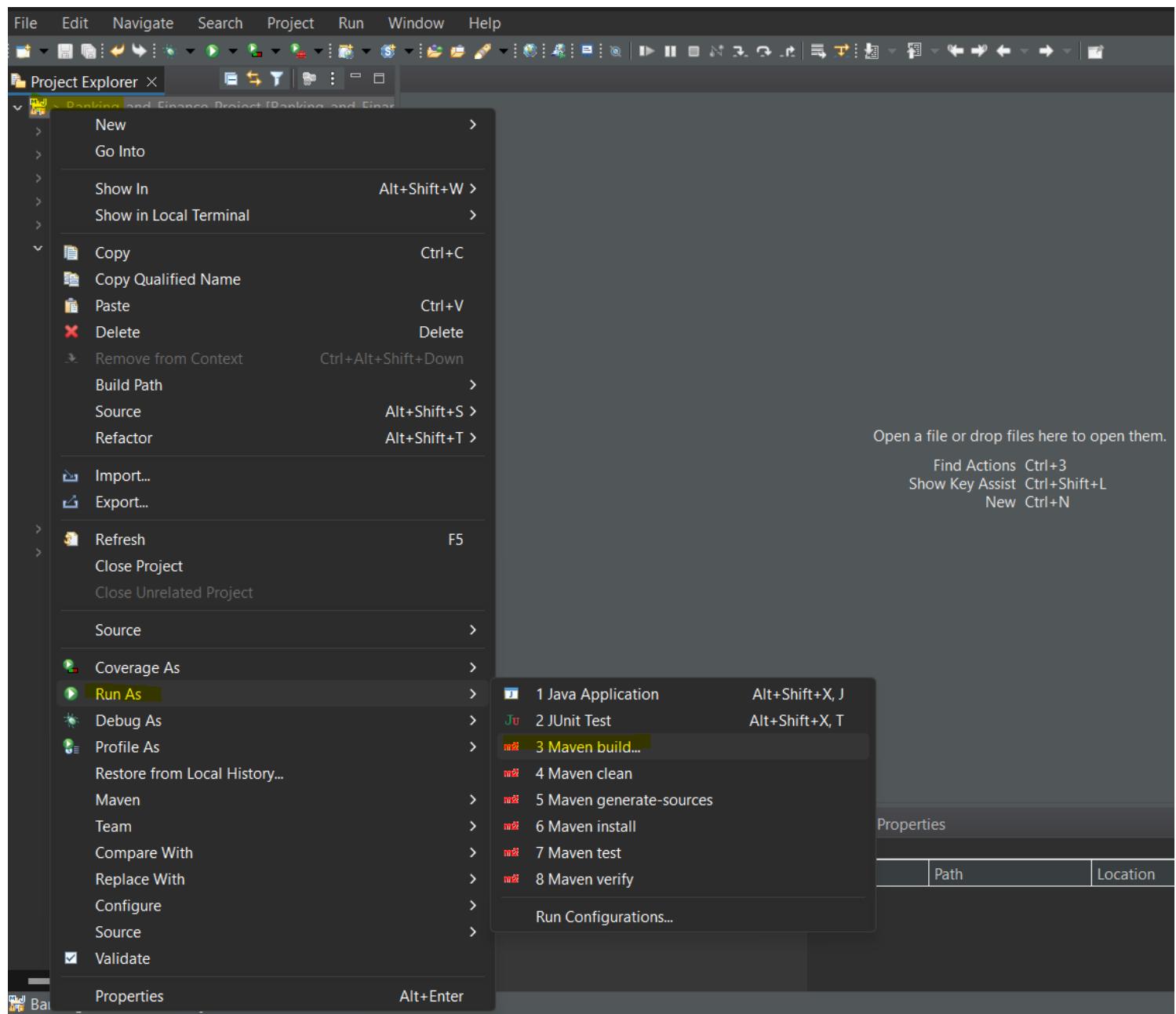


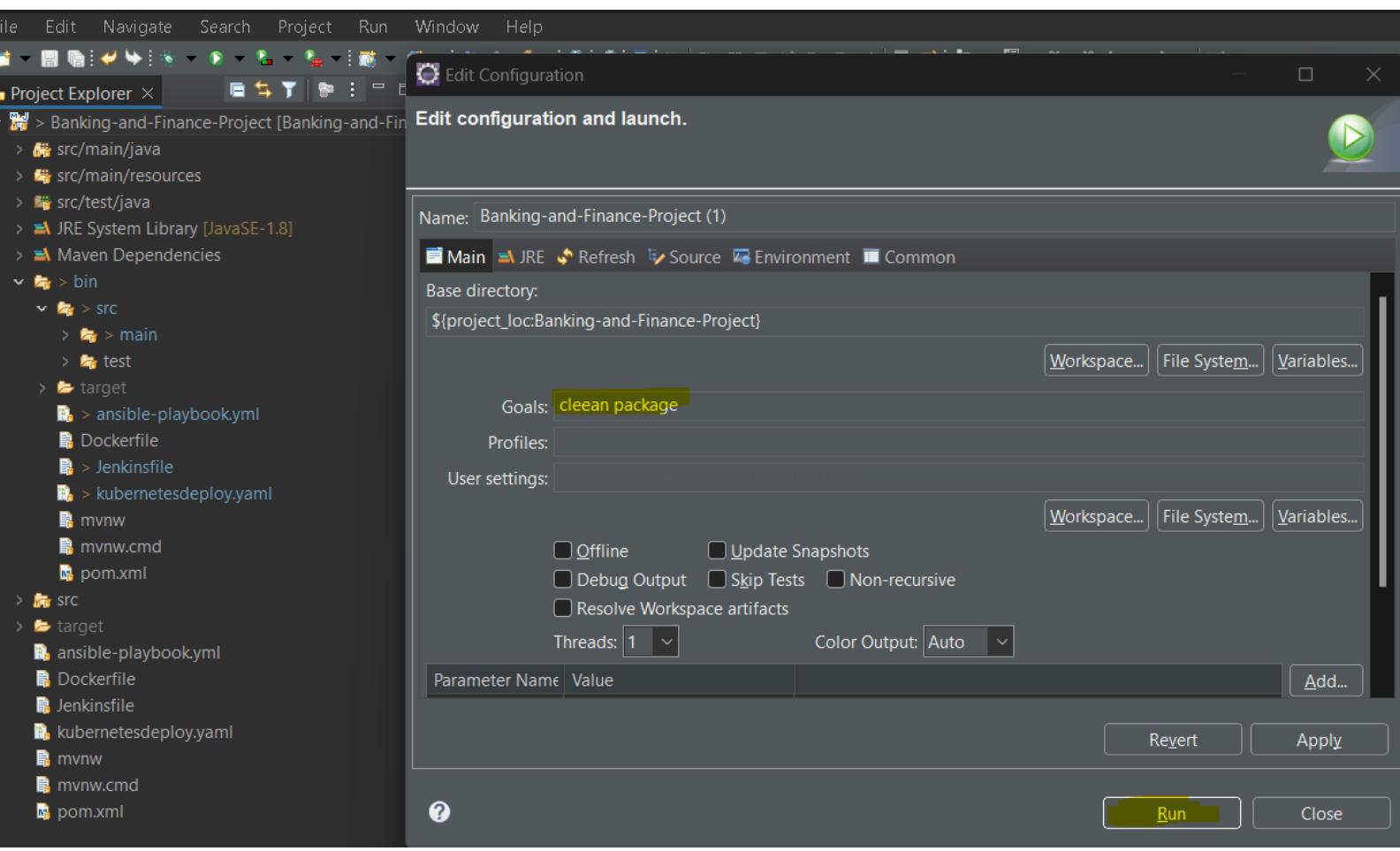
Once imported successfully we have results like below .



