

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:

Dr. Hitesh Kumar Sharma

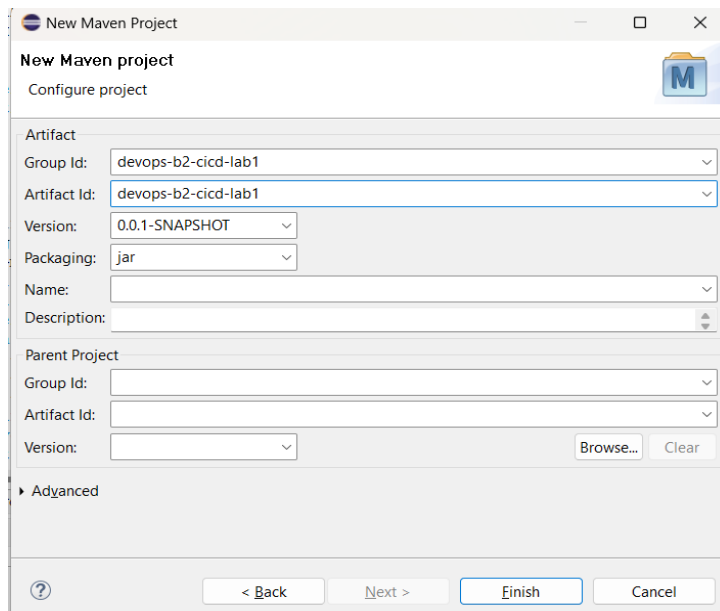
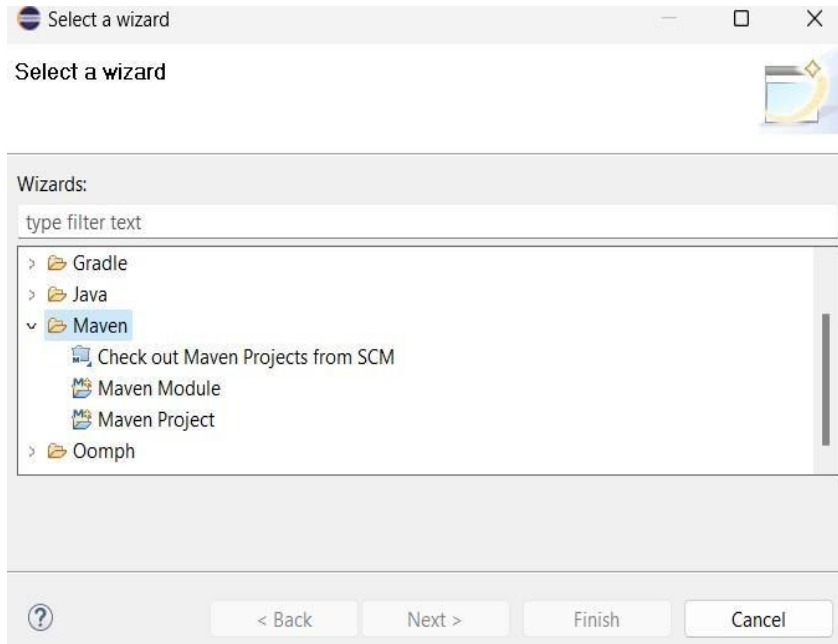
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LAB EXERCISE - 1

Aim:

1] Create a Maven Project in eclipse.



```

MyCalculator.java x devops-b2-cicd-lab1/pom.xml
1 package mypkg;
2
3 public class MyCalculator {
4
5     public int sum(int a, int b)
6     {
7         return(a+b);
8     }
9
10    public int diff(int a, int b)
11    {
12        return(a-b);
13    }
14    public static void main(String[] args) {
15
16        MyCalculator calc = new MyCalculator ();
17        System.out.println("Sum is "+calc.sum(20, 10));
18        System.out.println("Diff is "+calc.diff(20, 10));
19
20    }
21
22 }
23

```

```

Console x
<terminated> MyCalculator [Java Application] C:\Users\kamdi\p2\pool\plugins\org.eclipse.ju
Sum is 30
Diff is 10

