

## WALMART TICKET SERVICE HOMEWORK

In this project, I have developed a Java application to implement a simple ticket service that facilitates discovery, temporary hold and final reservation of seats within a high-demand performance venue.

### **Assumptions:**

I made few assumptions to develop this application. They are:

1. No seat number preference to the user. User doesn't have facility to choose seat numbers because of high-demand, seats will be hold based on the availability.
2. Seats can't be hold in multiple levels in a single transaction. Suppose if the user want 5 seats, 2 in Level-1 and 3 in Level-2. This type of transaction can't be performed. First 2 seats are to be hold in Level-1 and then 3 seats in Level-2 in two different transactions.
3. All the inputs are entered in console and outputs will be displayed in the same.
4. Hold time can be set based on our requirement. It is set to 60 seconds in this application.
5. Once hold is performed user need to save the hold Id to perform reserve operation.
6. If user selected to exit, the transactions performed before this will be erased automatically.

### **Project Requirement:**

1. Eclipse Java EE IDE, Version: Mars.1 Release (4.5.1)
2. Java version 1.8.0\_91 (minimum requirement 1.5)
3. Java™ SE Runtime Environment (Build 1.8.0\_91-b15)
4. JUnit for testing.

### **System Requirements:**

1. Install Java JDK, create JAVA\_HOME variable in environment variables and set the JDK location to JAVA\_HOME. (see Figure 1)
2. Install maven, create M2\_HOME variable in environment variables and set the maven path to M2\_HOME. (see Figure 1)

