

KP : Java Spring MVC

Tuesday, February 18, 2020 11:26 AM

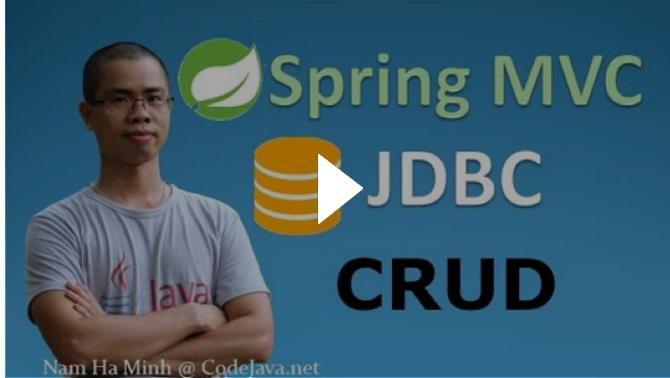
KPJavaSpring

Eclipse

- Install Eclipse for creating KPJavaSpring.

YouTube

- Follow tutorial Java Spring MVC <https://www.youtube.com/watch?v=-wddkBQZuPs>
- [Java Spring MVC and JDBC CRUD Tutorial \(Web App using Eclipse, Tomcat, MySQL and JUnit\)](#)
-



YouTube

- Follow tutorial Java Spring MVC <https://www.youtube.com/watch?v=-wddkBQZuPs>
- [Java Spring MVC and JDBC CRUD Tutorial \(Web App using Eclipse, Tomcat, MySQL and JUnit\)](#)

Steps

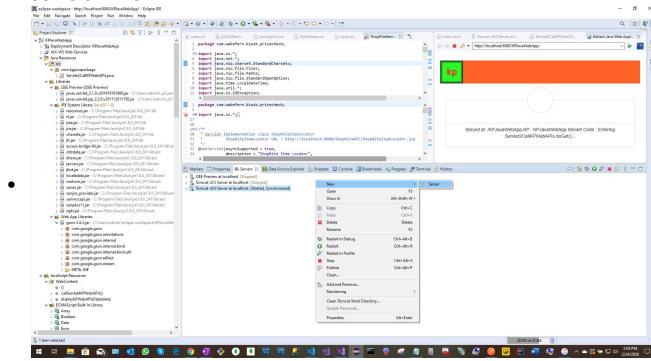
- Create MySQL Database
- Create Java Spring MVC Project
- Dependencies
- Code Model Class
- Code DAO Classes + Unit Tests
- Configure Spring MVC Dispatcher Servlet
- Configure Spring MVC
- Code Spring Controller
- Code JSPs
- Test the Java Spring MVC Application & JDBC

Technologies Used

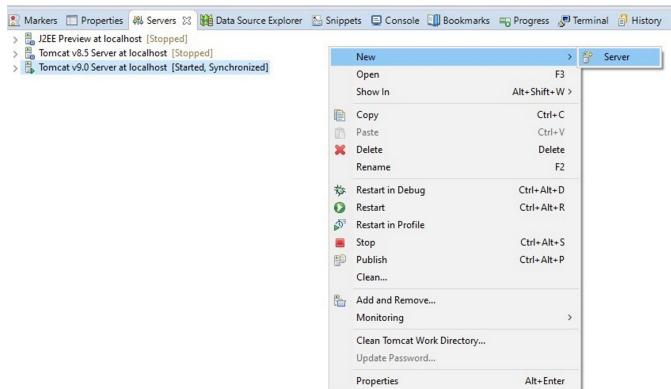
- Spring Framework 5 (Spring MVC + Spring JDBC)
- Java Servlet
- Java Server Pages (JSP)
- Java Server Pages (JSP) Standard Tag Library (JSTL)
- MySQL Connector Java (JDBC Driver)
- Maven
- JUnit

