

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

Submitted By:

Shashwat Dnyaneshwar Kamdi

B. Tech. CSE [DevOps]

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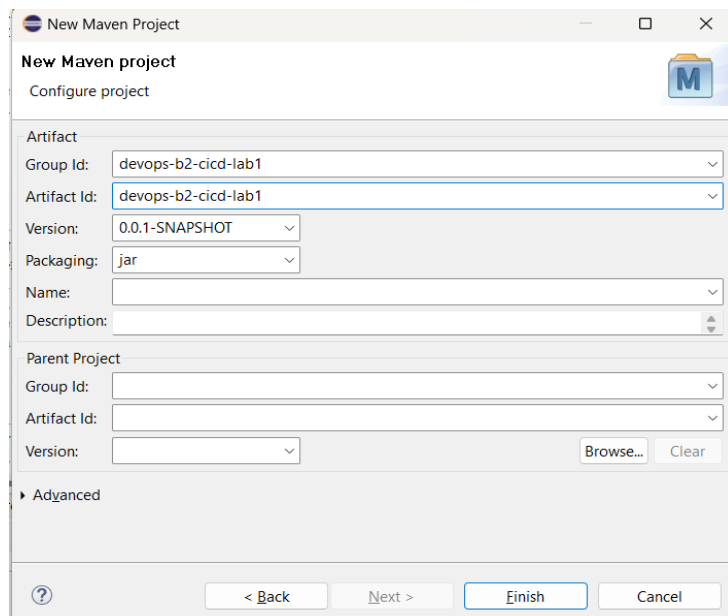
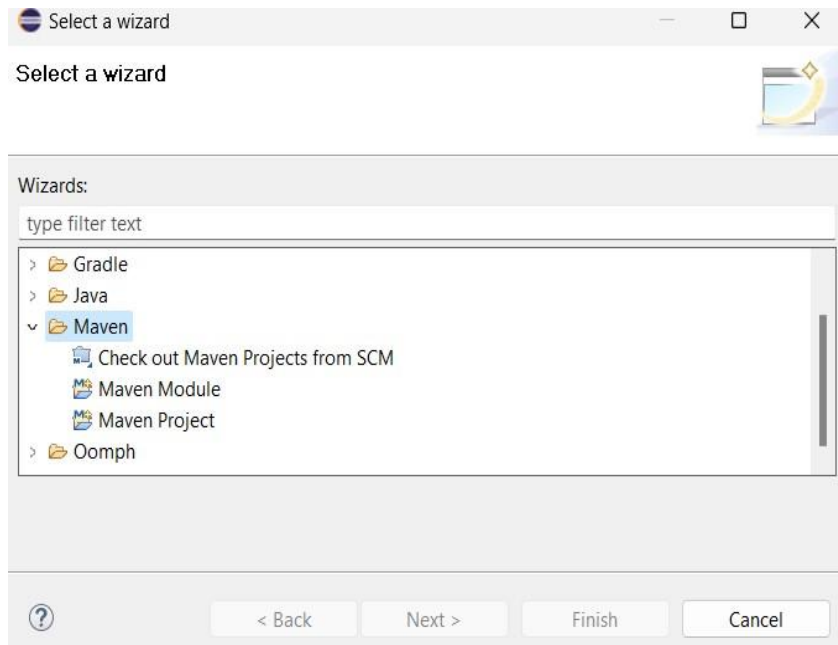
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B2- Devops (Non-Hons)

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~/c:/Users/kamdi/eclipse Workspace/devops-b2-cicd-lab1

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git init
Reinitialized existing Git repository in C:/Users/kamdi/eclipse Workspace/devops-b2-cicd-lab1/.git/

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git status
On branch main
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   src/main/java/mypkg/MyCalculator.java

no changes added to commit (use "git add" and/or "git commit -a")

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git add .

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git commit -m "first version"
[main 5425ae9] first version
1 file changed, 1 insertion(+), 1 deletion(-)

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git branch -M main

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git remote add origin https://github.com/kamdishashwat-17/Cicd-Lab1.git
error: remote origin already exists.

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git remote -v
origin https://github.com/kamdishashwat-17/CICD-lab1.git (fetch)
origin https://github.com/kamdishashwat-17/CICD-lab1.git (push)

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
$ git push -u origin main
Enumerating objects: 36, done.
Counting objects: 100% (36/36), done.
Delta compression using up to 12 threads
Compressing objects: 100% (18/18), done.
Writing objects: 100% (36/36), 3.92 KiB | 1.31 MiB/s, done.
Total 36 (delta 6), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (6/6), done.
remote: This repository moved. Please use the new location:
remote: https://github.com/kamdishashwat-17/Cicd-Lab1.git
To https://github.com/kamdishashwat-17/CICD-lab1.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.

kamdi@DESKTOP-P4AQHPQ MINGW64 ~/eclipse Workspace/devops-b2-cicd-lab1 (main)
```

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.

Git ?

Repositories ?

Repository URL ?

https://github.com/kamdishashwat-17/Cicd-Lab1.git

Credentials ?

- none -

+ Add

Advanced ▾

Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ?

*/main

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.

```
> ckd-b2-lab1 > #1 > Console Output

[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] --- 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\system
b2-cicd-lab1\devops-b2-cicd-lab1\0.0.1-SNAPSHOT\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.jar
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 16.854 s
[INFO] Finished at: 2023-08-28T10:07:20+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
lab1\0.0.1-SNAPSHOT\devops-b2-cicd-lab1-0.0.1-SNAPSHOT.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
[Gitea Checks] Trying to resolve checks parameters from Git SCM...
[Gitea Checks] No credentials found
[Gitea Checks] Job does not have valid credentials
[Checks API] No suitable checks publisher found.
Finished: SUCCESS
```

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

Dashboard > ckd-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.

> 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\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\0.0.1-SNAPSHOT\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-lab1\0.0.1-SNAPSHOT\devops-b2-cicd-lab1-0.0.1-SNAPSHOT.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
```

✓ #2

| Aug 28, 2023, 10:19 AM

✓ #1

| Aug 28, 2023, 10:06 AM