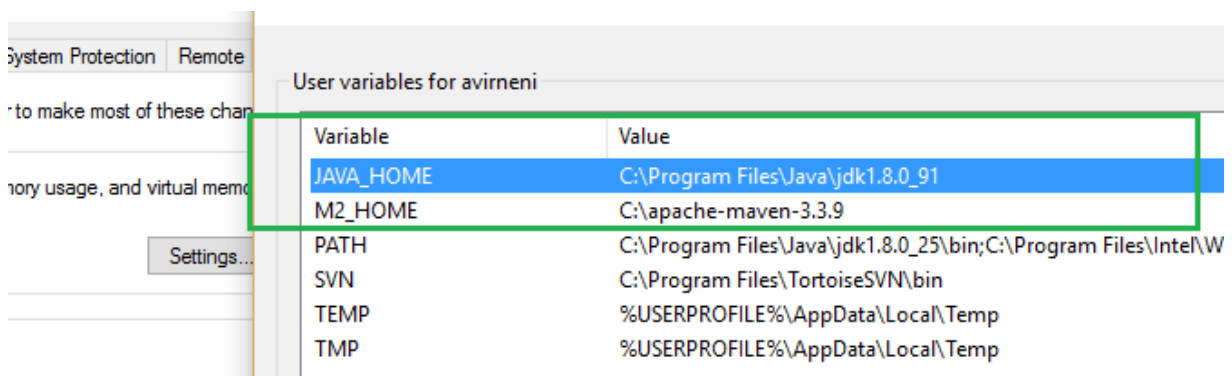


Figure 1 JAVA\_HOME & M2\_HOME

## Design:

### Class diagram

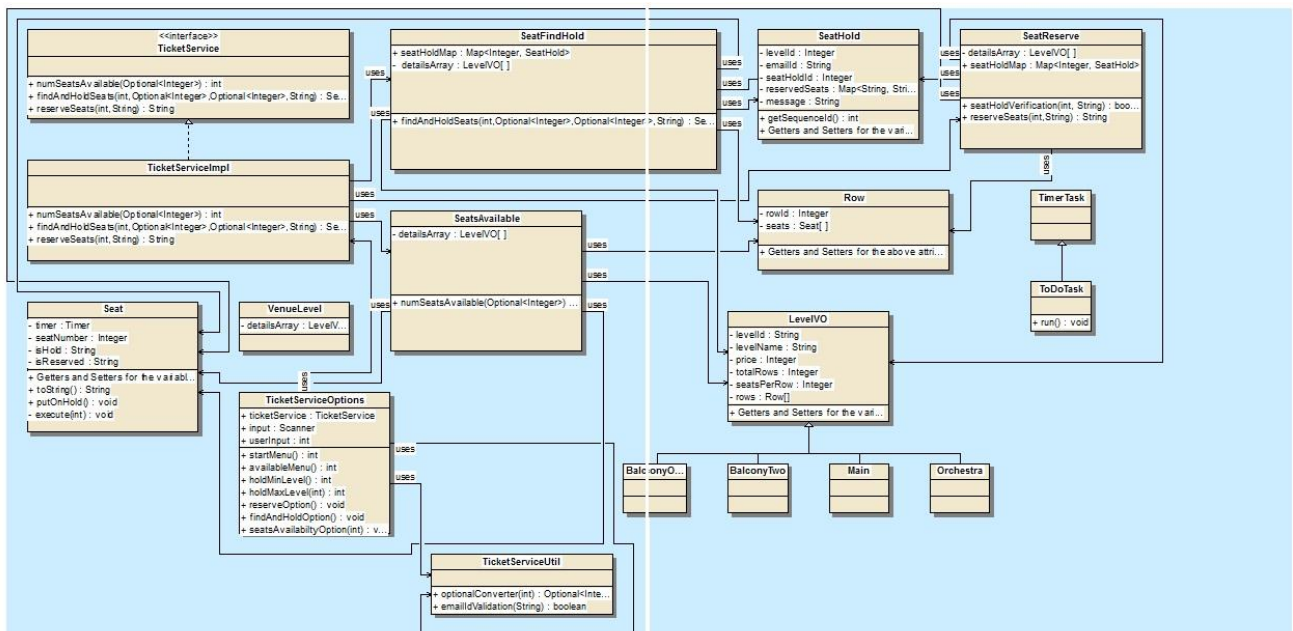


Figure 2 Class Diagram

### Description:

- The execution starts from 'UserStart' class which contains the main method. This method has the console displayed statements to prompt the user to enter the choice.
- Once the input is received, based on the input, methods in the TicketServiceOptions will invoke.
- Validations are performed on the user input in TicketServiceOptions class.
- TicketService interface is implemented by the TicketServiceImpl class. TicketServiceImpl class uses SeatFindHold class, SeatAvailable class, SeatReserve class.
- Once validations are passed, based on the requirement the methods in TicketServiceImpl are called, in which methods in SeatFindHold class, SeatAvailable class, SeatReserve class are invoked.
- TicketServiceException class is used to display the errors in customized messages.
- TicketServiceUtil class is used to provide utilities like datatype conversion and email validation.
- ToDoTask class extends TimerTask to hold the seat for a given time.
- Time to hold the seat is to set in "com.project.ticket.service.model.Seat" package, putOnHold method.
- com.project.ticket.service.model package contains all the model classes to persist the data.
- All the level details are set in "com.project.ticket.service.model.VenueLevel" class.
- Unit testing is performed using JUnit.

## Coding:

Based on the design, packages and classes are developed using Java programming language, Maven build tool.

Figure 3 shows the packages, classes and pom.xml details present in this project.