Eclipse : IBM Liberty WAS Installation

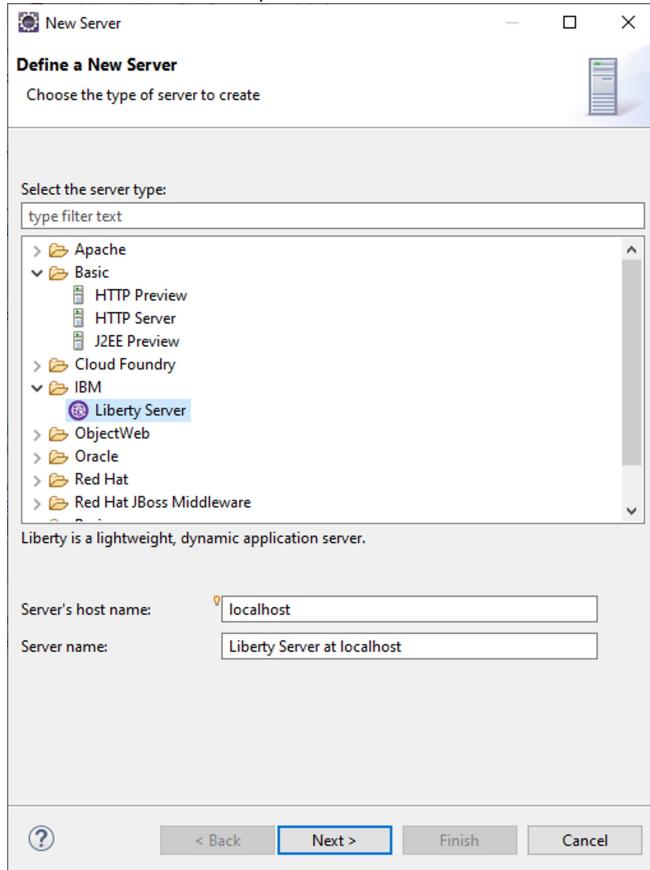
- Install IBM Liberty WAS Installation
- Servers -> New