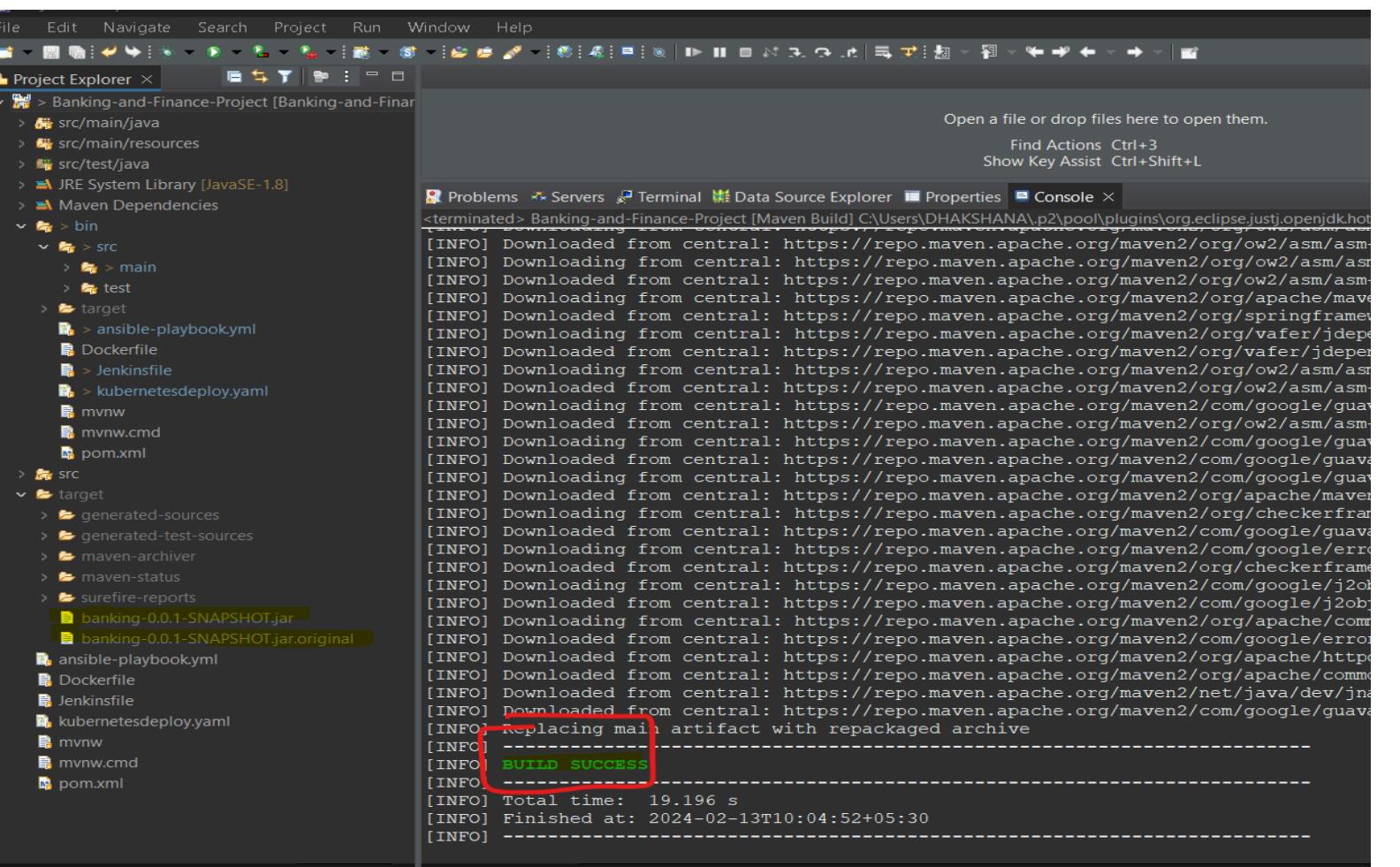
Now we are going to run the project.

- Right click on the project and select run as maven build
- After the write the maven goal to perform.