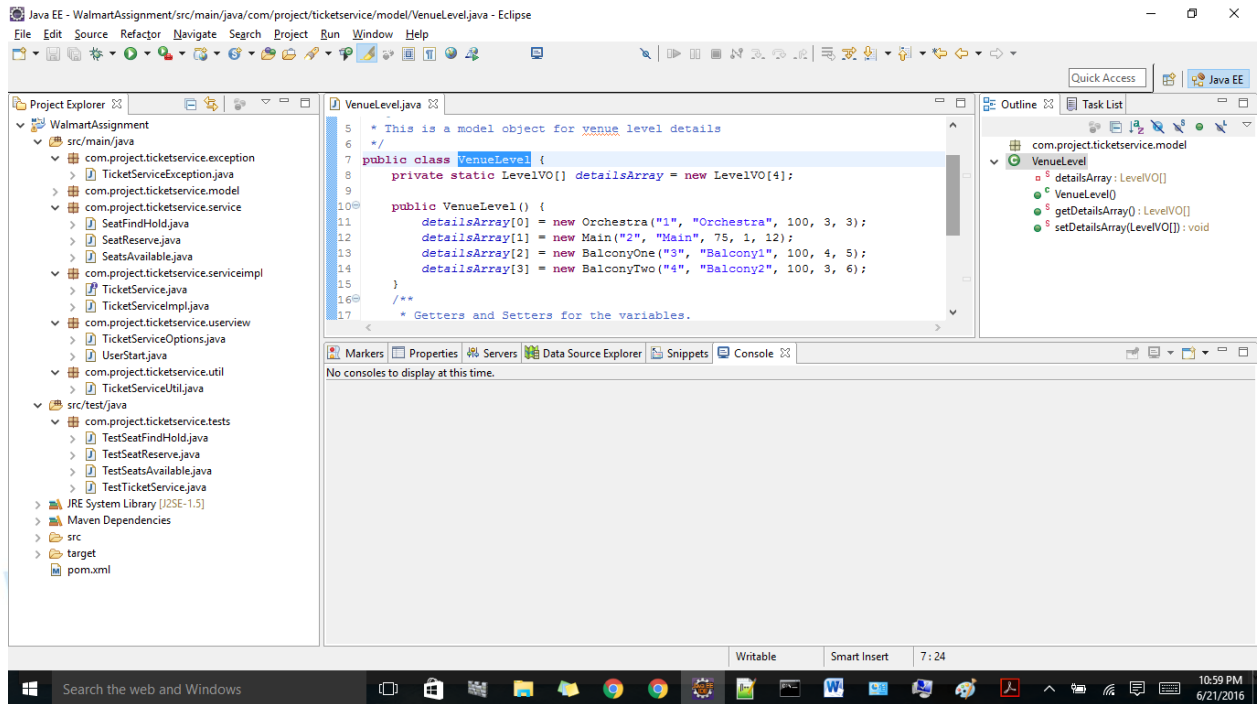


Figure 3 Project development environment

## Testing:

Testing is performed using Junit framework. I have written four test case classes for this project as shown in Figure 4. I have covered best case and worst cases in the test cases. I have tested the project with these test cases and the project is working as expected.

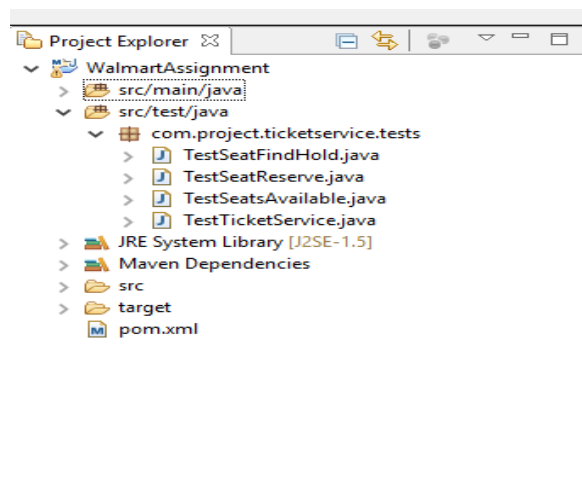


Figure 4 Test case classes

## Project Build:

I have used Apache Maven build tool to build this project. I have followed the below steps to build this project.