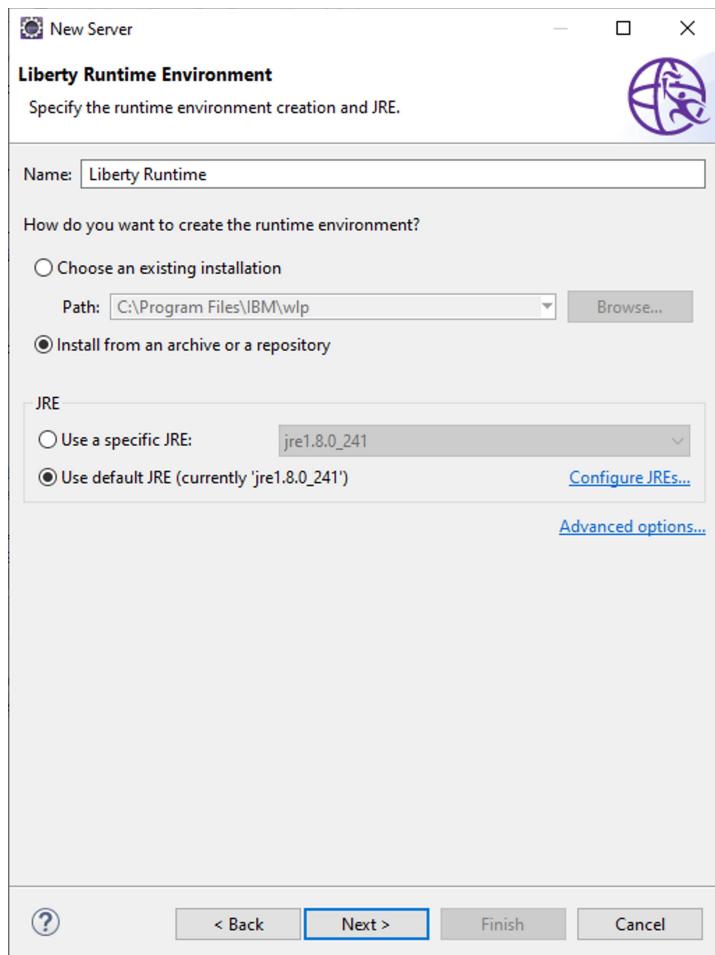


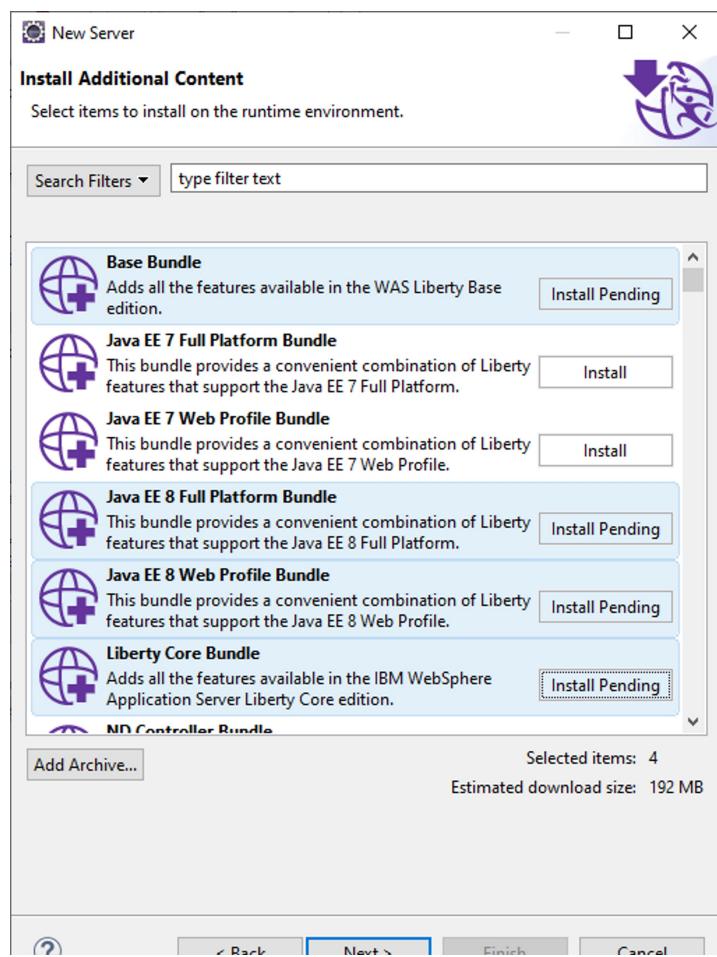
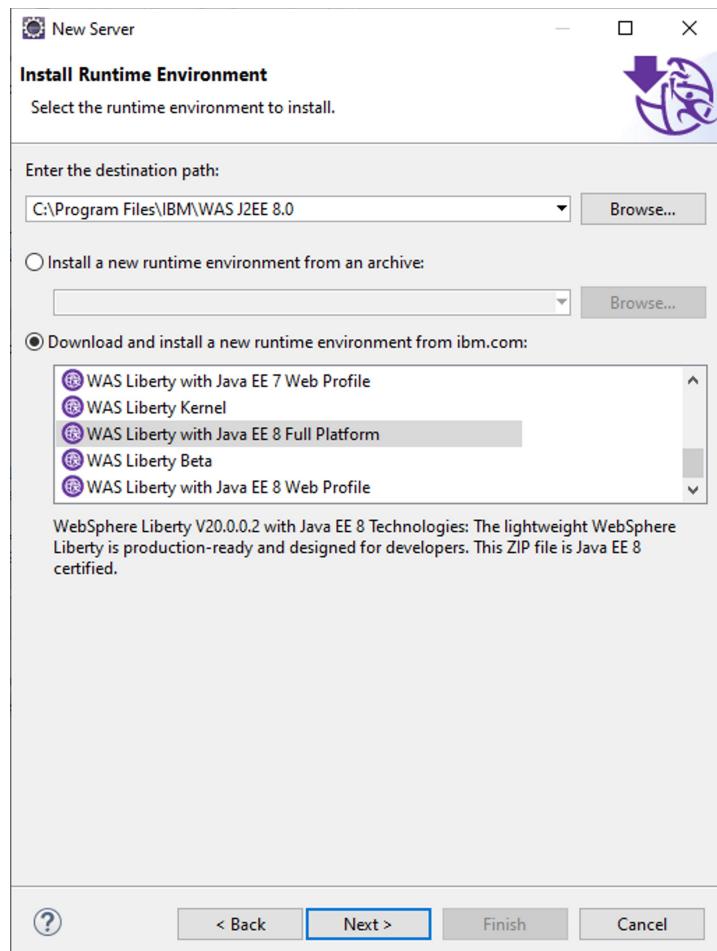
- Servers -> New

