

School of Computer Science

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
DEHRADUN, UTTARAKHAND**



Continuous Integration and Continuous Delivery Lab

**Lab File
(2023-2024)**

for

5th Semester

Submitted To:

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Submitted By:

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B. Tech. CSE [DevOps]

500094093

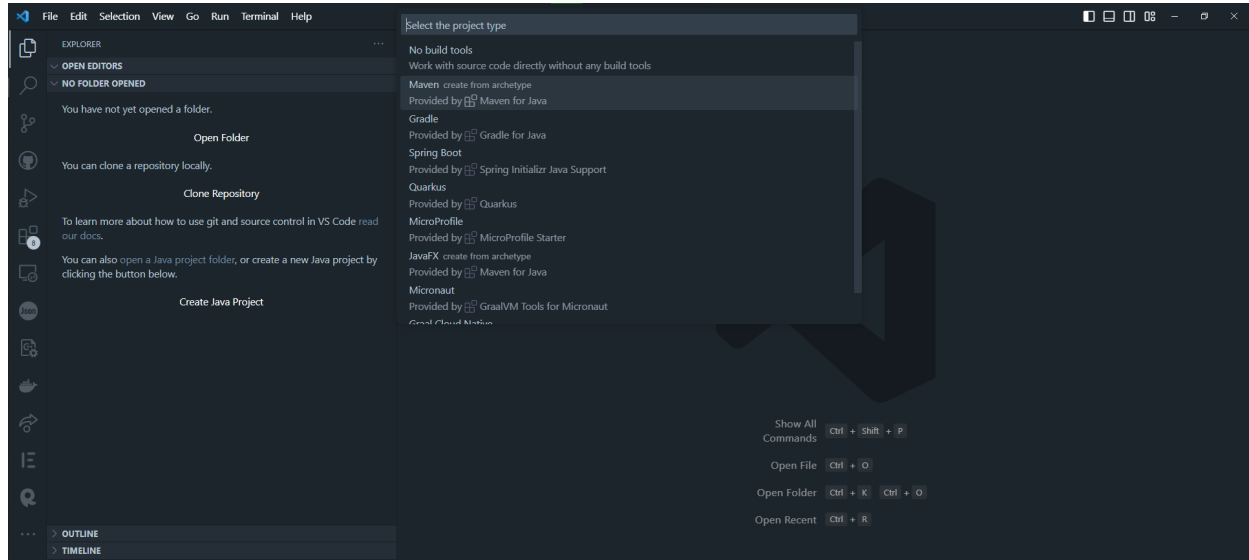
R2142210577

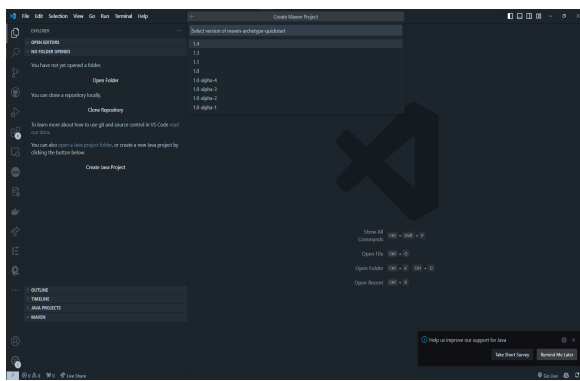
B2- Devops (Non-Hons)

LAB EXERCISE - 1

Aim:

1] Create a Maven Project in eclipse.





```
quickstart-1.3.jar (7.0 KB at 20 KB/S)
[INFO] Using property: groupId = cicd.lab1
[INFO] Using property: artifactId = demo
Define value for property 'version' 1.0-SNAPSHOT: : 0.01
[INFO] Using property: package = cicd.lab1
Confirm properties configuration:
groupId: cicd.lab1
artifactId: demo
version: 0.01
package: cicd.lab1
Y: : 
```

```
src > main > java > cicd > lab1 > J App.java > App
1 package cicd.lab1;
2
3 import java.util.Scanner;
4
5 public class App {
6     public static void main(String[] args) {
7         Scanner scanner = new Scanner(System.in);
8         double num1, num2;
9         char operator;
10
11         System.out.print("Enter the first number: ");
12         num1 = scanner.nextDouble();
13
14         System.out.print("Enter an operator (+ or -): ");
15         operator = scanner.next().charAt(index:0);
16
17         System.out.print("Enter the second number: ");
18         num2 = scanner.nextDouble();
19
20         double result;
21
22         switch (operator) {
23             case '+':
24                 result = num1 + num2;
```

```
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS D:\sem 5 devops\CICD\R2142210577_CICD_LabExperiments\Experiment 1\demo> & 'C:\Program Files\Java\jdk-17\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'D:\sem 5 devops\CICD\R2142210577_CICD_LabExperiments\Experiment 1\demo\target\classes' 'cicd.lab1.App'
Enter the first number: 24
Enter an operator (+ or -): +
Enter the second number: 23
Result: 24.0 + 23.0 = 47.0
PS D:\sem 5 devops\CICD\R2142210577_CICD_LabExperiments\Experiment 1\demo> & 'C:\Program Files\Java\jdk-17\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'D:\sem 5 devops\CICD\R2142210577_CICD_LabExperiments\Experiment 1\demo\target\classes' 'cicd.lab1.App'
Enter the first number: 23
Enter an operator (+ or -): -
Enter the second number: 25