1. Change the directory to point our project's pom.xml

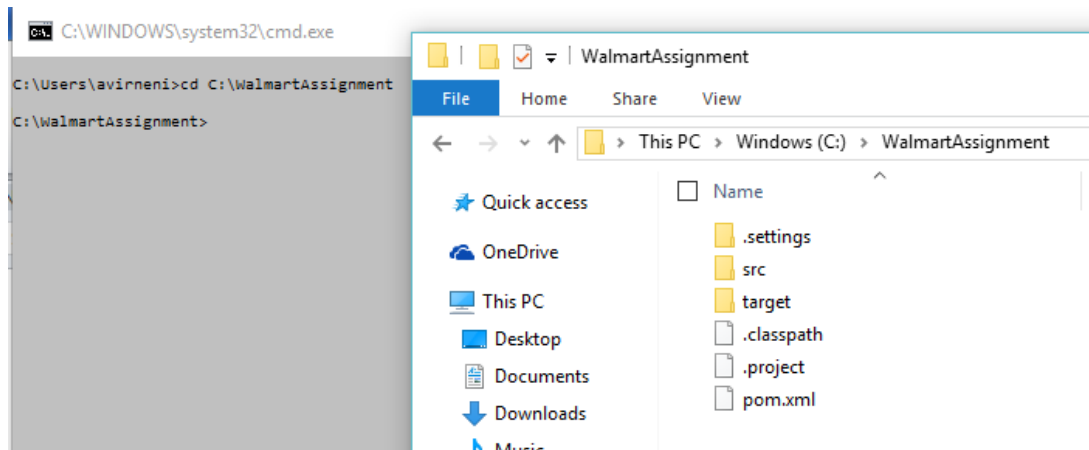


Figure 5 Change Directory

2. Execute mvn clean

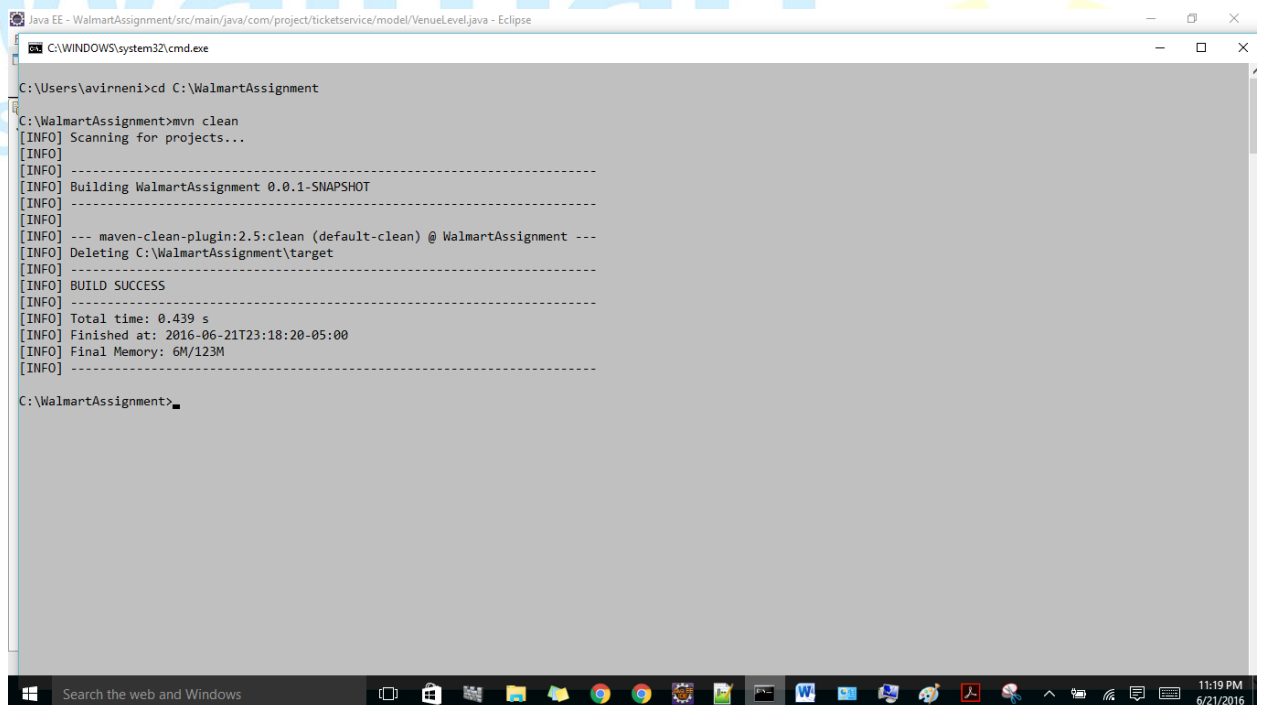


Figure 6 mvn clean

### 3. Execute mvn validate



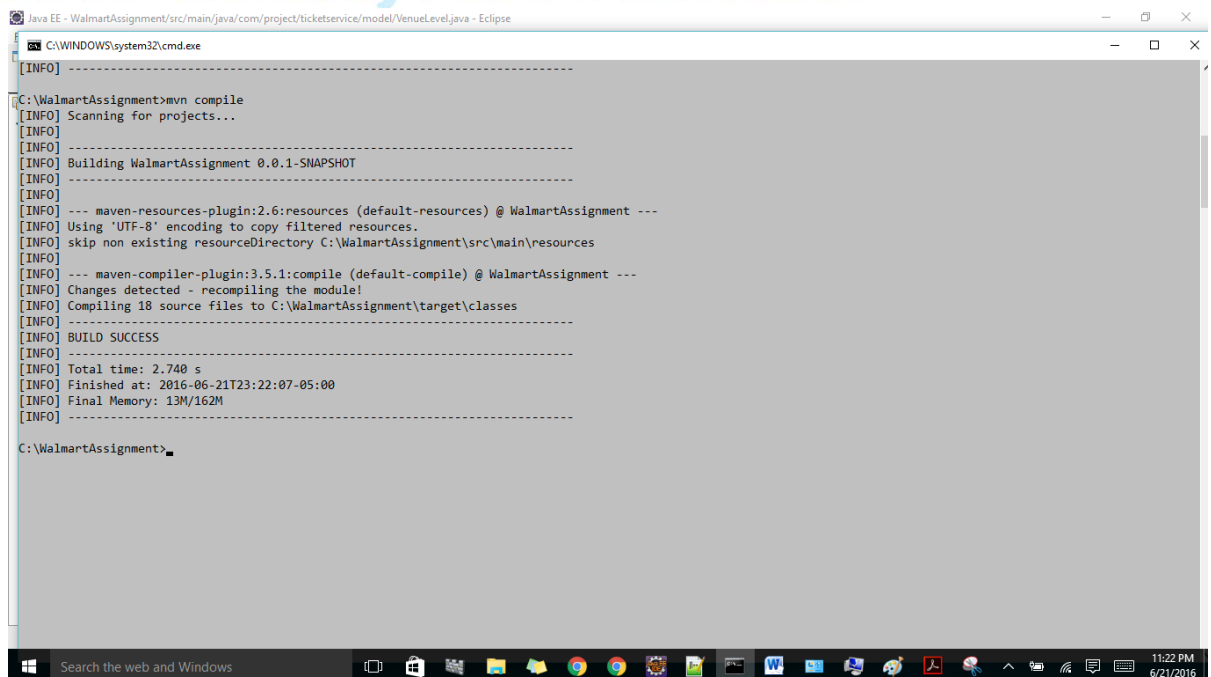
```
Java EE - WalmartAssignment/src/main/java/com/project/ticket/service/model/VenueLevel.java - Eclipse
C:\WINDOWS\system32\cmd.exe
[INFO] -----
[INFO] Total time: 0.439 s
[INFO] Finished at: 2016-06-21T23:18:20-05:00
[INFO] Final Memory: 6M/123M
[INFO] -----

C:\WalmartAssignment>mvn validate
[INFO] Scanning for projects...
[INFO]
[INFO] -----
[INFO] Building WalmartAssignment 0.0.1-SNAPSHOT
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 0.119 s
[INFO] Finished at: 2016-06-21T23:20:44-05:00
[INFO] Final Memory: 5M/123M
[INFO] -----

C:\WalmartAssignment>
```