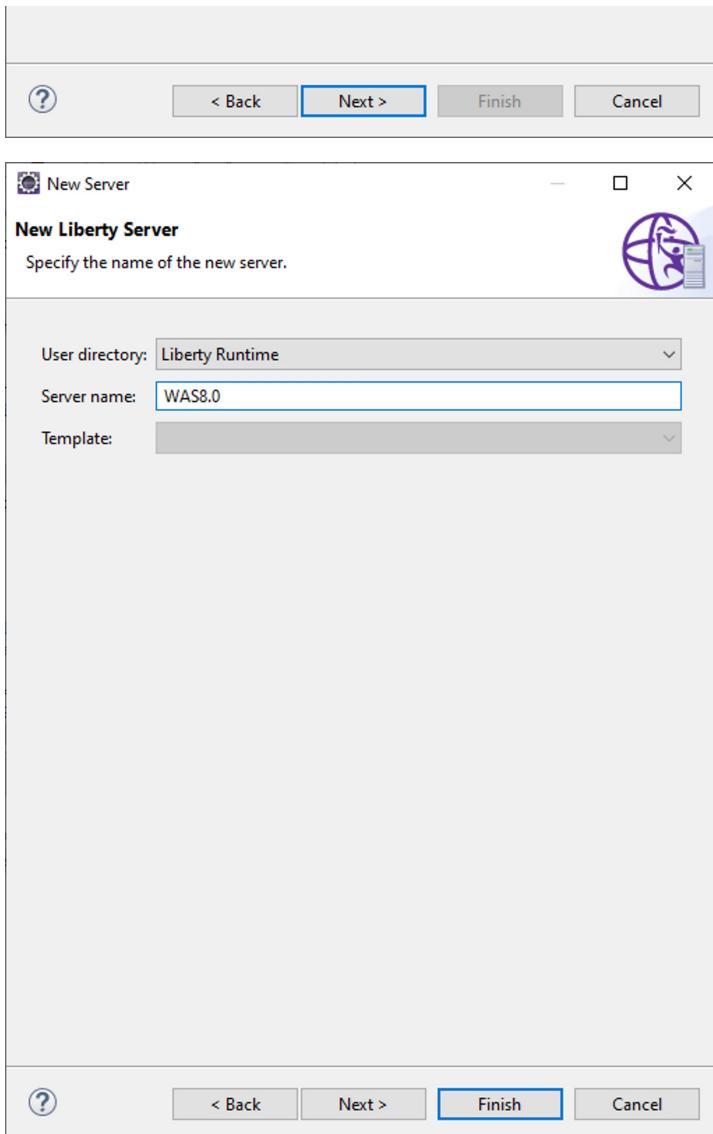


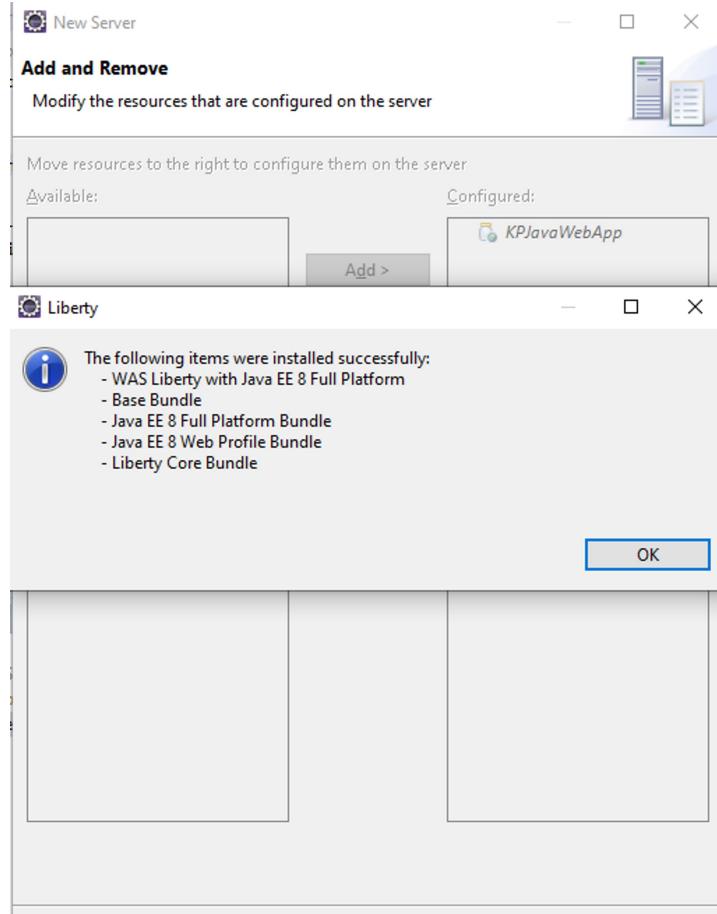