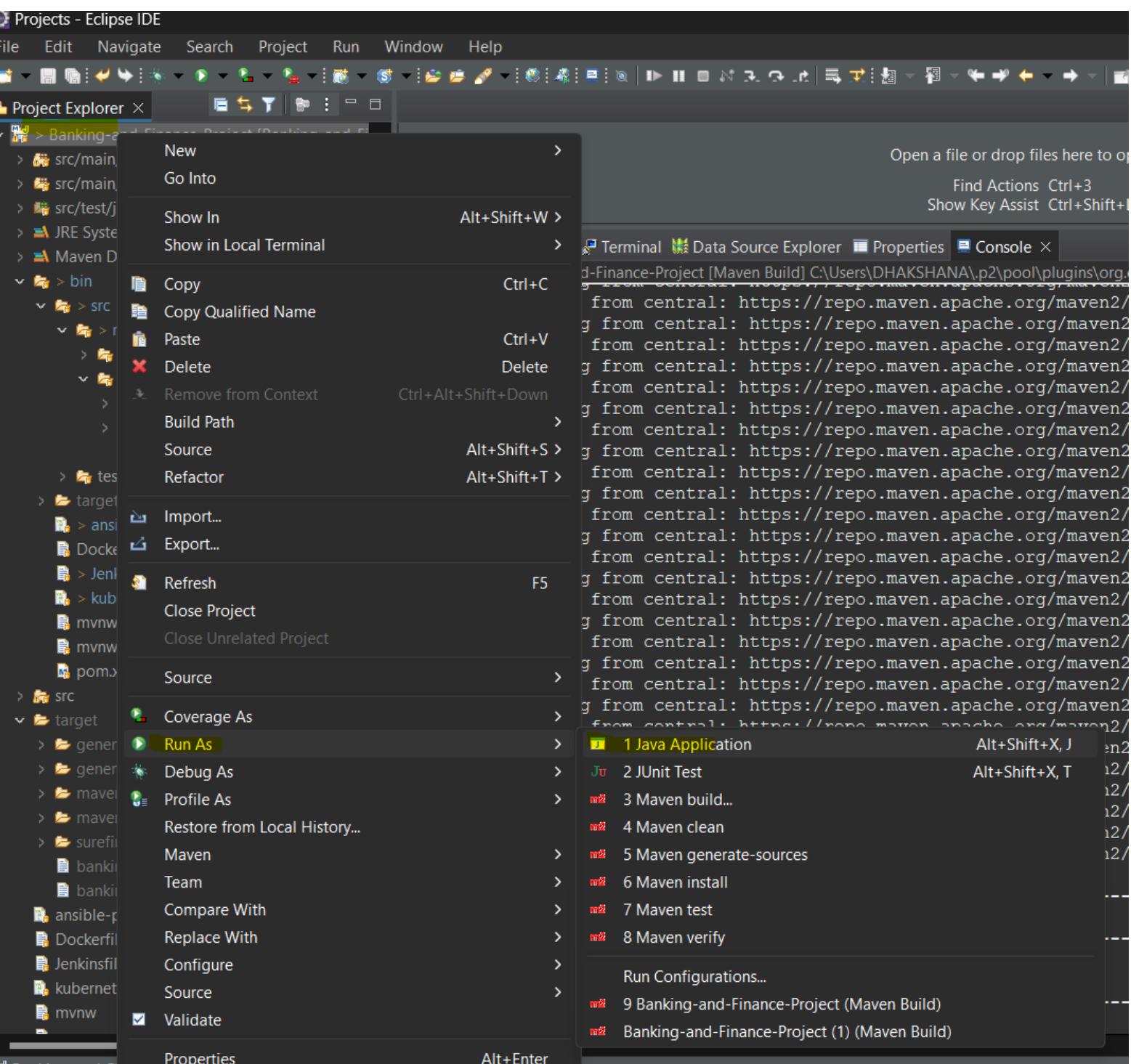


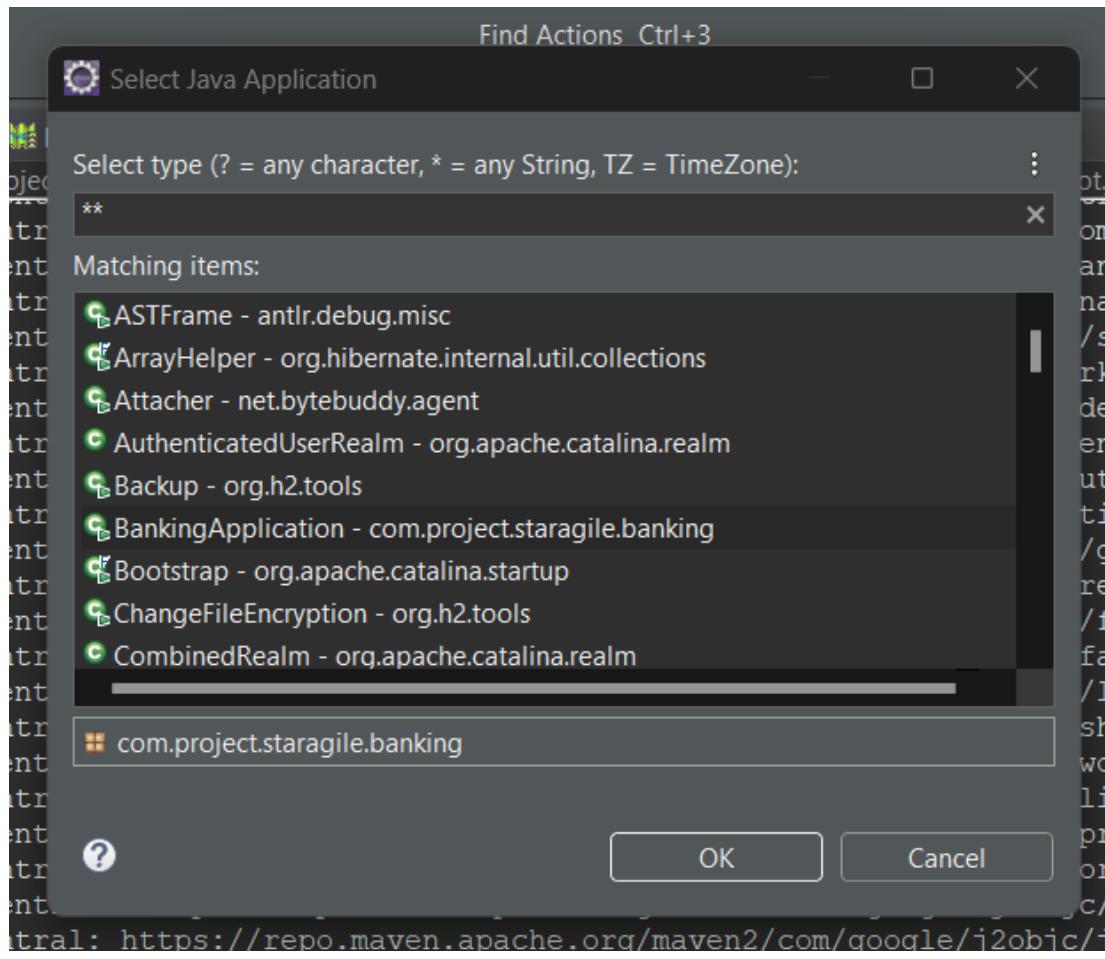
Once build completed we can get output.



# Now we are going to run our java application .

- Right click on our project and select run as java application .