Result: 23.0 - 25.0 = -2.0
PS D:\sem 5 devops\CICD\R2142210577_CICD_LabExperiments\Experiment 1\demo>
```

```

<groupId>cicd.lab1</groupId>
<artifactId>demo</artifactId>
<version>0.01</version>

<name>demo</name>
<!-- FIXME change it to the project's website -->
<url>http://www.example.com</url>

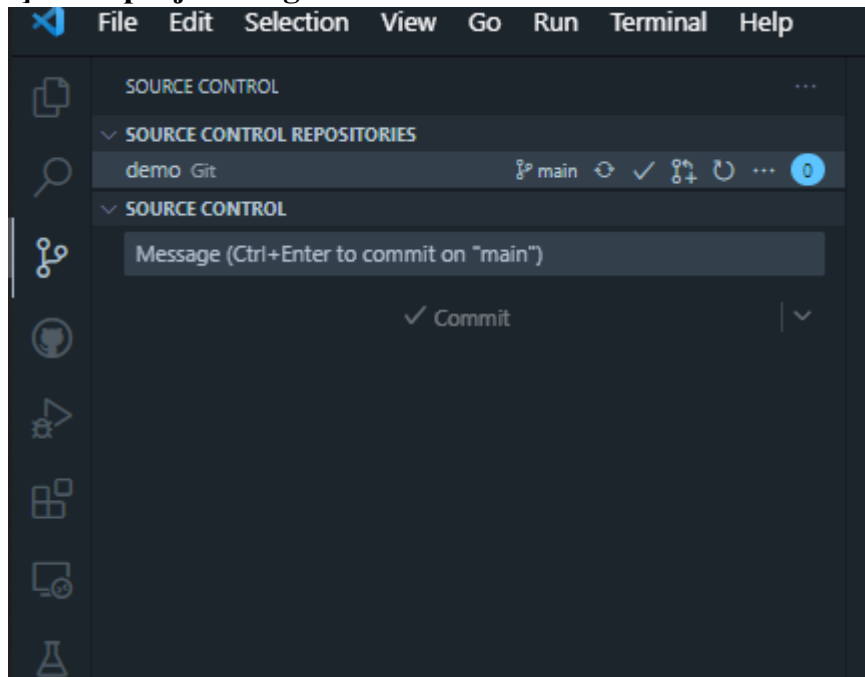
<properties>
  <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
  <maven.compiler.source>1.7</maven.compiler.source>
  <maven.compiler.target>1.7</maven.compiler.target>
</properties>

<dependencies>
  <dependency>
    <groupId>junit</groupId>
    <artifactId>junit</artifactId>
    <version>4.11</version>
    <scope>test</scope>
  </dependency>
</dependencies>

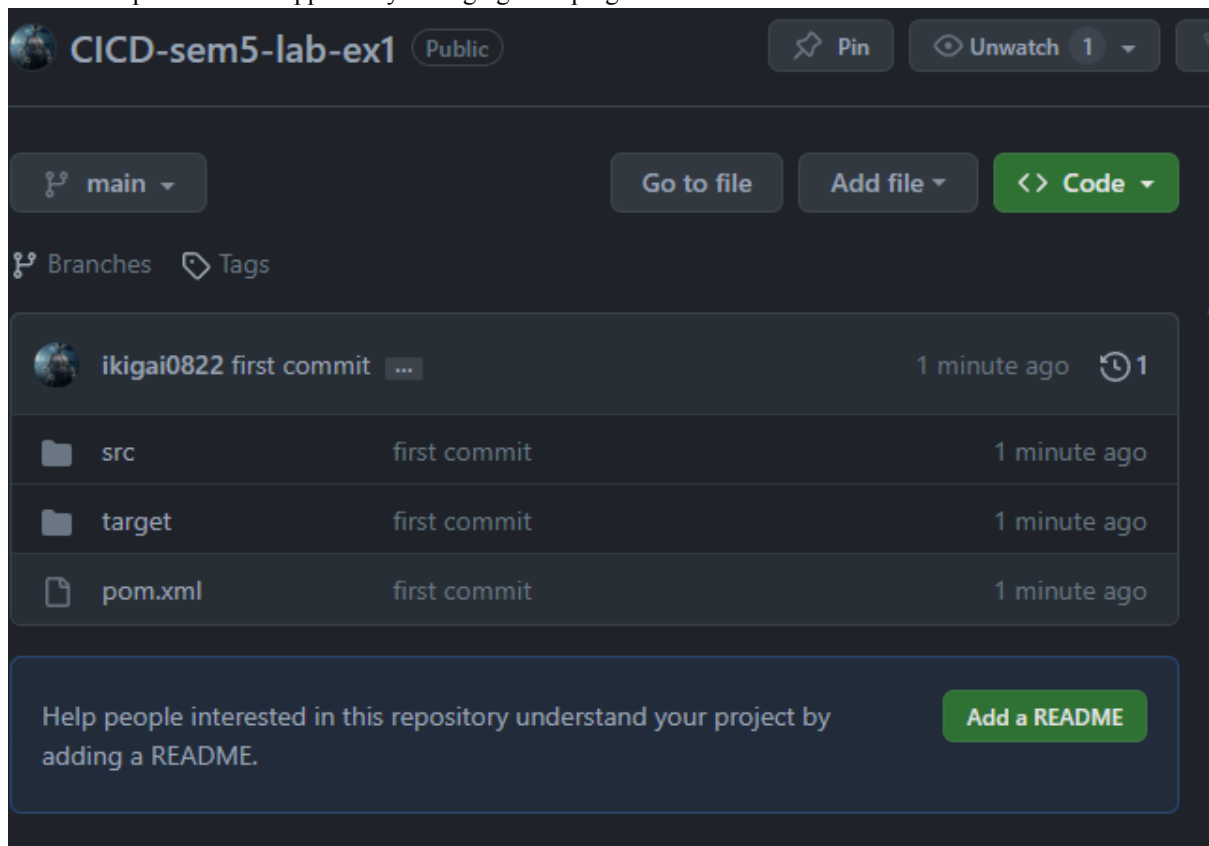
<build>
  <pluginManagement><!-- Lock down plugins versions to avoid using Maven defaults (may be moved to parent) -->
    <plugins>
      <plugin>
        <artifactId>maven-clean-plugin</artifactId>
        <version>3.0.0</version>
      </plugin>
      <!-- see http://maven.apache.org/ref/current/maven-core/default-bindings.html#Plugin\_bindings\_for\_jar\_packs -->
      <plugin>
        <artifactId>maven-resources-plugin</artifactId>
        <version>3.0.2</version>
      </plugin>
      <plugin>
        <artifactId>maven-compiler-plugin</artifactId>
        <version>3.7.0</version>
      </plugin>
      <plugin>
        <artifactId>maven-surefire-plugin</artifactId>
        <version>2.20.1</version>
      </plugin>
      <plugin>
        <artifactId>maven-jar-plugin</artifactId>
        <version>3.0.2</version>
      </plugin>
      <plugin>
        <artifactId>maven-install-plugin</artifactId>
        <version>2.5.2</version>
      </plugin>
      <plugin>
        <artifactId>maven-deploy-plugin</artifactId>
        <version>2.8.2</version>
      </plugin>
    </plugins>
  </pluginManagement>
</build>