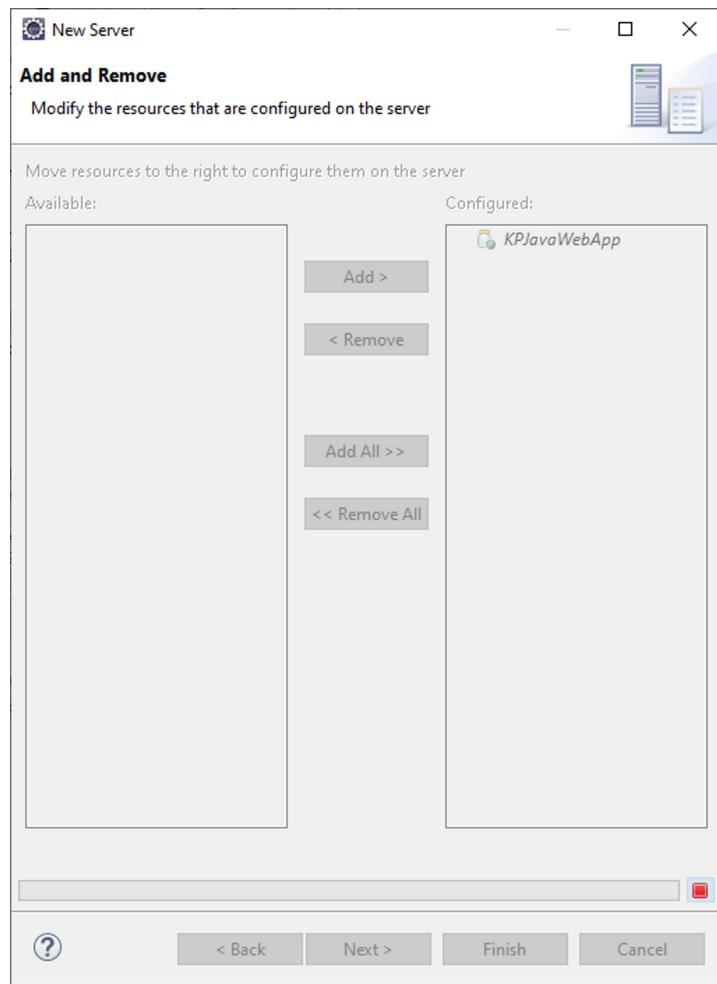
- Server -> New -> IBM -> Liberty Server ->