## Once application started we can get output

```

Project Explorer X
Edit Navigate Search Project Run Window Help
src/main/java
src/main/resources
src/test/java
JRE System Library [JavaSE-1.8]
Maven Dependencies
> bin
> src
> main
> java
> resources
> static
> templates
application.properties
> test
target
ansible-playbook.yml
Dockerfile
Jenkinsfile
kubernetesdeploy.yaml
mvnw
mvnw.cmd
pom.xml
src
> target
generated-sources
generated-test-sources
maven-archiver
maven-status
surefire-reports
banking-0.0.1-SNAPSHOT.jar
banking-0.0.1-SNAPSHOT.jar.original
ansible-playbook.yml
Dockerfile
Jenkinsfile
kubernetesdeploy.yaml
mvnw

Problems Servers Terminal Data Source Explorer Properties Console X
BankingApplication [Java Application] [pid: 12272]
Open a file or drop files here to open them.
Find Actions Ctrl+3
Show Key Assist Ctrl+Shift+L

2024-02-13 10:13:01.978 INFO 12272 --- [
2024-02-13 10:13:01.981 INFO 12272 --- [
2024-02-13 10:13:02.839 INFO 12272 --- [
2024-02-13 10:13:02.899 INFO 12272 --- [
2024-02-13 10:13:03.659 INFO 12272 --- [
2024-02-13 10:13:03.675 INFO 12272 --- [
2024-02-13 10:13:03.675 INFO 12272 --- [
2024-02-13 10:13:03.815 INFO 12272 --- [
2024-02-13 10:13:03.815 INFO 12272 --- [
2024-02-13 10:13:04.024 INFO 12272 --- [
2024-02-13 10:13:04.231 INFO 12272 --- [
2024-02-13 10:13:04.293 INFO 12272 --- [
2024-02-13 10:13:04.363 INFO 12272 --- [
2024-02-13 10:13:04.556 INFO 12272 --- [
2024-02-13 10:13:04.696 INFO 12272 --- [
2024-02-13 10:13:05.277 INFO 12272 --- [
2024-02-13 10:13:05.287 INFO 12272 --- [
2024-02-13 10:13:05.654 WARN 12272 --- [
2024-02-13 10:13:05.768 INFO 12272 --- [
2024-02-13 10:13:05.973 INFO 12272 --- [
2024-02-13 10:13:05.983 INFO 12272 --- [
main] c.p.s.banking.BankingApplication      : Starting BankingApplication
main] c.p.s.banking.BankingApplication      : No active profile set, falling back to default profiles: default
main] .s.d.r.c.RepositoryConfigurationDelegate: Bootstrapping Spring Data JPA repository configuration
main] .s.d.r.c.RepositoryConfigurationDelegate: Finished Spring Data repository configuration
main] o.s.b.w.embedded.tomcat.TomcatWebServer: Tomcat initialized with port(s): 8080
main] o.apache.catalina.core.StandardService: Starting service [Tomcat]
main] o.apache.catalina.core.StandardEngine: Starting Servlet engine in [Tomcat]
main] o.a.c.c.[Tomcat].[localhost].[/]: Initializing Spring embedded WebApplicationContext
main] w.s.c.ServletWebServerApplicationContext: Root WebApplicationContext
main] com.zaxxer.hikari.HikariDataSource: HikariPool-1 - Starting
main] com.zaxxer.hikari.HikariDataSource: HikariPool-1 - Start complete
main] o.hibernate.jpa.internal.util.LogHelper: HHH000204: Processing PersistenceUnitInfo
main] o.hibernate.Version: HHH000412: Hibernate Core {5.4.2.Final}
main] o.hibernate.annotations.common.Version: HCANN000001: Hibernate Commons Annotations {5.1.0.Final}
main] org.hibernate.dialect.Dialect: HHH000400: Using dialect
main] o.h.e.t.j.p.i.JtaPlatformInitiator: HHH000490: Using JtaPlatformInitiator
main] j.LocalContainerEntityManagerFactoryBean: HHH000412: EntityManagerFactory created using database connection URL [null]
main] JpaBaseConfiguration$JpaWebConfiguration: HHH000412: EntityManagerFactory created using database connection URL [null]
main] o.s.b.a.w.s.WelcomePageHandlerMapping: spring-jpa.open-in-view
main] o.s.b.w.embedded.tomcat.TomcatWebServer: Adding welcome page: /
main] c.p.s.banking.BankingApplication: Tomcat started on port(s): 8080 (http://localhost:8080)
main] c.p.s.banking.BankingApplication: Started BankingApplication

```

We can access through browser by using **localhost:<portnumber>** which we can defined in application properties.

The screenshot shows the Eclipse IDE interface with the following details:

- Project Explorer:** Shows the project structure:
  - Banking-and-Finance-Project [Banking-and-Fi]
  - src/main/java
  - src/main/resources
  - src/test/java
  - JRE System Library [JavaSE-1.8]
  - Maven Dependencies
  - bin
    - src
      - main
        - java
        - resources
          - static
          - templates
      - test
    - target
      - ansible-playbook.yml
      - Dockerfile
      - Jenkinsfile
      - kubernetesdeploy.yaml
      - mvnw
      - mvnw.cmd
      - pom.xml
- application.properties:** The file contains the following content:

```
server.port=8082
```

A red line highlights the number 2 at the end of the second line.
- Bottom Bar:** Shows the following tabs: Problems, Servers, Terminal, Data Source Explorer, Properties, and Console. The tab 'BankingApplication [Java Application] [pid: 12272]' is selected.

CBS

localhost:8082

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Now we are going to try all of our resources which under resource> static folder .

The screenshot shows the IntelliJ IDEA interface. The left side features the Project Explorer with a tree view of the project structure. A red box highlights the 'static' directory under 'src/main/resources'. The right side shows a terminal window with the following output:

```
\\_ /_____,_____,_____,_____
( ( )\_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____
\_\_)|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____
` |_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____
=====|____|=/_/_____|_____|_____|_____|_____|_____|_____|_____|_____|_____|_____
:: Spring Boot :: (v2.7.4)
```

Below this, the terminal lists several INFO log entries from the BankingApplication:

```
2024-02-13 10:13:01.978 INFO 12272 --- [main] c.p.s.banking.BankingApplication
```

```
2024-02-13 10:13:01.981 INFO 12272 --- [main] c.p.s.banking.BankingApplication
```

```
2024-02-13 10:13:02.839 INFO 12272 --- [main] .s.d.r.c.RepositoryConfiguration
```

```
2024-02-13 10:13:02.899 INFO 12272 --- [main] .s.d.r.c.RepositoryConfiguration
```

```
2024-02-13 10:13:03.659 INFO 12272 --- [main] o.s.b.w.embedded.tomcat.TomcatWe
```

```
2024-02-13 10:13:03.675 INFO 12272 --- [main] o.apache.catalina.core.Standard
```

```
2024-02-13 10:13:03.675 INFO 12272 --- [main] org.apache.catalina.core.Standard
```

```
2024-02-13 10:13:03.815 INFO 12272 --- [main] o.a.c.c.C.[Tomcat].[localhost].[
```

```
2024-02-13 10:13:03.815 INFO 12272 --- [main] w.s.c.ServletWebServerApplication
```

```
2024-02-13 10:13:04.024 INFO 12272 --- [main] com.zaxxer.hikari.HikariDataSour
```

```
2024-02-13 10:13:04.231 INFO 12272 --- [main] com.zaxxer.hikari.HikariDataSour
```

About

localhost:8082/about.html

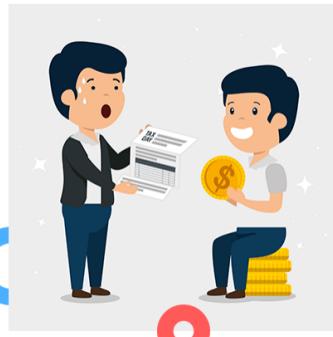
Cial

HOME ABOUT SERVICES TEAM CONTACT US

## SA-BANKING PROJECT DEMO

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it

Read More



Contact

localhost:8082/contact.html

Cial

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## CONTACT US

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Name

Phone Number

Email

Message

SEND



CBS

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Services

localhost:8082/services.html

HOME ABOUT SERVICES TEAM CONTACT US

## WHAT WE DO

It is a long established fact that a reader will be distracted by the readable content of a



### ACCOUNTING

Lorem Ipsum is simply dummy text of the printing and

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### ADVISOR

Lorem Ipsum is simply dummy text of the printing and

[Read More](#)



### INVESTMENT

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### FINANCIAL

Lorem Ipsum is simply dummy text of the printing and

[Read More](#)

localhost:8082/team.html

HOME ABOUT SERVICES TEAM CONTACT US

## OUR TEAM AND EXPERTS

It is a long established fact that a reader will be distracted by the readable content of a

