

## **Experiment No. 1.3**

**Student Name:** Parvinder Singh

**UID:** 22MCC20043

**Branch:** MCA - CCD

**Section/Group:** 22MCD-1/ Grp B

**Semester:** III

**Subject Name:** DevOps Process Automation Lab

**Subject Code:** 22CAP-745

### **1. Aim/Overview of the practical:**

With an understanding of the theory and techniques that Maven uses to manage a project, we can now develop our own Maven project. In this application, you have to create a simple adder that computes the sum of two integers. During this process, you will:

- Generate a Maven project using the Maven command-line tool
- Configure the pom.xml file
- Create main and test source code files
- Execute a Maven build
- Execute the resulting JAR file

### **Maven Installation**

```
C:\Users\Pinda\Desktop>mvn --version
Apache Maven 3.9.4 (dfbb324ad4a7c8fb0bf182e6d91b0ae20e3d2dd9)
Maven home: C:\Users\Pinda\Maven\apache-maven-3.9.4
Java version: 19.0.2, vendor: Oracle Corporation, runtime: C:\Program Files\Java\jdk-19
Default locale: en_IN, platform encoding: UTF-8
OS name: "windows 11", version: "10.0", arch: "amd64", family: "windows"
```

### **2. Code for experiment/practical:**

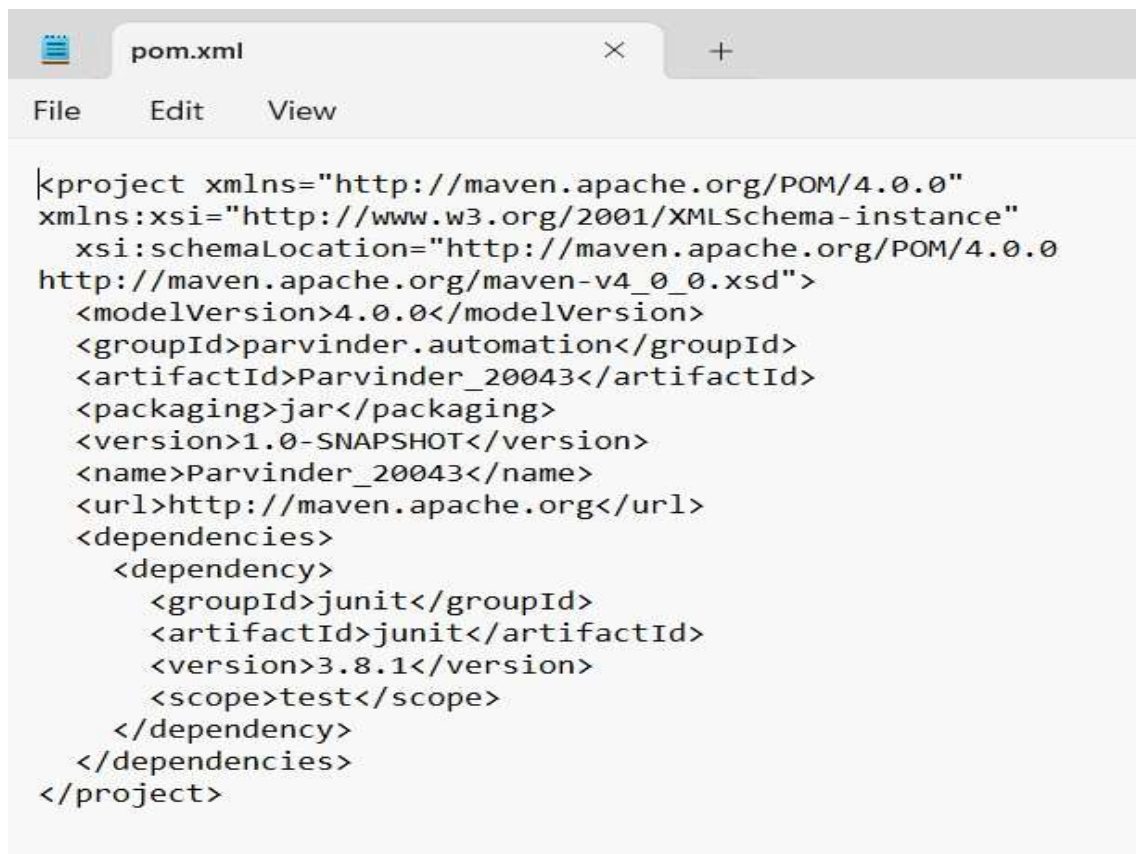
#### **a. Generate a Maven project using the Maven command-line tool**