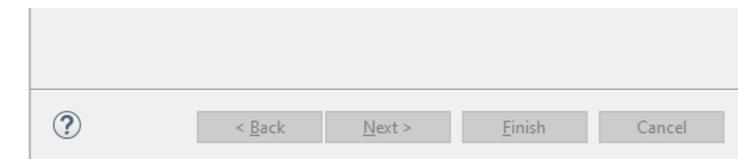






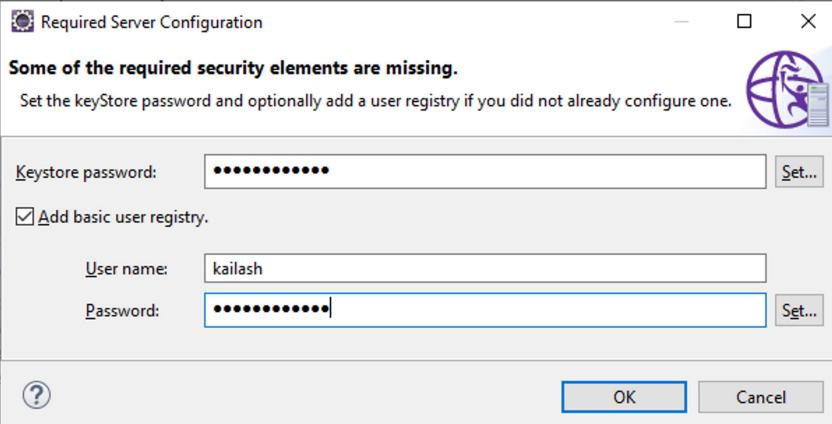






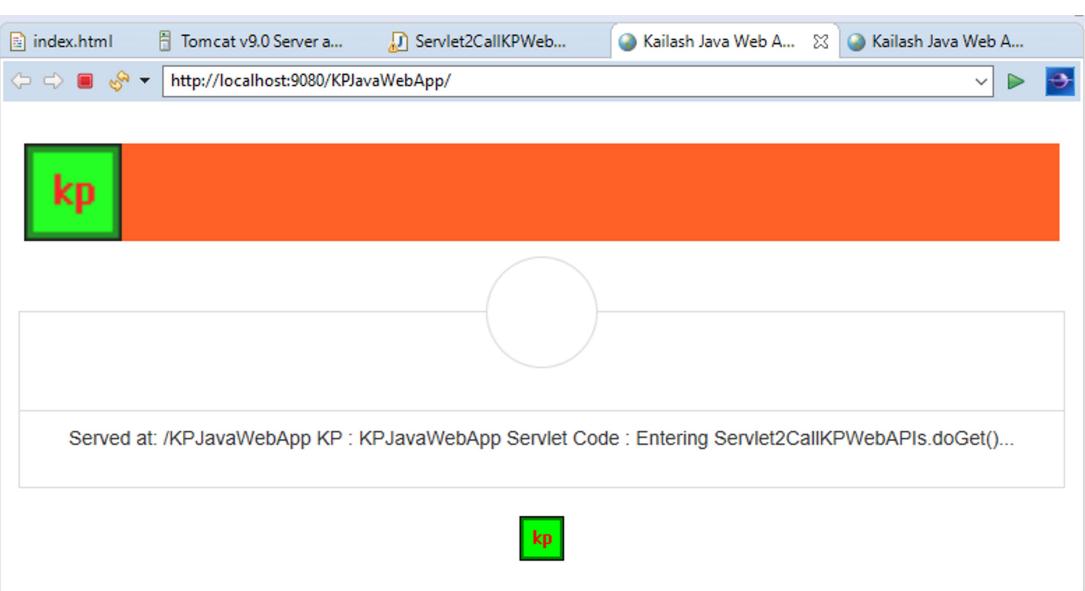
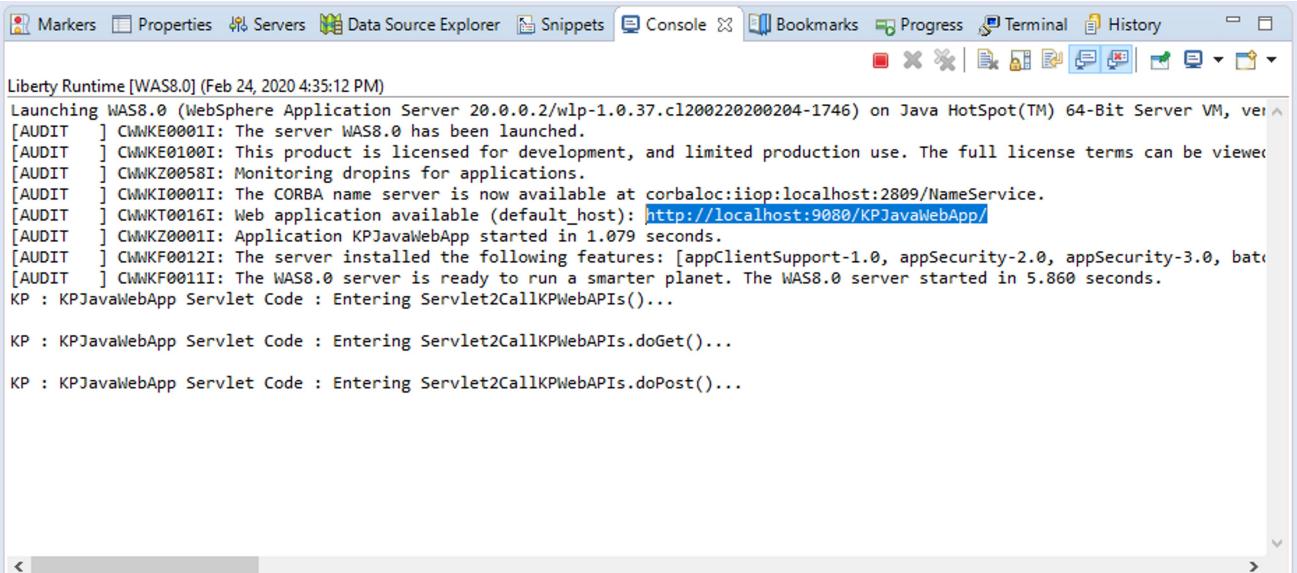
- WAS Key Store Password