Profile Picture	Name	Action
	Readable	<a href="#">Follow Us</a>
	Content	<a href="#">Follow Us</a>
	Readable	<a href="#">Follow Us</a>
	Content	<a href="#">Follow Us</a>

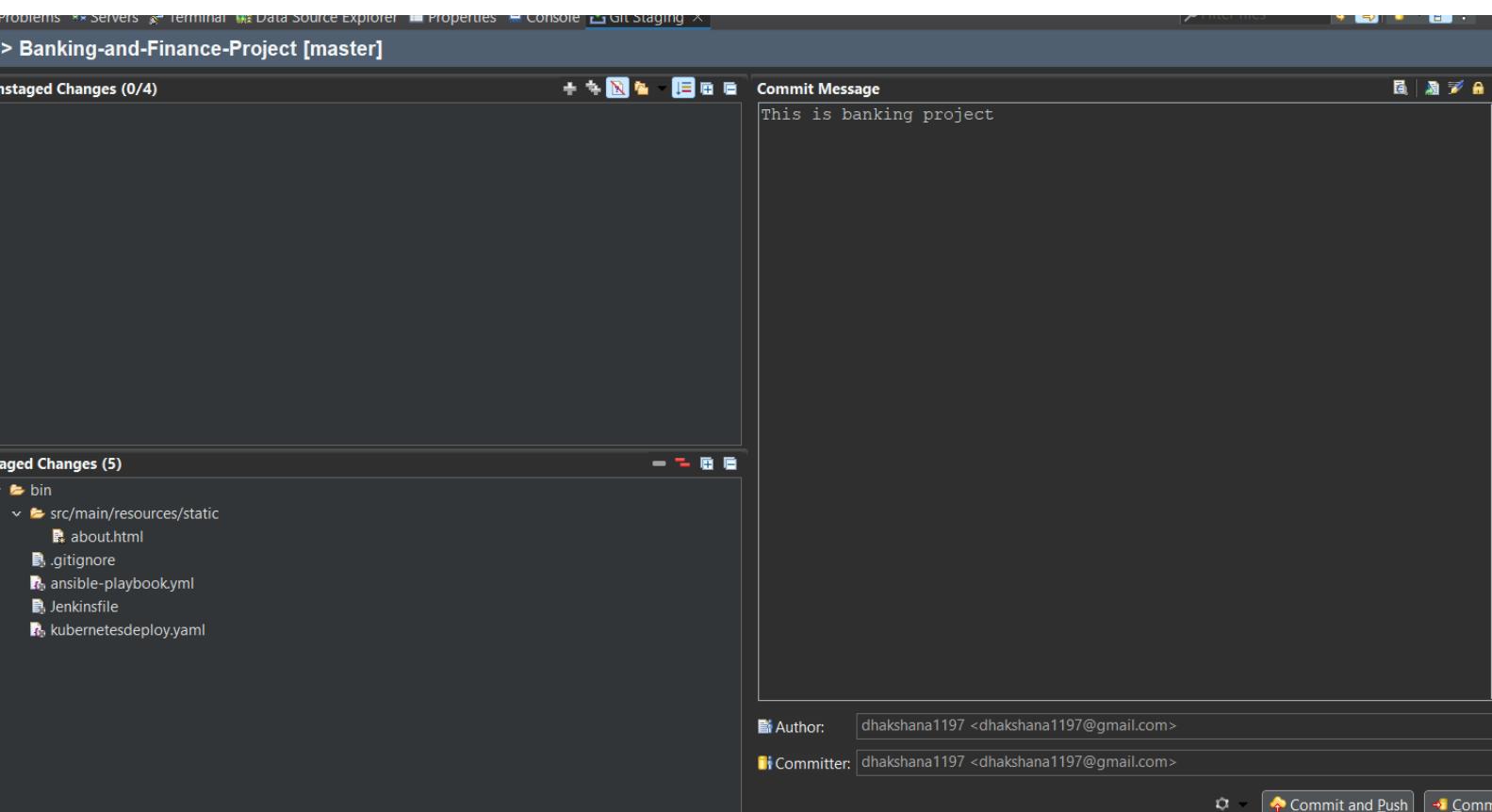
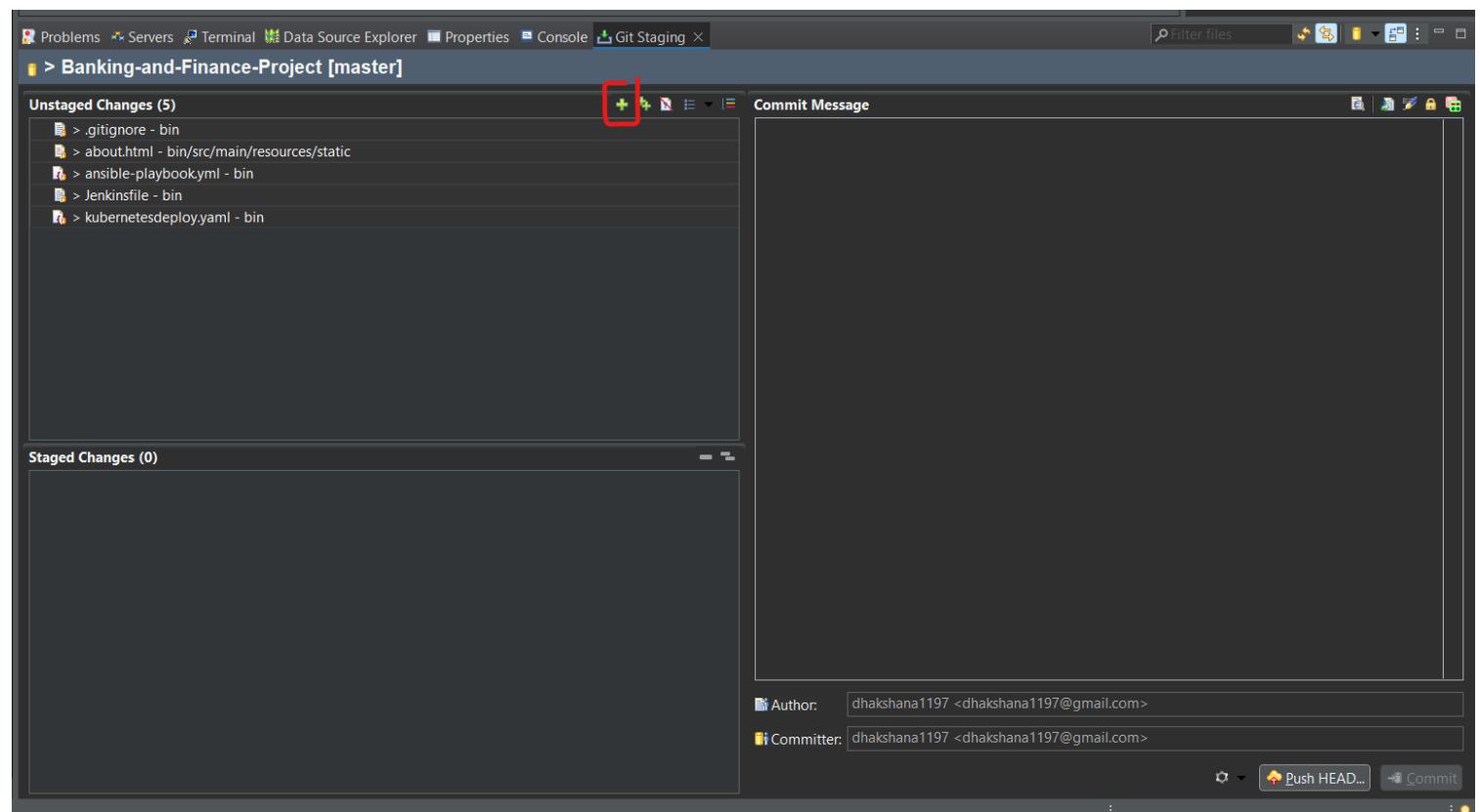
Once Verified successfully we going to commit our project .

