What is Maven?

Maven is a popular open-source build tool developed by the Apache Group to build, publish, and deploy several projects at once for better project management.

What is a Dependency in Maven?

Dependency means you edit the file pom.xml and after adding all the dependencies under dependencies tag the jar files for all the dependencies are automatically downloaded and are added to the java project.

If one dependency depends on another dependency the jar file for all the related dependency are also added to the java project.

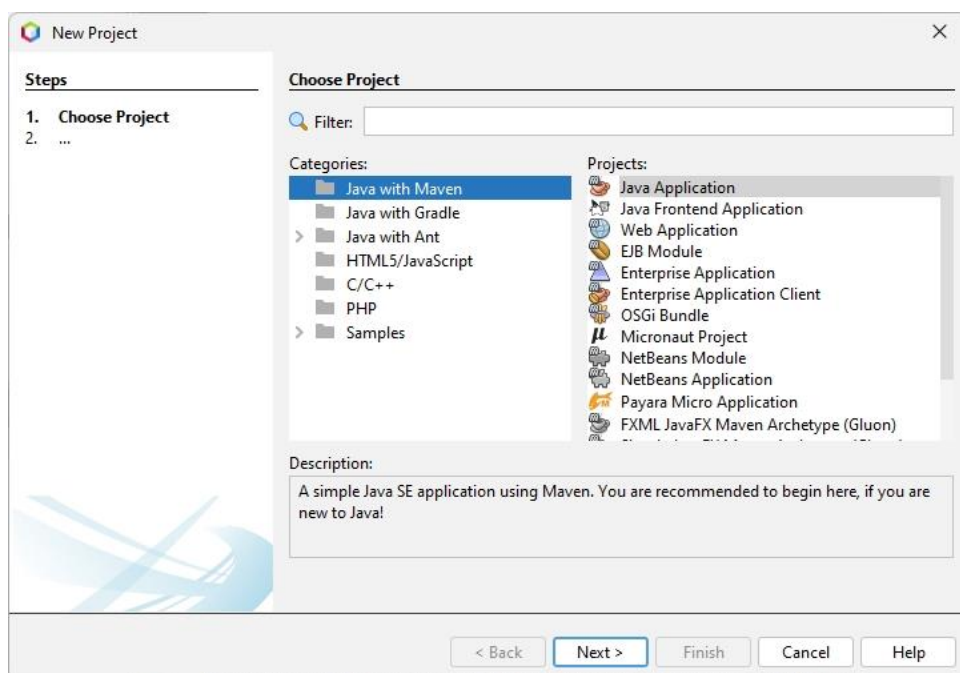Following are the simple ways to create a maven project and add dependency to it.