Figure 7 mvn validate

### 4. Execute mvn compile



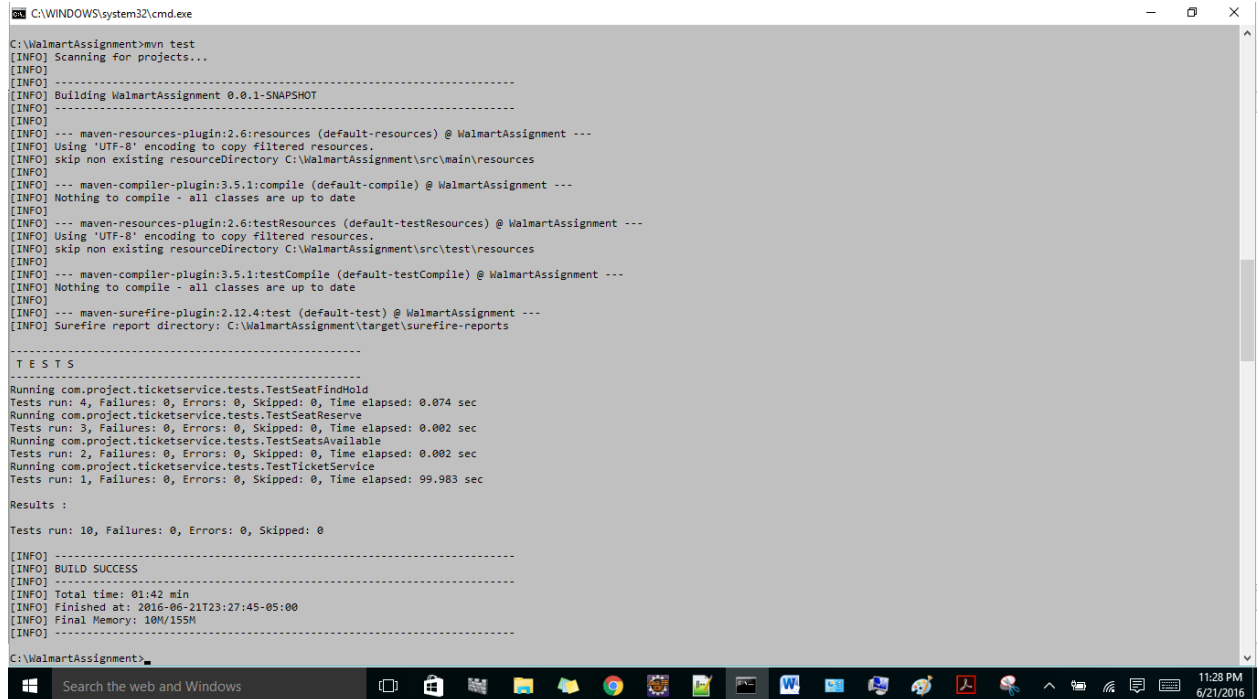
```
Java EE - WalmartAssignment/src/main/java/com/project/ticket/service/model/VenueLevel.java - Eclipse
C:\WINDOWS\system32\cmd.exe
[INFO] -----

C:\WalmartAssignment>mvn compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----
[INFO] Building WalmartAssignment 0.0.1-SNAPSHOT
[INFO] -----
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ WalmartAssignment ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory C:\WalmartAssignment\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.5.1:compile (default-compile) @ WalmartAssignment ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 18 source files to C:\WalmartAssignment\target\classes
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 2.740 s
[INFO] Finished at: 2016-06-21T23:22:07-05:00
[INFO] Final Memory: 13M/162M
[INFO] -----

C:\WalmartAssignment>
```

Figure 8 mvn compile

## 5. Execute mvn test



```

C:\WINDOWS\system32\cmd.exe

C:\WalmartAssignment>mvn test
[INFO] Scanning for projects...
[INFO] Building WalmartAssignment 0.0.1-SNAPSHOT
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ WalmartAssignment ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory C:\WalmartAssignment\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.5.1:compile (default-compile) @ WalmartAssignment ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ WalmartAssignment ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory C:\WalmartAssignment\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.5.1:testCompile (default-testCompile) @ WalmartAssignment ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ WalmartAssignment ---
[INFO] Surefire report directory: C:\WalmartAssignment\target\surefire-reports

-----
T E S T S
-----
Running com.project.ticket.service.tests.TestSeatFindHold
Tests run: 4, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.074 sec
Running com.project.ticket.service.tests.TestSeatReserve
Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.002 sec
Running com.project.ticket.service.tests.TestSeatsAvailable
Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.002 sec
Running com.project.ticket.service.tests.TestTicketService
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 99.983 sec

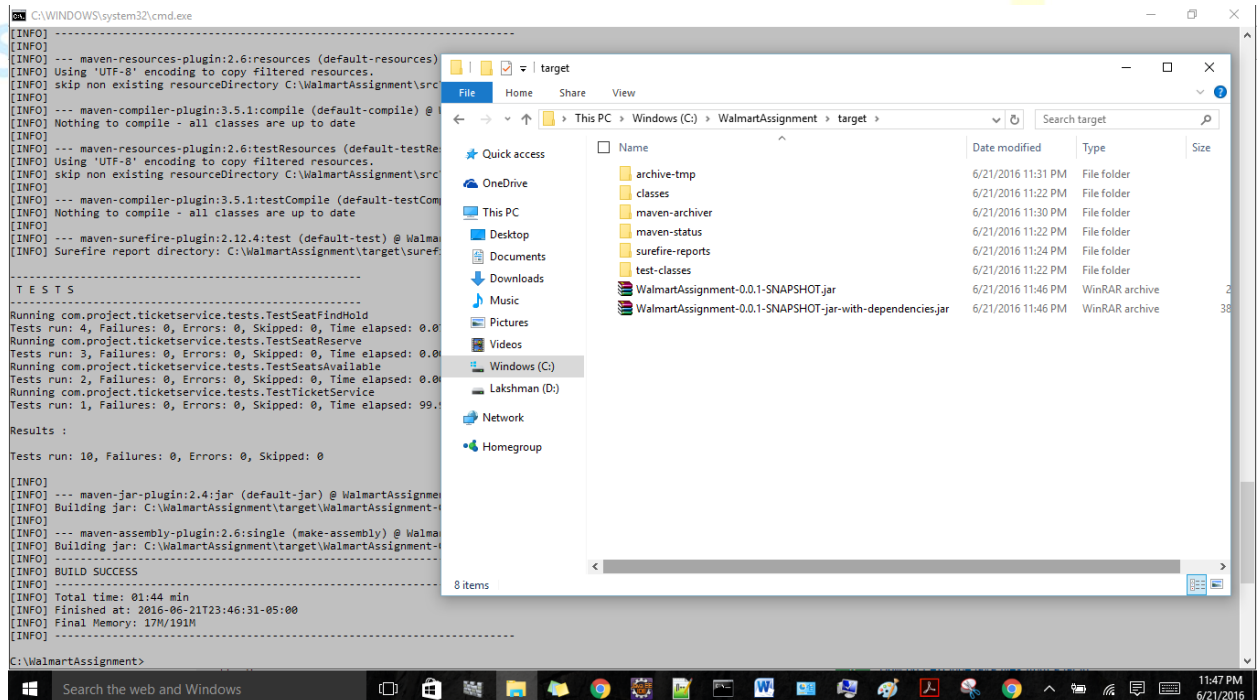
Results :

Tests run: 10, Failures: 0, Errors: 0, Skipped: 0

[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 01:42 min
[INFO] Finished at: 2016-06-21T23:27:45-05:00
[INFO] Final Memory: 10M/155M
[INFO]
C:\WalmartAssignment>
  