- User name : kailash
 - Password : (kSk)

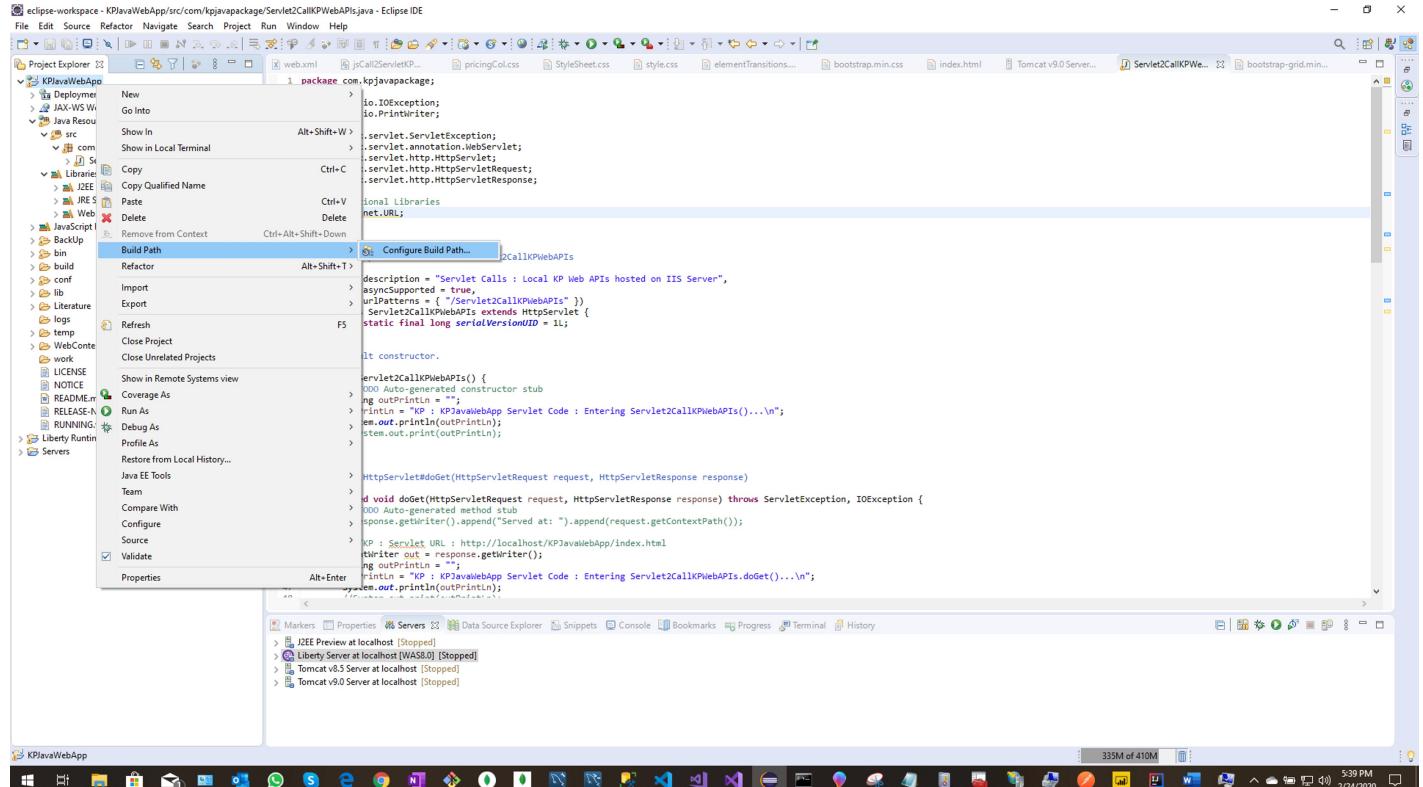


- IBM WAS 8.0 Localhost