dependency information can be taken from https://mvnrepository.com/

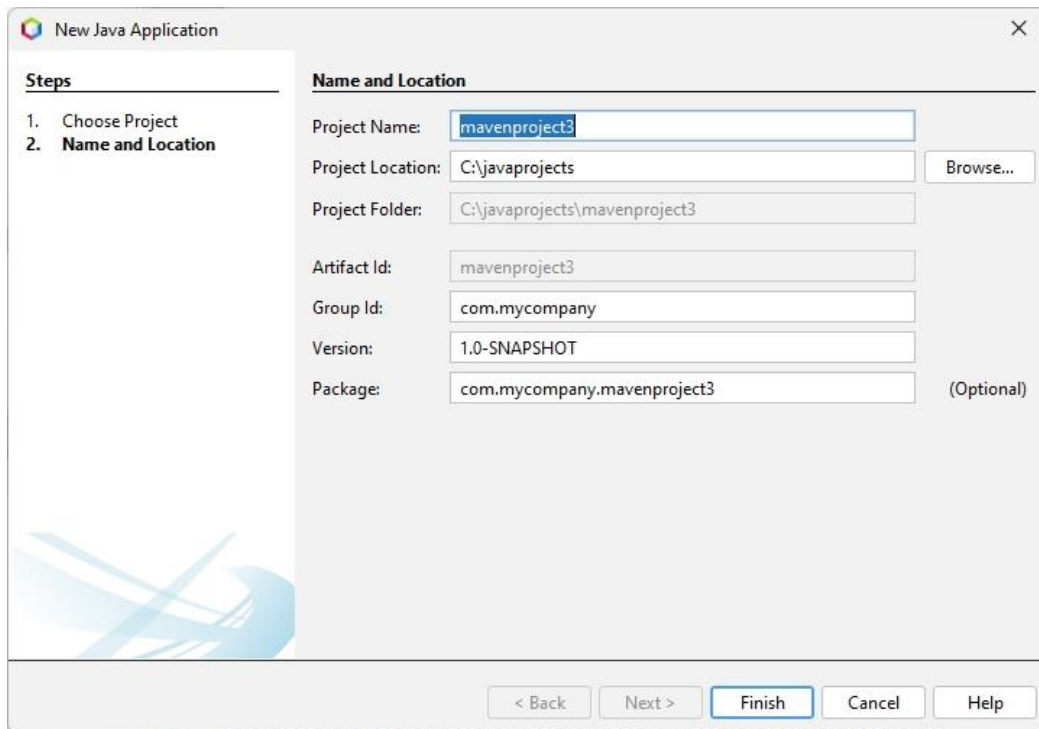First of all we will create a maven project in java using netbeans

Start netbeans

Go to File -> New Project

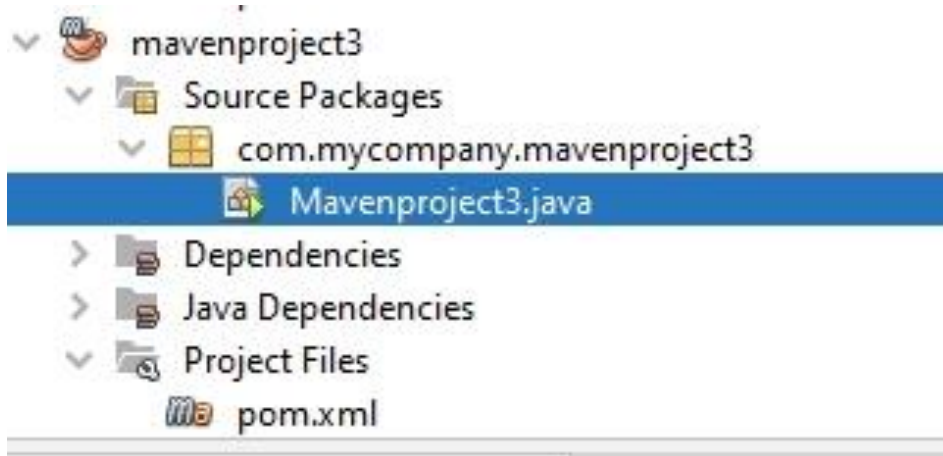Following window will appear

Click on Next

Following window will appear

Click on Finish

A Java Maven Project will created with name mavenproject3

See the following image

Open pom.xml

and go to web site https://mvnrepository.com/

mvnrepository contains dependency information for all the java library developed by apache foundation

in this article we will connect mysql with java maven project.

to find mysql connector dependency in mvn repository

see the following image

When you will click on search you will get all the dependency information related for mysql.

Click on Search

You will get the following output

Click on MySQL Connector/J

You will get the following output

Click on 8.0.33 to get the dependency information about the latest mysql java connector.

When you will click on 8.0.33 you will get the following output.

```
Maven  Gradle  Gradle (Short)  Gradle (Kotlin)  SBT  Ivy  Grape  Leiningen  Buildr

<!-- https://mvnrepository.com/artifact/com.mysql/mysql-connector-j -->
<dependency>
    <groupId>com.mysql</groupId>
    <artifactId>mysql-connector-j</artifactId>
    <version>8.0.33</version>
</dependency>

☑ Include comment with link to declaration
```

Now in pom.xml file add a tag <dependencies> under <project> tag.

and inside dependencies tag paste the following code.