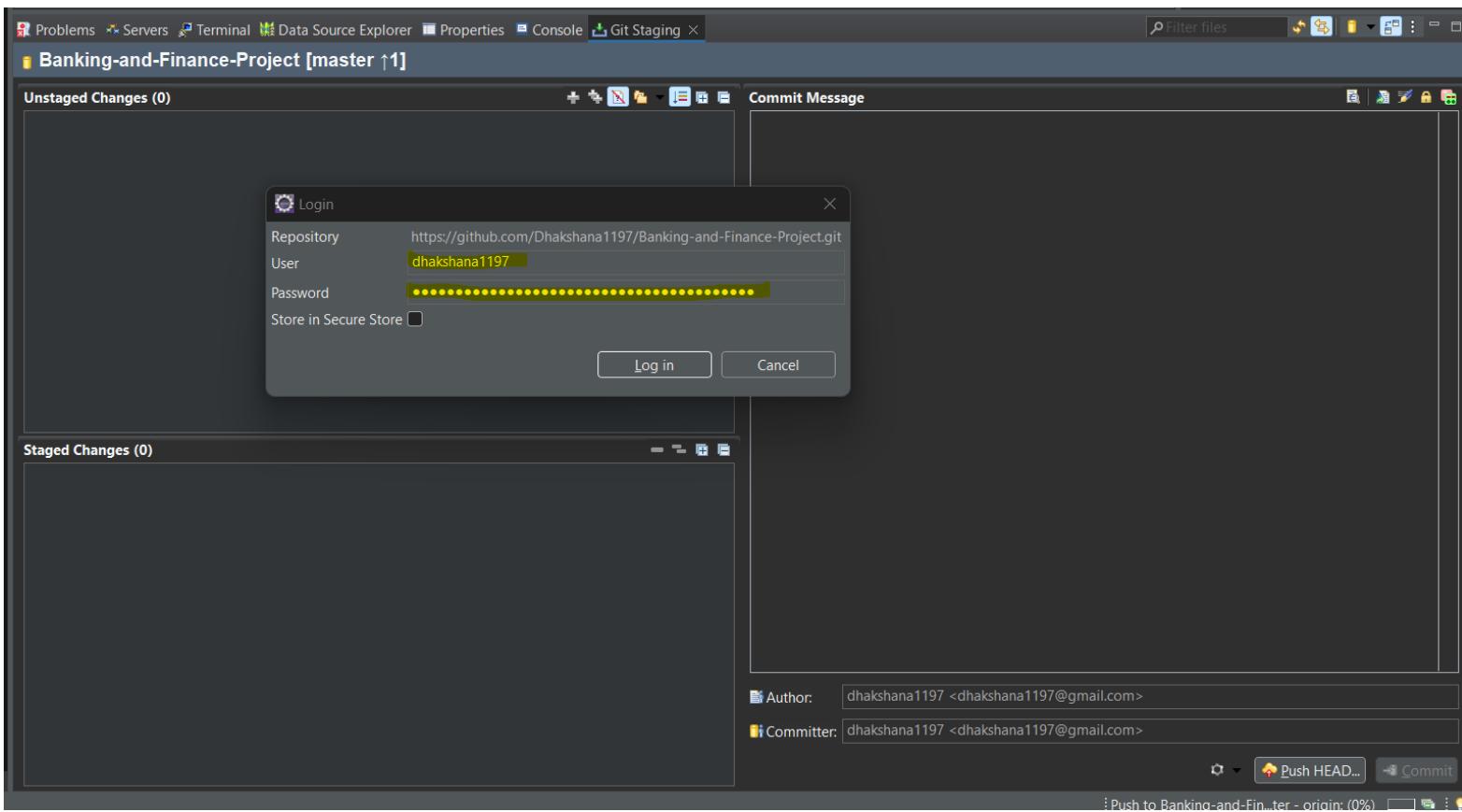
- Select file and click team and select commit
- And stage our changes
- And add our commit messages
- And commit and push to our git repository by providing author details
- Provide git url and password which is token access key

The screenshot shows the Eclipse IDE interface with the Project Explorer view open. A context menu is displayed over a file named 'src/main/java/com/example/Bank.java'. The menu is organized into several sections:

- File**: Includes options like New, Go Into, Show In, Show in Local Terminal, Copy (Ctrl+C), Copy Qualified Name, Paste (Ctrl+V), Delete, Remove from Context (Ctrl+Alt+Shift+Down), Build Path, Source (Alt+Shift+S), Refactor (Alt+Shift+T), Import..., Export..., Refresh (F5), Close Project, Close Unrelated Project, Source, Coverage As, Run As, Debug As, Profile As, Restore from Local History..., Maven, Team, Compare With, Replace With, Configure, Source, Validate (with a checked checkbox), and Properties (Alt+Enter).
- Team**: This section is expanded and includes Commit... (highlighted in yellow), Stashes, Push to origin, Fetch from origin, Fetch GitHub Pull Request..., Push Branch 'master'..., Pull, Pull..., Remote, Switch To, Advanced, Synchronize Workspace, Merge Tool, Merge..., Rebase..., Reset..., Create Patch..., Apply Patch..., Add to Index, Ignore, Show in History, Show in Repositories View, and Disconnect.
- Log**: Shows a log window with the following entries:

```
13:05.287 INFO 12272 --- [nio-8080-1] o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s): 8080 (http) with context path ''
```





Now we are going to create Jenkins Pipeline in Jenkins master server.

- **Login** to Aws Jenkins master instance and login
- And **create** pipeline project
- Create pipeline **scripts** .
- Once pipeline project created , run the project by using option **build now**
- Verify the console output .
- Verify the all process completed successfully (build images in docker hub , Kubernetes deployment) .
- Deployed application verify through Browser.