Creating Project using command: mvn archetype:generate

```
mvn archetype:generate -DgroupId=parvinder.automation -DartifactId=Parvinder_20043 -
DinteractiveMode=false
```

```
C:\Users\Pinda\Desktop> mvn archetype:generate -DgroupId=parvinder.automation -DartifactId=Parvinder_20043 -DinteractiveMode=false
[INFO] Scanning for projects...
[INFO]
[INFO] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO]
[INFO] >>> archetype:3.2.1:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO]
[INFO] <<< archetype:3.2.1:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO]
[INFO] --- archetype:3.2.1:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Batch mode
[INFO] No archetype defined. Using maven-archetype-quickstart (org.apache.maven.archetypes:maven-archetype-quickstart:1.0)
[INFO] -----
[INFO] Using following parameters for creating project from Old (1.x) Archetype: maven-archetype-quickstart:1.0
[INFO] -----
[INFO] Parameter: basedir, Value: C:\Users\Pinda\Desktop
[INFO] Parameter: package, Value: parvinder.automation
[INFO] Parameter: groupId, Value: parvinder.automation
[INFO] Parameter: artifactId, Value: Parvinder_20043
[INFO] Parameter: packageName, Value: parvinder.automation
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] project created from Old (1.x) Archetype in dir: C:\Users\Pinda\Desktop\Parvinder_20043
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 12.389 s
[INFO] Finished at: 2023-09-12T22:00:23+05:30
[INFO] -----
```

## b. Configure the pom.xml file



```
<?xml version="1.0" encoding="UTF-8" ?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
    http://maven.apache.org/maven-v4_0_0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>parvinder.automation</groupId>
  <artifactId>Parvinder_20043</artifactId>
  <packaging>jar</packaging>
  <version>1.0-SNAPSHOT</version>
  <name>Parvinder_20043</name>
  <url>http://maven.apache.org</url>
  <dependencies>
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>3.8.1</version>
      <scope>test</scope>
    </dependency>
  </dependencies>
</project>
```

### c. Create main and test source code files

Creating two files:

- Parvinder.java
- Pinda.java



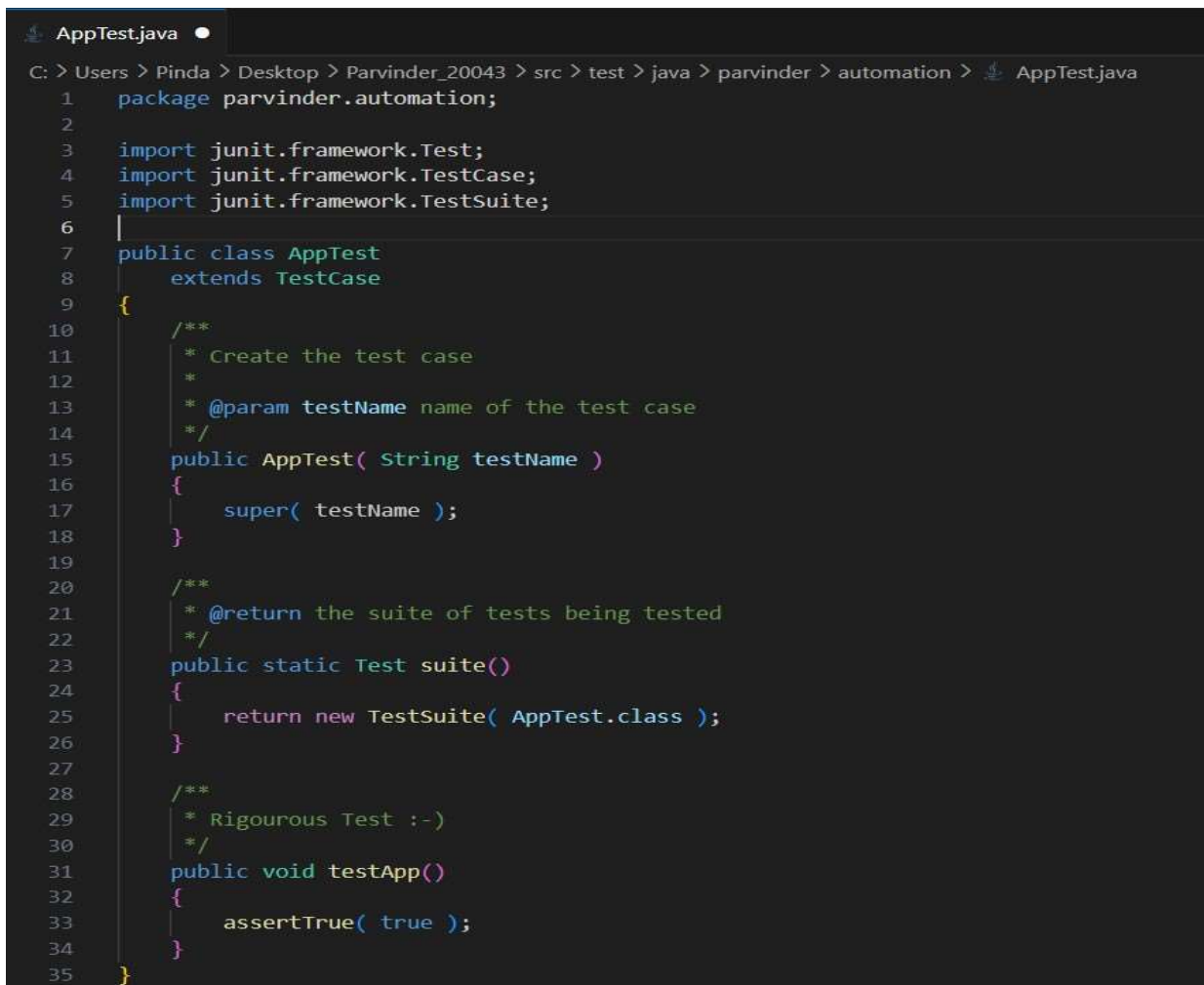
The screenshot shows an IDE with two files open: Parvinder.java and Pinda.java. The Explorer panel on the left shows the file structure under 'AUTOMATION'. The main editor area shows the code for both files.

```
Parvinder.java
1 package parvinder.automation;
2
3 public class Parvinder
4 {
5     public static void main( String[] args )
6     {
7         System.out.println( "Name: Parvinder Singh" );
8     }
9 }
10

Pinda.java
1 package parvinder.automation;
2
3 public class Pinda
4 {
5     public static void main( String[] args )
6     {
7         System.out.println( "UID: 22MCC20043" );
8     }
9 }
10
```

Test Source Code:

- AppTest.java



The screenshot shows the AppTest.java file in an IDE. The file path is visible at the top: C:\> Users > Pinda > Desktop > Parvinder\_20043 > src > test > java > parvinder > automation > AppTest.java. The code is as follows:

```
AppTest.java
1 package parvinder.automation;
2
3 import junit.framework.Test;
4 import junit.framework.TestCase;
5 import junit.framework.TestSuite;
6
7 public class AppTest
8     extends TestCase
9 {
10     /**
11      * Create the test case
12      *
13      * @param testName name of the test case
14      */
15     public AppTest( String testName )
16     {
17         super( testName );
18     }
19
20     /**
21      * @return the suite of tests being tested
22      */
23     public static Test suite()
24     {
25         return new TestSuite( AppTest.class );
26     }
27
28     /**
29      * Rigorous Test :-
30      */
31     public void testApp()
32     {
33         assertTrue( true );
34     }
35 }
```

