

Task 1: Build Lifecycle

Demonstrate the use of Maven lifecycle phases (clean, compile, test, package, install, deploy) by executing them on a sample project and documenting what happens in each phase.

```
public class MavenLifecycleDemo {

    public static void main(String[] args) {
        try {
            System.out.println("Executing Maven lifecycle phases...");

            // Clean phase
            executeCommand("mvn clean");

            // Compile phase
            executeCommand("mvn compile");

            // Test phase
            executeCommand("mvn test");

            // Package phase
            executeCommand("mvn package");

            // Install phase
            executeCommand("mvn install");

            // Deploy phase (if needed, configure your remote repository in pom.xml)
            // executeCommand("mvn deploy");

            System.out.println("Maven lifecycle phases completed successfully.");
        } catch (Exception e) {
            e.printStackTrace();
        }
    }

    private static void executeCommand(String command) throws Exception {
        System.out.println("Executing command: " + command);
        Process process = Runtime.getRuntime().exec(command);
        int exitCode = process.waitFor();
        if (exitCode == 0) {
            System.out.println("Command executed successfully.");
        }
    }
}
```

```
    } else {  
        System.out.println("Command failed with error code: " + exitCode);  
    }  
}  
}
```