Dashboard > All >

## Enter an item name

Banking\_Project  
» Required field

**Freestyle project**  
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

**Pipeline**  
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

**Multi-configuration project**  
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

**Folder**  
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

**OK**    **Branch Pipeline**

Banking\_Project Config [Jenkins] +

Dashboard > Banking\_Project > Configuration

## Configure

### Pipeline

Definition

Pipeline script

Script ?  
1

try sample Pipeline... ▾

Use Groovy Sandbox ?

Pipeline Syntax

Save Apply

Banking\_Project Configuration [jenkins] 13.201.38.161:8080/job/Banking\_Project/configure

Dashboard > Banking\_Project > Configuration

## Configure Pipeline

Definition

Pipeline script

```
Script ?
```

```
1 pipeline {
2     agent { label 'Slave1' }
3
4     tools {
5         // Install the Maven version configured as "M3" and add it to the path.
6         maven "maven-3.6.3"
7     }
8
9     environment {
10        DOCKERHUB_CREDENTIALS=credentials('dockerloginid')
11    }
12
13    stages {
14        stage('SCM Checkout') {
15            steps {
16                // Get some code from a GitHub repository
17                git 'https://github.com/Dhakshana1197/Banking-and-Finance-Project.git'
18                //https://github.com/Dhakshana1197/Banking-and-Finance-Project.git'
19            }
20        }
21        stage('Maven Build') {
22            steps {
23                // Run Maven on a Unix agent.
24                sh "mvn -Dmaven.test.failure.ignore=true clean package"
25            }
26        }
27        stage("Docker build"){
28            steps {
29                sh 'docker version'
30                sh 'docker build -t dhakshana1197/bankapp-app:${BUILD_NUMBER} .'
31                sh 'docker image list'
32                sh 'docker tag dhakshana1197/bankapp-app:${BUILD_NUMBER} dhakshana1197/bankapp-app:latest'
33            }
34        }
35        stage('Login2DockerHub') {
36            steps {
37                sh 'echo $DOCKERHUB_CREDENTIALS_PSW | docker login -u $DOCKERHUB_CREDENTIALS_USR --password-stdin'
38            }
39        }
40        stage('Push2DockerHub') {
41            steps {
42                sh "docker push dhakshana1197/bankapp-app:latest"
43            }
44        }
45    }
46
47    stage('Deploy to Kubernetes Dev Environment') {
48        steps {
49            sshPublisher(publishers: [sshPublisherDesc(configName: 'Kubernetes', transfers: [sshTransfer(cleanRemote: false, excludes: '', execComm:
50
51
```

try sample Pipeline... ▾

Save Apply

13.201.38.161:8080/job/Banking\_Project/configure

Dashboard > Banking\_Project > Configuration

## Configure Pipeline

Definition

Pipeline script

```
Script ?
```

```
stage('Maven Build') {
    steps {
        // Run Maven on a Unix agent.
        sh "mvn -Dmaven.test.failure.ignore=true clean package"
    }
}
stage("Docker build"){
    steps {
        sh 'docker version'
        sh 'docker build -t dhakshana1197/bankapp-app:${BUILD_NUMBER} .'
        sh 'docker image list'
        sh 'docker tag dhakshana1197/bankapp-app:${BUILD_NUMBER} dhakshana1197/bankapp-app:latest'
    }
}
stage('Login2DockerHub') {
    steps {
        sh 'echo $DOCKERHUB_CREDENTIALS_PSW | docker login -u $DOCKERHUB_CREDENTIALS_USR --password-stdin'
    }
}
stage('Push2DockerHub') {
    steps {
        sh "docker push dhakshana1197/bankapp-app:latest"
    }
}
stage('Deploy to Kubernetes Dev Environment') {
    steps {
        sshPublisher(publishers: [sshPublisherDesc(configName: 'Kubernetes', transfers: [sshTransfer(cleanRemote: false, excludes: '', execComm:

```

try sample Pipeline... ▾

Save Apply

Banking\_Project [Jenkins] +

13.201.38.161:8080/job/Banking\_Project/

# Jenkins

Dashboard > Banking\_Project >

Status Changes Build Now (highlighted with a red box) Configure Delete Pipeline Full Stage View Rename Pipeline Syntax

## Banking\_Project

### Stage View

No data available. This Pipeline has not yet run.

### Permalinks

Build History trend ▾

No builds

Atom feed for all Atom feed for failures

[Pipeline] tool  
[Pipeline] envVarsForTool  
[Pipeline] withEnv  
[Pipeline] {  
[Pipeline] sh  
> git rev-parse --resolve-git-dir /home/devops/workspace/Banking\_Project/.git # timeout=10  
> git config remote.origin.url https://github.com/Dhakshana1197/Banking-and-Finance-Project.git # timeout=10  
Fetching upstream changes from https://github.com/Dhakshana1197/Banking-and-Finance-Project.git  
> git --version # timeout=10  
> git --version # 'git version 2.25.1'  
> git fetch --tags --force --progress -- https://github.com/Dhakshana1197/Banking-and-Finance-Project.git +refs/heads/\*:refs/remotes/origin/\* # timeout=10  
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10  
> git config core.sparsecheckout # timeout=10  
> git checkout -f 9ac2294a53e89a158bdf984433f716852ef107d0 # timeout=10  
> git branch -a -v --no-abbrev # timeout=10  
> git branch -D master # timeout=10  
> git checkout -b master 9ac2294a53e89a158bdf984433f716852ef107d0 # timeout=10  
+ mvn -Dmaven.test.failure.ignore=true clean package  
[[1;34mINFO[m Scanning for projects...  
[[1;34mINFO[m  
[[1;34mINFO[m [1m-----< [0;36mcom.project.staragile:banking[0;1m >-----[m  
[[1;34mINFO[m [1mBuilding banking 0.0.1-SNAPSHOT[m  
[[1;34mINFO[m [1m-----[ jar ]-----[m  
[[1;34mINFO[m  
[[1;34mINFO[m [1m--- [0;32mmaven-clean-plugin:3.2.0:clean[m [1m(default-clean)[m @ [36mbanking[0;1m ---[m  
[[1;34mINFO[m Deleting /home/devops/workspace/Banking\_Project/target  
[[1;34mINFO[m  
[[1;34mINFO[m [1m--- [0;32mmaven-resources-plugin:3.2.0:resources[m [1m(default-resources)[m @ [36mbanking[0;1m ---[m  
[[1;34mINFO[m Using 'UTF-8' encoding to copy filtered resources.  
[[1;34mINFO[m Using 'UTF-8' encoding to copy filtered properties files.

```

Affected argument(s) used the following variable(s): [DOCKERHUB_CREDENTIALS_USR]
See https://jenkins.io/redirect/groovy-string-interpolation for details.

+ docker tag *****/bankapp-app:8 *****/bankapp-app:latest
[Pipeline]
[Pipeline] // withEnv
[Pipeline]
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Login2DockerHub)
[Pipeline] tool
[Pipeline] envVarsForTool
[Pipeline] withEnv
[Pipeline] {
[Pipeline] sh
+ docker login -u **** --password-stdin
+ echo ****
WARNING! Your password will be stored unencrypted in /home/devops/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

```

Login Succeeded

Pipeline 1

The screenshot shows the Docker Hub interface. In the top navigation bar, 'Repositories' is selected. Below it, a search bar shows 'dhakshana1197' and a dropdown menu. A search bar also contains 'Search by repository name'. On the right, there's a 'Create repository' button. The main content area displays a repository card for 'dhakshana1197 / bankapp-app'. The card indicates it contains 1 image, was last pushed 3 minutes ago, and is public. It also shows 'Inactive' status and a star count of 0.