<dependency>

  <groupId>com.mysql</groupId>

  <artifactId>mysql-connector-j</artifactId>

  <version>8.0.33</version>

</dependency>

Now we have to write the java code to connect to mysql.

Here is the java code.

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.Statement;

/**

 *

 * @author raman

 */

public class Mavenproject2 {

  public static void main(String[] args) {

    try {

        String driverName = "com.mysql.jdbc.Driver";

```
                Class.forName(driverName);

String url ="jdbc:mysql://127.0.0.1:3306/contacts";

Statement stmt;

                int rs;

                Connection con =DriverManager.getConnection(url,"root", "");

                    // Create a connection to the database




                stmt = con.createStatement();

                    rs = stmt.executeUpdate("insert into contacts values('raman','raman
address','3434545','raman@abcg.com')");

                    System.out.println("Contact Record Inserted");

                    }

                    catch(Exception e)

                    {

                    System.out.println(e.toString());

                    }

    }

}
```

Now when you will click on Build option in the right click options of maven project the project will be complied using maven.

and you will see the following output.

```
Output - Build (mavenproject2) ×

 --- maven-resources-plugin:2.6:resources (default-resources) @ mavenproject2 ---
 Using 'UTF-8' encoding to copy filtered resources.
 skip non existing resourceDirectory C:\javaprojects\mavenproject2\src\main\resources

 --- maven-compiler-plugin:3.1:compile (default-compile) @ mavenproject2 ---
 Nothing to compile - all classes are up to date

 --- maven-resources-plugin:2.6:testResources (default-testResources) @ mavenproject2 ---
 Using 'UTF-8' encoding to copy filtered resources.
 skip non existing resourceDirectory C:\javaprojects\mavenproject2\src\test\resources

 --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ mavenproject2 ---
 Nothing to compile - all classes are up to date

 --- maven-surefire-plugin:2.12.4:test (default-test) @ mavenproject2 ---

 --- maven-jar-plugin:2.4:jar (default-jar) @ mavenproject2 ---
 Building jar: C:\javaprojects\mavenproject2\target\mavenproject2-1.0-SNAPSHOT.jar

 --- maven-install-plugin:2.4:install (default-install) @ mavenproject2 ---
 Installing C:\javaprojects\mavenproject2\target\mavenproject2-1.0-SNAPSHOT.jar to C:\Users\raman\.m2\repository\com\my
 Installing C:\javaprojects\mavenproject2\pom.xml to C:\Users\raman\.m2\repository\com\mycompany\mavenproject2\1.0-SNAP
 ------------------------------------------------------------------------
 BUILD SUCCESS
 ------------------------------------------------------------------------
 Total time:  1.397 s
 Finished at: 2023-05-26T10:15:31+02:00
```

Now run the maven project and you will see the following output

```
Output - Run (mavenproject2) ×                                                                                    -

 cd C:\javaprojects\mavenproject2; "JAVA_HOME=C:\\Program Files\\Java\\jdk-19" cmd /c "\"C:\\Program Files\\NetBeans-15\\netbean
 Running NetBeans Compile On Save execution. Phase execution is skipped and output directories of dependency projects (with Comp
 Scanning for projects...

 --------------------< com.mycompany:mavenproject2 >--------------------
 Building mavenproject2 1.0-SNAPSHOT
 -------------------------------[ jar ]---------------------------------

 --- exec-maven-plugin:3.0.0:exec (default-cli) @ mavenproject2 ---
 Loading class `com.mysql.jdbc.Driver'. This is deprecated. The new driver class is `com.mysql.cj.jdbc.Driver'. The driver is au
 Contact Record Inserted
 ------------------------------------------------------------------------
 BUILD SUCCESS
 ------------------------------------------------------------------------
 Total time:  1.285 s
 Finished at: 2023-05-26T10:16:33+02:00
 ------------------------------------------------------------------------
```

In this article we have inserted a record in mysql through a java project compiled with open source
maven build tool.