Experiment No. 1.3

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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:

   o Generate a Maven project using the Maven command-line tool
   o Configure the pom.xml file
   o Create main and test source code files
   o Execute a Maven build
   o 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"
   ```
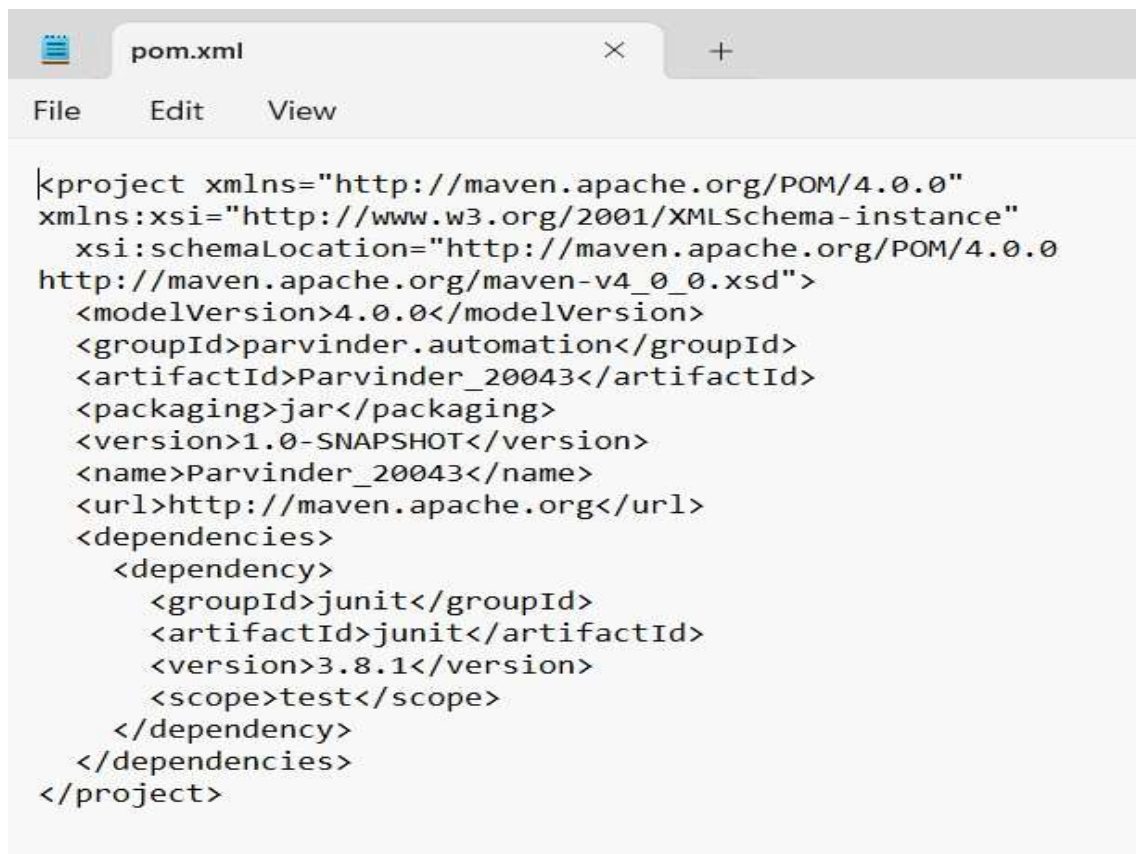
2. **Code for experiment/practical:**

   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]
[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