The screenshot shows the Jenkins Pipeline interface for the 'Banking\_Project' job. The left sidebar includes links for Status, Changes, Build Now, Configure, Delete Pipeline, Full Stage View, Rename, Pipeline Syntax, and Build History. The Build History section shows a recent build (#8) from Feb 13 at 12:19 with 'No Changes'. The main content area features a 'Stage View' table with columns for Declarative: Tool Install, SCM Checkout, Maven Build, Docker build, Login2DockerHub, Push2DockerHub, and Deploy to Kubernetes Dev Environment. Each stage's duration is listed below its respective column header. Below the table, a 'Permalinks' section provides links for the build and failure atom feeds.

Declarative: Tool Install	SCM Checkout	Maven Build	Docker build	Login2DockerHub	Push2DockerHub	Deploy to Kubernetes Dev Environment
88ms	950ms	24s	3s	2s	15s	3s

## CHECK IN KUBERNETES MASTER .

```
Controlled By: ReplicaSet/bankapp-deploy-57f9b7666c
Containers:
bankapp-container:
  Container ID: containerd://bf974ce2d61e3ca4a4ee73a77b68bc6488ac7813bde44f53652d17dee1836cf7
  Image: dhakshana1197/bankapp-app
  Image ID: docker.io/dhakshana1197/bankapp-app@sha256:05f122512dd3a1c4aed819405f75233ae6523d1e86765ce9ae44389603605f55
  Port: 8082/TCP
  Host Port: 0/TCP
  State: Running
    Started: Tue, 13 Feb 2024 07:20:13 +0000
  Ready: True
  Restart Count: 0
  Environment: <none>
  Mounts:
    /var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-dt755 (ro)
Conditions:
  Type        Status
  Initialized  True
  Ready       True
  ContainersReady  True
  PodScheduled  True
Volumes:
  kube-api-access-dt755:
    Type:      Projected (a volume that contains injected data from multiple sources)
    TokenExpirationSeconds: 3607
    ConfigMapName:   kube-root-ca.crt
    ConfigMapOptional: <nil>
    DownwardAPI:     true
    QoS Class:      BestEffort
    Node-Selectors: <none>
    Tolerations:   node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
                  node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events:
  Type      Reason     Age   From           Message
  ----      -----     --   --            --
  Normal    Scheduled  4m10s default-scheduler  Successfully assigned default/bankapp-deploy-57f9b7666c-wcdpn to worker-node
  Normal    Pulling    4m9s  kubelet        Pulling image "dhakshana1197/bankapp-app"
  Normal    Pulled     3m47s kubelet        Successfully pulled image "dhakshana1197/bankapp-app" in 21.503s (21.505s including waiting)
  Normal    Created    3m47s kubelet        Created container bankapp-container
  Normal    Started    3m47s kubelet        Started container bankapp-container
```

KUBECTL GET SVC -o WIDE to check node port number

```
WORKER-Node2 ~$ kubectl get svc -o wide
devopsadmin@kmaster-node:~$ kubectl get svc -o wide
NAME          TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)        AGE      SELECTOR
bankapp-np-service  NodePort  10.102.216.164  <none>        8082:31002/TCP  39m    app=bankapp-app
```

ACCESS THROUGH BROWSER USING  
<public\_ip>:<Node\_PORT>

Banking\_Project [Jenkins] × CBS × +

13.232.193.103:31002

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Banking\_Project [Jenkins] × About × +

13.232.193.103:31002/about.html

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## SA-BANKING PROJECT DEMO

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it

[Read More](#)





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Message

SEND



## OUR TEAM AND EXPERTS

It is a long established fact that a reader will be distracted by the  
readable content of a



Readable



Content



Readable



Content

Follow Us

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Follow Us

**NOW WE ARE GOING TO MONITOR SERVER TO MONITOR OUR APPLICATION.**

**<MONITOR\_SERVER\_ip>:9090**

The screenshot shows the Prometheus web interface with the URL `13.126.134.82:9090/graph?g0.expr=up&g0.tab=1&g0.stacked=0&g0.show_exemplars=0&g0.range_input=1h`. The interface includes a navigation bar with tabs for Banking\_Project [Jenkins], CBS, Prometheus, Alerts, Graph, Status, and Help. Below the navigation bar are several configuration checkboxes: Use local time (unchecked), Enable query history (unchecked), Enable autocomplete (checked), Enable highlighting (checked), and Enable linter (checked). The main area features a search bar with the query `up` and a button to execute the query. The results are displayed in a table tab, showing two rows of data:

Series	Value
<code>up{instance="172.31.45.114:9100",job="prometheus"}</code>	1
<code>up{instance="localhost:9090",job="prometheus"}</code>	1

Below the table, there is a link to "Remove Panel" and a blue "Add Panel" button.

**LOGIN TO GRAFFANA AND DATASOURCE AS PROMETHEUS AND ADD URL AND CREATE DASHBOARD**

**<MONITOR\_SERVER\_IP>:3000**

Banking\_Project [Jenkins] X CBS X Prometheus Time Series Collector X prometheus-2 - Data sources +

13.126.134.82:3000/connections/datasources/edit/f92f43e7-75e2-423e-95dc-f3e138449f41

Search or jump to... ctrl+k

Home > Connections > Data sources > prometheus-2

## Connections

Add new connection

## Data sources

### prometheus-2

Type: Prometheus

Alerting Supported

Explore data Build a dashboard

Settings Dashboards

Name: prometheus-2 Default Enabled

Before you can use the Prometheus data source, you must configure it below or in the config file. For detailed instructions, [view the documentation](#).

Fields marked with \* are required

#### Connection

Prometheus server URL\*: http://13.126.134.82:9090

#### Authentication

Banking\_Project [Jenkins] X CBS X Prometheus Time Series Collector X prometheus-2 - Data sources +

13.126.134.82:3000/connections/datasources/edit/f92f43e7-75e2-423e-95dc-f3e138449f41

Search or jump to... ctrl+k

Home > Connections > Data sources > prometheus-2

## Connections

Add new connection

## Data sources

### prometheus-2

Cache level: Low

Incremental querying (beta): Enabled

Disable recording rules (beta): Enabled

Other

Custom query parameters: Example: max\_source\_resolution=5m&timeout

HTTP method: POST

Exemplars

+ Add

✓ Successfully queried the Prometheus API.

Next, you can start to visualize data by [building a dashboard](#), or by querying data in the [Explore view](#).

Delete Save & test