```


2] Push project on github.




Pushed and published the app locally through github plugin in vscode




3] Start Jenkins and add maven Integration Plugin and create a maven project name as “Cicd-lab1” and add URL of our repo in github and configure it.


Name ↓	Enabled
Maven Integration 3.20 This plugin provides a deep integration between Jenkins and Maven. It adds support for automatic triggers between projects depending on SNAPSHOTS as well as the automated configuration of various Jenkins publishers such as Junit. Report an issue with this plugin	<input checked="" type="checkbox"/> 

 Git ?

Repositories ?

Repository URL ? 

Credentials ?


- none - 

+ Add

Advanced...


Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ? 

Add Branch

Repository browser ?

(Auto) 

Build

Root POM ?

pom.xml

Goals and options ?


install


Advanced ▾


Post Steps


- ☐ Run only if build succeeds
- ☐ Run only if build succeeds or is unstable


4] Now Build it.


 **Build Now**


 **Configure**

 **Delete Maven project**




 **Modules**



 **Rename**

 **Build History** **trend** ▾



No builds

 [Atom feed for all](#)  [Atom feed for failures](#)

```

> git --version # 'git version 2.39.0.windows.2'
> C:\Program Files\Git\bin\git.exe fetch --tags --force --progress -- https://github.com/ikigai0822/CICD-sem5-lab-ex1.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> C:\Program Files\Git\bin\git.exe config remote.origin.url https://github.com/ikigai0822/CICD-sem5-lab-ex1.git # timeout=10
> C:\Program Files\Git\bin\git.exe config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> C:\Program Files\Git\bin\git.exe rev-parse "refs/remotes/origin/main^{commit}" # timeout=10
Checking out Revision f8ec638559a90b4d7372f8a1a996240c71ad81ef (refs/remotes/origin/main)
> C:\Program Files\Git\bin\git.exe config core.sparsecheckout # timeout=10
> C:\Program Files\Git\bin\git.exe checkout -f f8ec638559a90b4d7372f8a1a996240c71ad81ef # timeout=10
Commit message: "first commit"
First time build. Skipping changelog.
Parsing POMs
Discovered a new module cicd.lab1:demo demo
Modules changed, recalculating dependency graph
Established TCP socket on 50289
[cicd-lab1] $ java -cp C:\ProgramData\Jenkins\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven35-agent-1.14.jar;C:\ProgramData\Jenkins\.jenkins\tools\udson.tasks.Maven_MavenInstallation\Default\boot\plexus-classworlds-2.6.0.jar;C:\ProgramData\Jenkins\.jenkins\tools\udson.tasks.Maven_MavenInstallation\Default\conf\logging-jenkins.maven3.agent.Maven35Main C:\ProgramData\Jenkins\.jenkins\tools\udson.tasks.Maven_MavenInstallation\Default C:\ProgramData\Jenkins\war\WEB-INF\lib\remoting-3077.vd69cf116da_6f.jar C:\ProgramData\Jenkins\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven35-interceptor-1.14.jar C:\ProgramData\Jenkins\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven3-interceptor-commons-1.14.jar 50289
<==[JENKINS REMOTING CAPACITY]==>channel started
Executing Maven: -B -f C:\ProgramData\Jenkins\.jenkins\workspace\cicd-lab1\pom.xml install
[INFO] Scanning for projects...
[INFO]
[INFO] -----< cicd.lab1:demo >-----
[INFO] Building demo 0.01
[INFO] from pom.xml
[INFO] -----[ jar ]-----
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.7.0/maven-compiler-plugin-3.7.0.pom
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.7.0/maven-compiler-plugin-3.7.0.pom (11 kB at 6.5 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.7.0/maven-compiler-plugin-3.7.0.jar