```

Figure 9 mvn test

## 6. Execute mvn package



```

C:\WINDOWS\system32\cmd.exe

[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ WalmartAssignment ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory C:\WalmartAssignment\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.5.1:compile (default-compile) @ WalmartAssignment ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ WalmartAssignment ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory C:\WalmartAssignment\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.5.1:testCompile (default-testCompile) @ WalmartAssignment ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ WalmartAssignment ---
[INFO] Surefire report directory: C:\WalmartAssignment\target\surefire-reports

-----
T E S T S
-----
Running com.project.ticket.service.tests.TestSeatFindHold
Tests run: 4, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.074 sec
Running com.project.ticket.service.tests.TestSeatReserve
Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.002 sec
Running com.project.ticket.service.tests.TestSeatsAvailable
Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.002 sec
Running com.project.ticket.service.tests.TestTicketService
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 99.983 sec

Results :

Tests run: 10, Failures: 0, Errors: 0, Skipped: 0

[INFO] --- maven-jar-plugin:2.4:jar (default-jar) @ WalmartAssignment ---
[INFO] Building jar: C:\WalmartAssignment\target\WalmartAssignment-0.0.1-SNAPSHOT.jar
[INFO]
[INFO] --- maven-assembly-plugin:2.6:single (make-assembly) @ WalmartAssignment ---
[INFO] Building jar: C:\WalmartAssignment\target\WalmartAssignment-0.0.1-SNAPSHOT-jar-with-dependencies.jar
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 01:44 min
[INFO] Finished at: 2016-06-21T23:46:31-05:00
[INFO] Final Memory: 17M/191M
[INFO]
C:\WalmartAssignment>
  