#### d. Execute a Maven build

- mvn clean
- mvn validate
- mvn compile
- mvn test
- mvn package
- mvn integration-test
- mvn verify
- mvn install

```
C:\Users\Pinda\Desktop>cd Parvinder_20043

C:\Users\Pinda\Desktop\Parvinder_20043>mvn clean
[INFO] Scanning for projects...
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO] --- clean:3.2.0:clean (default-clean) @ Parvinder_20043 ---
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time:  0.455 s
[INFO] Finished at: 2023-09-12T22:13:26+05:30
[INFO] -----
```

```
C:\Users\Pinda\Desktop\Parvinder_20043>mvn validate
[INFO] Scanning for projects...
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time:  0.147 s
[INFO] Finished at: 2023-09-12T22:13:49+05:30
[INFO] -----
```



```
C:\Users\Pinda\Desktop\Parvinder_20043>mvn compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ Parvinder_20043 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Pinda\Desktop\Parvinder_20043\src\main\resources
```

```
C:\Users\Pinda\Desktop\Parvinder_20043>mvn test
[INFO] Scanning for projects...
[INFO]
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ Parvinder_20043 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Pinda\Desktop\Parvinder_20043\src\main\resources
```

```
C:\Users\Pinda\Desktop\Parvinder_20043>mvn package
[INFO] Scanning for projects...
[INFO]
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ Parvinder_20043 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Pinda\Desktop\Parvinder_20043\src\main\resources
[INFO]
[INFO] --- compiler:3.11.0:compile (default-compile) @ Parvinder_20043 ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- resources:3.3.1:testResources (default-testResources) @ Parvinder_20043 ---
```

```
C:\Users\Pinda\Desktop\Parvinder_20043>mvn integration-test
[INFO] Scanning for projects...
[INFO]
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ Parvinder_20043 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Pinda\Desktop\Parvinder_20043\src\main\resources
```

```
C:\Users\Pinda\Desktop\Parvinder_20043>mvn verify
[INFO] Scanning for projects...
[INFO]
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ Parvinder_20043 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Pinda\Desktop\Parvinder_20043\src\main\resources
```

```
C:\Users\Pinda\Desktop\Parvinder_20043>mvn install
[INFO] Scanning for projects...
[INFO]
[INFO] -----< parvinder.automation:Parvinder_20043 >-----
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]    from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ Parvinder_20043 ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Pinda\Desktop\Parvinder_20043\src\main\resources
[INFO] Installing C:\Users\Pinda\Desktop\Parvinder_20043\pom.xml to C:\Users\Pinda\.m2\repository\parvinder\automation_20043-1.0-SNAPSHOT.pom
[INFO] Installing C:\Users\Pinda\Desktop\Parvinder_20043\target\Parvinder_20043-1.0-SNAPSHOT.jar to C:\Users\Pinda\
nder_20043\1.0-SNAPSHOT\Parvinder_20043-1.0-SNAPSHOT.jar
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 2.550 s
[INFO] Finished at: 2023-09-12T22:23:27+05:30
[INFO] -----
```

#### e. Execute the resulting JAR file

**Executing jar file through command:** java -cp filename.jar ClassPath.File

Java -cp Parvinder\_20043-1.0-SNAPSHOT.jar Parvinder.automation.App

```
C:\Users\Pinda\Desktop\Parvinder_20043>cd target

C:\Users\Pinda\Desktop\Parvinder_20043\target>java -cp Parvinder_20043-1.0-SNAPSHOT.jar parvinder.automation.App
Hello World!

C:\Users\Pinda\Desktop\Parvinder_20043\target>java -cp Parvinder_20043-1.0-SNAPSHOT.jar parvinder.automation.Parvinder
Name: Parvinder Singh

C:\Users\Pinda\Desktop\Parvinder_20043\target>java -cp Parvinder_20043-1.0-SNAPSHOT.jar parvinder.automation.Pinda
UID: 22MCC20043
```