```


Dashboard > cicd-lab1 > #6

```
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-junit4/2.22.2/surefire-junit4-2.22.2.jar
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-junit4/2.22.2/surefire-junit4-2.22.2.jar (85 kB at 232 kB/s)
[INFO]
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running cicd.lab1.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.047 s - in cicd.lab1.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[JENKINS] Recording test results
[INFO]
[INFO] --- jar:3.0.2:jar (default-jar) @ demo ---
[INFO] Building jar: C:\ProgramData\Jenkins\.jenkins\workspace\cicd-lab1\target\demo-0.01.jar
[INFO]
[INFO] --- install:2.5.2:install (default-install) @ demo ---
[INFO] Installing C:\ProgramData\Jenkins\.jenkins\workspace\cicd-lab1\target\demo-0.01.jar to
C:\WINDOWS\system32\config\systemprofile\.m2\repository\cicd\lab1\demo\0.01\demo-0.01.jar
[INFO] Installing C:\ProgramData\Jenkins\.jenkins\workspace\cicd-lab1\pom.xml to
C:\WINDOWS\system32\config\systemprofile\.m2\repository\cicd\lab1\demo\0.01\demo-0.01.pom
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 25.622 s
[INFO] Finished at: 2023-10-28T14:15:24+05:30
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving C:\ProgramData\Jenkins\.jenkins\workspace\cicd-lab1\pom.xml to cicd.lab1/demo/0.01/demo-0.01.pom
[JENKINS] Archiving C:\ProgramData\Jenkins\.jenkins\workspace\cicd-lab1\target\demo-0.01.jar to
cicd.lab1/demo/0.01/demo-0.01.jar
channel stopped
Finished: SUCCESS
```

5] edit the code and add poll scm in jenkins configuration then again commit and push it.

Dashboard > cicd-b2-lab1 > Configuration

Configure

- General
- Source Code Management
- Build Triggers
- Build Environment
- Pre Steps
- Build
- Post Steps
- Build Settings

- ☐ GitHub Branches
- ☐ GitHub Pull Request Builder
- ☐ GitHub Pull Requests ?
- ☐ GitHub hook trigger for GITScm polling ?
- ☐ Gitlab Merge Requests Builder
- ☒ Poll SCM ?

Schedule ?

```
****
```

⚠ Do you really mean "every minute" when you say "****"? Perhaps you meant "H ****" to poll once per hour
Would last have run at Monday, 28 August, 2023 at 10:13:24 am India Standard Time; would next run at Monday, 28 Aug

6] After push we can see it will make automatic build.

```
prana@Beware MINGW64 /d/sem 5 devops/CICD/R2142210577_CICD_LabExperiments/Experiment 1/demo (main)
$ git push
Enumerating objects: 25, done.
Counting objects: 100% (25/25), done.
Delta compression using up to 16 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (13/13), 1.69 KiB | 216.00 KiB/s, done.
Total 13 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/ikigai0822/CICD-sem5-lab-ex1.git
   be272d8..78516f6  main -> main

prana@Beware MINGW64 /d/sem 5 devops/CICD/R2142210577_CICD_LabExperiments/Experiment 1/demo (main)
$
```

Filter builds...	
#7	(pending—In the quiet period. Expires in 2.8 sec)
✓ #6	28 Oct 2023, 14:14
✗ #5	28 Oct 2023, 14:13

Filter builds...	
✓ #7	28 Oct 2023, 14:19
✓ #6	28 Oct 2023, 14:14
✗ #5	28 Oct 2023, 14:13
✗ #4	28 Oct 2023, 14:07
✗ #3	28 Oct 2023, 14:02
✗ #2	28 Oct 2023, 14:01
✗ #1	28 Oct 2023, 13:57
Atom feed for all Atom feed for failures	

Build successful :)