```

```

1 <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3
2 <modelVersion>4.0.0</modelVersion>
3 <groupId>devops-b2-cicd-lab1</groupId>
4 <artifactId>devops-b2-cicd-lab1</artifactId>
5 <version>0.0.1-SNAPSHOT</version>
6
7 <properties>
8 <maven.compiler.source>1.8</maven.compiler.source>
9 <maven.compiler.target>1.8</maven.compiler.target>
10 </properties>
11
12
13 <dependencies>
14 <dependency>
15 <groupId>junit</groupId>
16 <artifactId>junit</artifactId>
17 <version>4.13</version>
18 <scope>test</scope>
19 </dependency>
20
21 <dependency>
22 <groupId>org.sonarsource.scanner.maven</groupId>
23 <artifactId>sonar-maven-plugin</artifactId>
24 <version>3.9.0.2155</version>
25 </dependency>
26
27 </dependencies>
28
29 <build>
30 <finalName>my-calculator</finalName>
31 <plugins>
32 <plugin>
33 <!-- Build an executable JAR test ABC-->
34 <groupId>org.apache.maven.plugins</groupId>
35 <artifactId>maven-jar-plugin</artifactId>
36 <version>3.1.0</version>
37 <configuration>
38 <archive>
39 <manifest>
40 <addClasspath>true</addClasspath>
41 <classpathPrefix>lib/</classpathPrefix>
42 <mainClass>mypkg.MyCalculator</mainClass>
43 </manifest>
44 </archive>
45 </configuration>
46 </plugin>
47 </plugins>
48 </build>
49
50
51 </project>

```

2] Push project on github.

```
MINGW64 ~/Desktop/CICD
P@Shu: ~/Desktop/CICD
$ git init
Initialized empty Git repository in C:/Users/H.P/Desktop/CICD/.git/
P@Shu: ~/Desktop/CICD (master)
$ git remote add origin https://github.com/Shuu-55/CICD-Lab.git
P@Shu: ~/Desktop/CICD (master)
$ git status
On branch master
No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
  devops-cicd-b2-lab1/

nothing added to commit but untracked files present (use "git add" to track)
P@Shu: ~/Desktop/CICD (master)
$ git add .
bash: git: command not found
P@Shu: ~/Desktop/CICD (master)
$ git add .
P@Shu: ~/Desktop/CICD (master)
$ git status
On branch master
No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
  new file:   devops-cicd-b2-lab1/.classpath
  new file:   devops-cicd-b2-lab1/project
  new file:   devops-cicd-b2-lab1/settings/org.eclipse.jdt.core.prefs
  new file:   devops-cicd-b2-lab1/settings/org.eclipse.m2e.core.prefs
  new file:   devops-cicd-b2-lab1/pom.xml
  new file:   devops-cicd-b2-lab1/src/main/java/MyCalc.java
  new file:   devops-cicd-b2-lab1/target/classes/META-INF/MANIFEST.MF
  new file:   devops-cicd-b2-lab1/target/classes/META-INF/maven/devops-cicd-b2-lab1/pom.properties
  new file:   devops-cicd-b2-lab1/target/classes/META-INF/maven/devops-cicd-b2-lab1/devops-cicd-b2-lab1/pom.xml
  new file:   devops-cicd-b2-lab1/target/classes/MyCalc.class
P@Shu: ~/Desktop/CICD (master)
$ git commit -m "First cicd lab exp"
[master (root-commit) 07e6fd] First cicd lab exp
10 files changed, 115 insertions(+)
create mode 100644 devops-cicd-b2-lab1/.classpath
create mode 100644 devops-cicd-b2-lab1/project
create mode 100644 devops-cicd-b2-lab1/settings/org.eclipse.jdt.core.prefs
create mode 100644 devops-cicd-b2-lab1/settings/org.eclipse.m2e.core.prefs
create mode 100644 devops-cicd-b2-lab1/pom.xml
create mode 100644 devops-cicd-b2-lab1/src/main/java/MyCalc.java
create mode 100644 devops-cicd-b2-lab1/target/classes/META-INF/MANIFEST.MF
create mode 100644 devops-cicd-b2-lab1/target/classes/META-INF/maven/devops-cicd-b2-lab1/devops-cicd-b2-lab1/pom.properties
create mode 100644 devops-cicd-b2-lab1/target/classes/META-INF/maven/devops-cicd-b2-lab1/devops-cicd-b2-lab1/pom.xml
create mode 100644 devops-cicd-b2-lab1/target/classes/MyCalc.class
P@Shu: ~/Desktop/CICD (master)
$ git push -u origin master
Counting objects: 22, done.
Compressing objects: 100% (22/22), done.
Writing objects: 100% (22/22), 3.02 KiB | 1.01 MiB/s, done.
Total 22 (delta 0), reused 0 (delta 0), pushed 0
To https://github.com/Shuu-55/CICD-Lab.git
 * [new branch] master -> master
branch 'master' set up to track 'origin/master'.
P@Shu: ~/Desktop/CICD (master)
$
```

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.