```
pom.xml

File    Edit    View

<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>
```

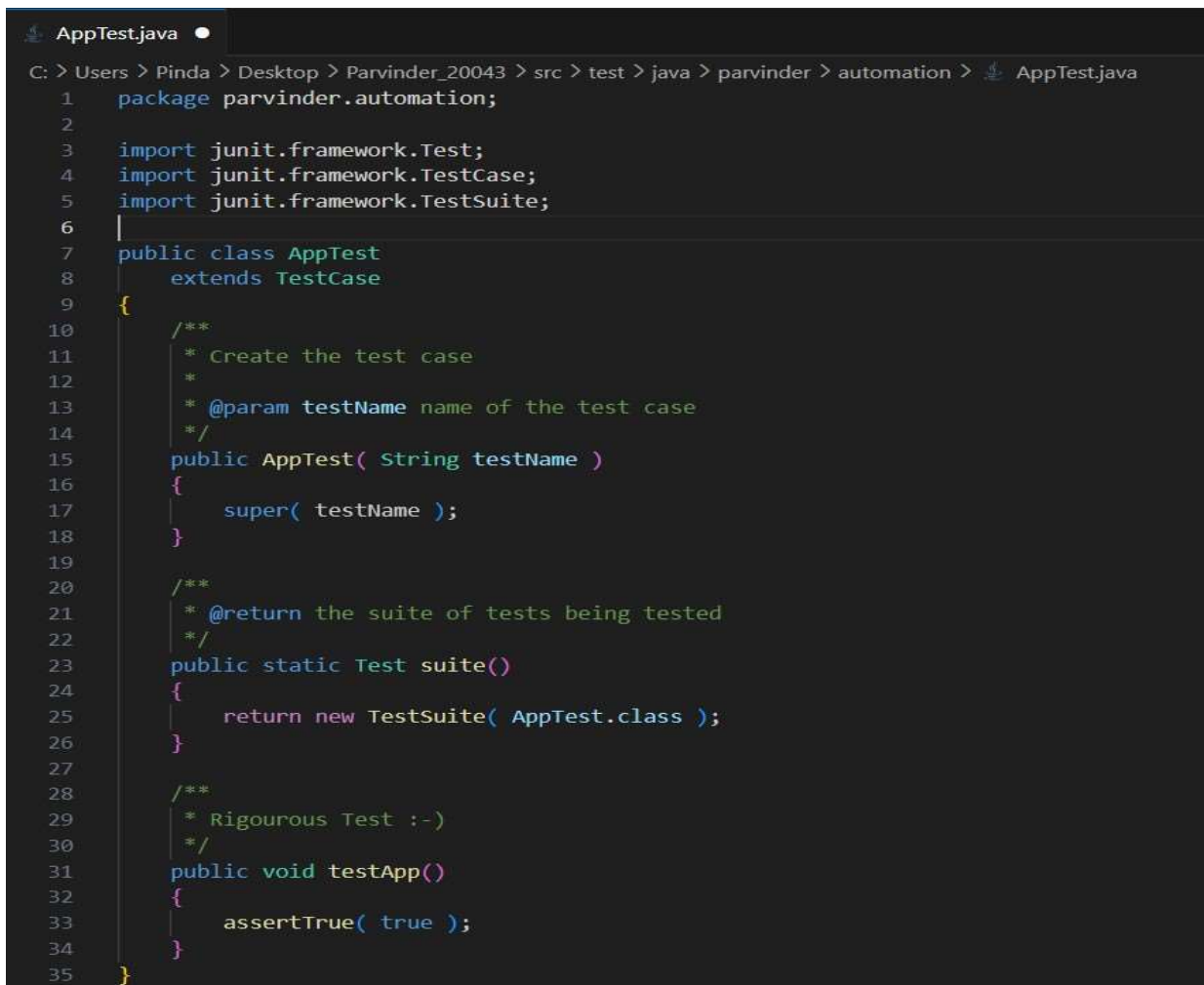## c. Create main and test source code files

Creating two files:
- Parvinder.java
- Pinda.java

Test Source Code:
- AppTest.java

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]
[INFO] ----------------< parvinder.automation:Parvinder_20043 >----------------
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]   from pom.xml
[INFO] --------------------------------[ jar ]---------------------------------
[INFO]
[INFO] --- clean:3.2.0:clean (default-clean) @ Parvinder_20043 ---
[INFO] ------------------------------------------------------------------------
[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]
[INFO] ----------------< parvinder.automation:Parvinder_20043 >----------------
[INFO] Building Parvinder_20043 1.0-SNAPSHOT
[INFO]   from pom.xml
[INFO] --------------------------------[ jar ]---------------------------------
[INFO] ------------------------------------------------------------------------
[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\automat
r_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
```