```

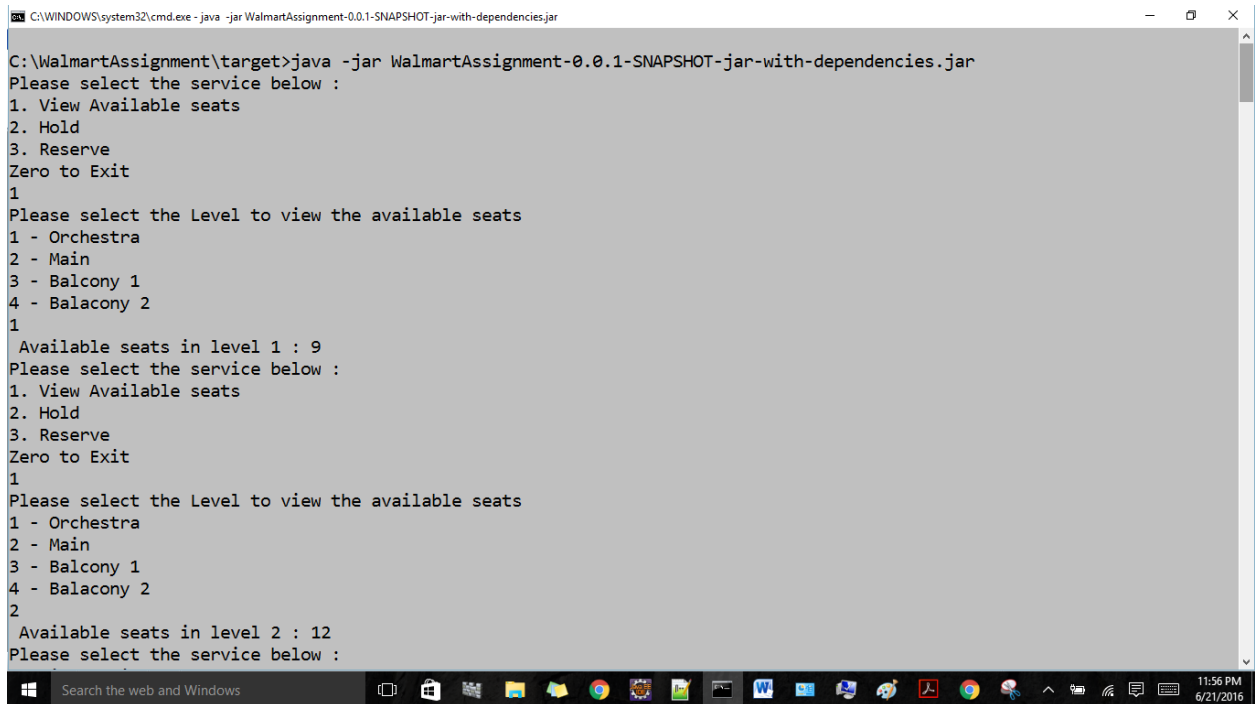
Name	Date modified	Type	Size
archive-tmp	6/21/2016 11:31 PM	File folder	
classes	6/21/2016 11:22 PM	File folder	
maven-archiver	6/21/2016 11:30 PM	File folder	
maven-status	6/21/2016 11:22 PM	File folder	
surefire-reports	6/21/2016 11:24 PM	File folder	
test-classes	6/21/2016 11:22 PM	File folder	
WalmartAssignment-0.0.1-SNAPSHOT.jar	6/21/2016 11:46 PM	WinRAR archive	2
WalmartAssignment-0.0.1-SNAPSHOT-jar-with-dependencies.jar	6/21/2016 11:46 PM	WinRAR archive	38

Figure 10 mvn package

### Start the project:

Now time to use the project. Change the directory to point the jar file formed during build. Execute the jar file with the below command:

```
C:\WalmartAssignment\target>java -jar WalmartAssignment-0.0.1-SNAPSHOT-jar-with-dependencies.jar
```



```
C:\WINDOWS\system32\cmd.exe - java -jar WalmartAssignment-0.0.1-SNAPSHOT-jar-with-dependencies.jar
C:\WalmartAssignment\target>java -jar WalmartAssignment-0.0.1-SNAPSHOT-jar-with-dependencies.jar
Please select the service below :
1. View Available seats
2. Hold
3. Reserve
Zero to Exit
1
Please select the Level to view the available seats
1 - Orchestra
2 - Main
3 - Balcony 1
4 - Balacony 2
1
Available seats in level 1 : 9
Please select the service below :
1. View Available seats
2. Hold
3. Reserve
Zero to Exit
1
Please select the Level to view the available seats
1 - Orchestra
2 - Main
3 - Balcony 1
4 - Balacony 2
2
Available seats in level 2 : 12
Please select the service below :
```

Figure 11 Project Screen