Dashboard > CICD_Lab1 > Configuration

Configure

General

Source Code Management

Build Triggers

Build Environment

Pre Steps

Build

Post Steps

Build Settings

Post-build Actions

None

Git

Repositories

Repository URL
https://github.com/Shuu-55/CICD-Lab.git

Credentials
- none -

Add

Advanced

Add Repository

Branches to build

Branch Specifier (blank for 'any')
*/master

Add Branch

Repository browser
(Auto)

Build

Root POM ?

pom.xml

Goals and options ?

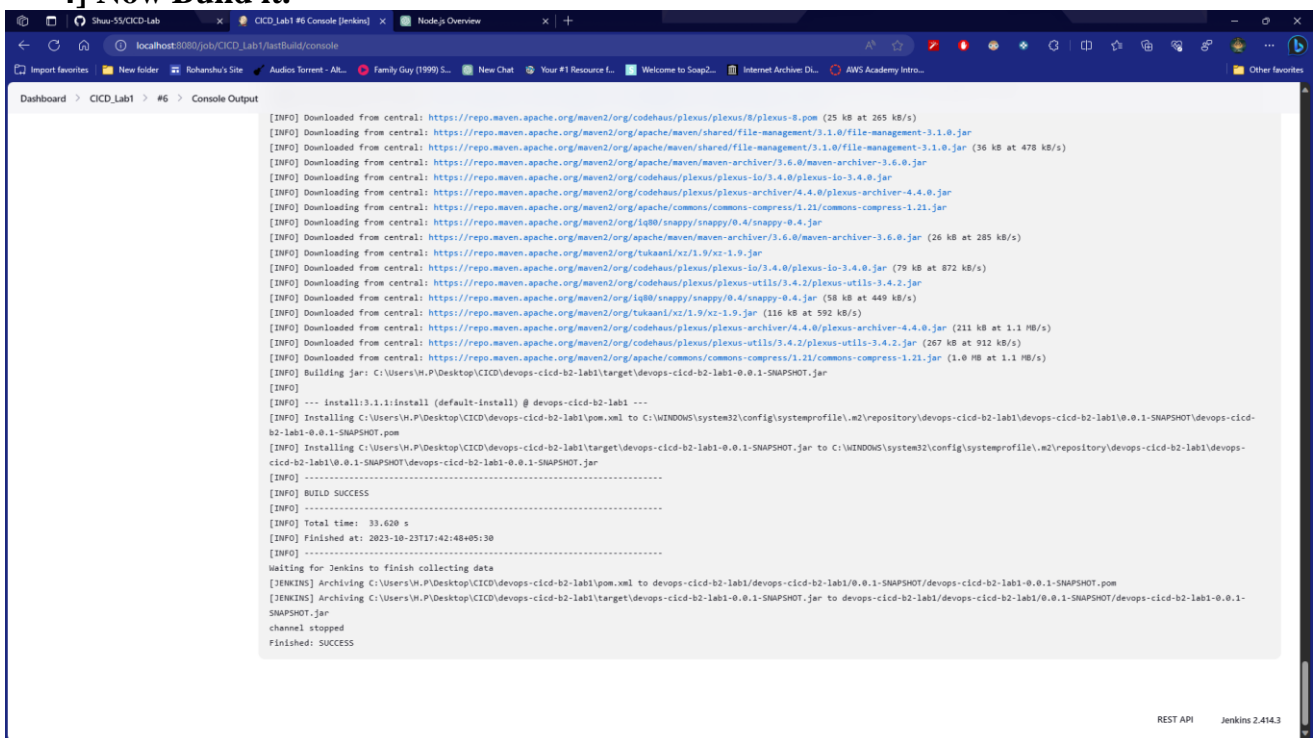
install

Advanced ▾

Post Steps

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

4] Now Build it.




```
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-8.pom (25 kB at 265 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/file-management-3.1.0.jar (36 kB at 478 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver-3.6.0/maven-archiver-3.6.0.jar (36 kB at 478 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io-3.4.0/plexus-io-3.4.0.jar (79 kB at 872 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver-4.4.0/plexus-archiver-4.4.0.jar (211 kB at 1.1 MB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/commons/commons-compress-1.21/commons-compress-1.21.jar (1.0 MB at 1.1 MB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver-3.6.0/maven-archiver-3.6.0.jar (26 kB at 285 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/tukaani/xz-1.9/xz-1.9.jar (116 kB at 592 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io-3.4.0/plexus-io-3.4.0.jar (79 kB at 872 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utilities-3.4.2/plexus-utilities-3.4.2.jar (267 kB at 912 kB/s)
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utilities-3.4.2/plexus-utilities-3.4.2.jar (267 kB at 912 kB/s)
[INFO] Building jar: C:\Users\H.P\Desktop\CICD\devops-cicd-b2-lab1\target\devops-cicd-b2-lab1-0.0.1-SNAPSHOT.jar
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 33.620 s
[INFO] Finished at: 2023-10-23T17:42:48+05:30
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving C:\Users\H.P\Desktop\CICD\devops-cicd-b2-lab1\pom.xml to devops-cicd-b2-lab1\devops-cicd-b2-lab1-0.0.1-SNAPSHOT\devops-cicd-b2-lab1-0.0.1-SNAPSHOT.pom
[JENKINS] Archiving C:\Users\H.P\Desktop\CICD\devops-cicd-b2-lab1\target\devops-cicd-b2-lab1-0.0.1-SNAPSHOT.jar to devops-cicd-b2-lab1\devops-cicd-b2-lab1-0.0.1-SNAPSHOT\devops-cicd-b2-lab1-0.0.1-SNAPSHOT.jar
channel stopped
Finished: SUCCESS
```

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

☒ 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, 23 October, 2023 at 5:44:35 pm India Standard Time; would next run at Monday, 23 October, 2023 at 5:44:35 pm India Standard Time.

☐ Ignore post-commit hooks ?

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

> ckd-b2-lab1 > #2 > Console Output

```
[JENKINS] Recording test results
[INFO]
[INFO] --- jar:3.1.0:jar (default-jar) @ devops-b2-cicd-lab1 ---
[INFO] Building jar: C:\ProgramData\Jenkins\jenkins\workspace\ckd-b2-lab1\target\my-calculator.jar
[INFO]
[INFO] --- install:3.1.1:install (default-install) @ devops-b2-cicd-lab1 ---
[INFO] Installing C:\ProgramData\Jenkins\jenkins\workspace\ckd-b2-lab1\pom.xml to C:\WINDOWS\system32\config\systemprofile\.m2\repository\devops-b2-cicd-lab1\devops-b2-cicd-lab1\0.0.1-SNAPSHOT\pom
[INFO] Installing C:\ProgramData\Jenkins\jenkins\workspace\ckd-b2-lab1\target\my-calculator.jar to C:\WINDOWS\system32\config\systemprofile\.m2\repository\devops-b2-cicd-lab1\devops-b2-cicd-lab1\0.0.1-SNAPSHOT\my-calculator.jar
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 3.931 s
[INFO] Finished at: 2023-08-28T10:19:24+05:30
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving C:\ProgramData\Jenkins\jenkins\workspace\ckd-b2-lab1\pom.xml to devops-b2-cicd-b2-cicd-lab1-0.0.1-SNAPSHOT\pom
[JENKINS] Archiving C:\ProgramData\Jenkins\jenkins\workspace\ckd-b2-lab1\target\my-calculator.jar to devops-b2-cicd-b2-cicd-lab1-0.0.1-SNAPSHOT\my-calculator.jar
channel stopped
[Gitea Checks] Causes for no suitable publisher found:
[Gitea Checks] Trying to resolve checks parameters from Gitea SCM...
[Gitea Checks] Job does not use Gitea SCM
```

✓ #6

| Oct 23, 2023, 5:42 PM