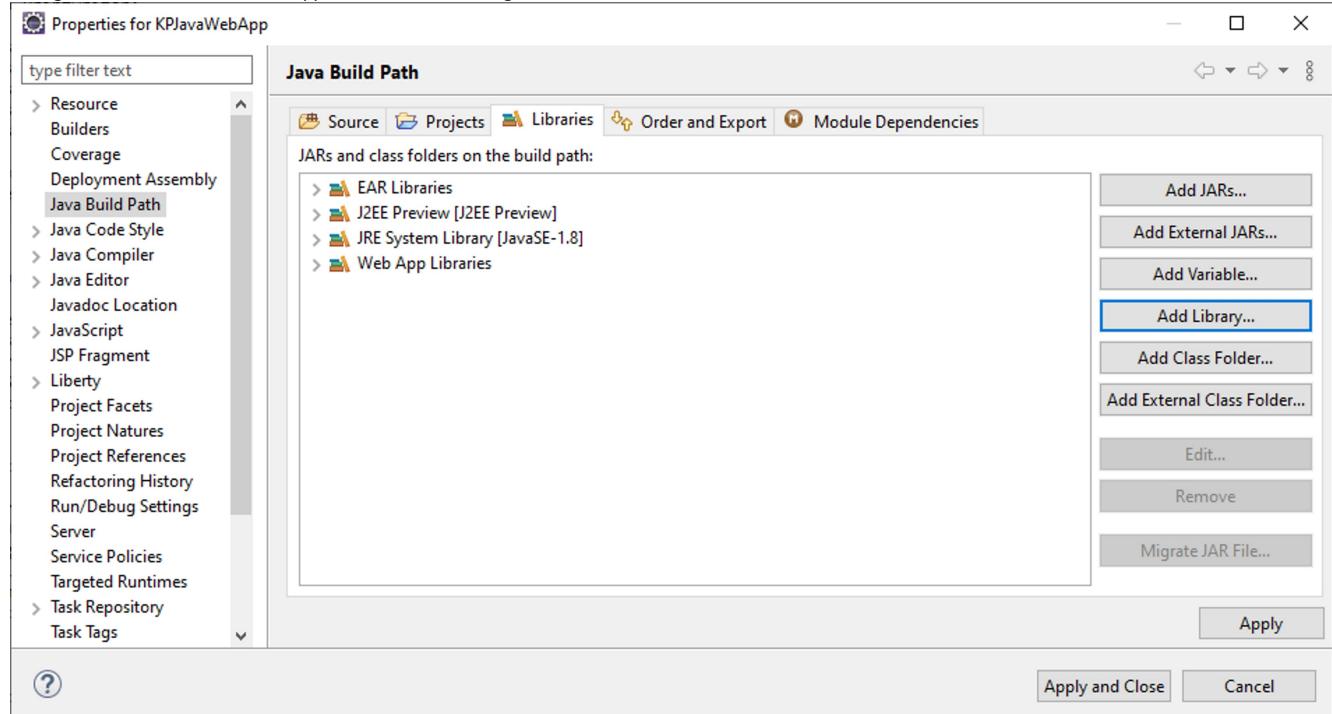
- URL : <http://localhost:9080/KPJavaWebApp/>

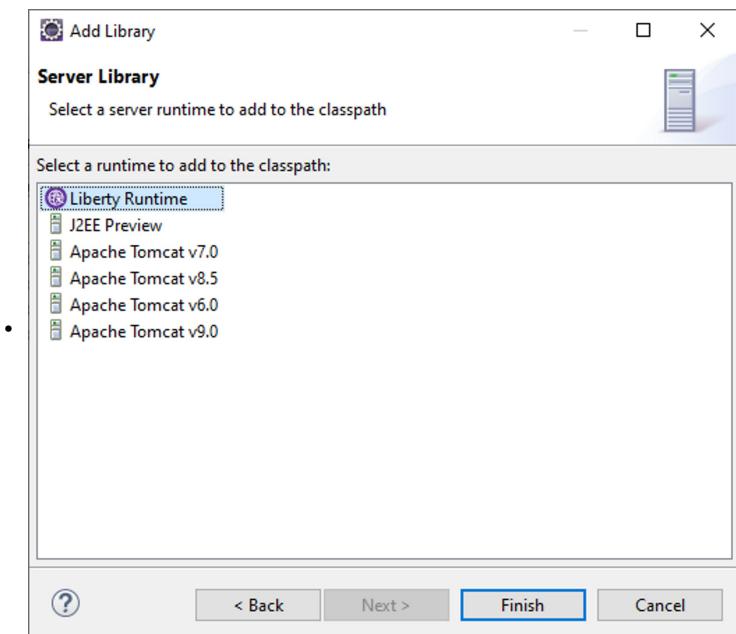
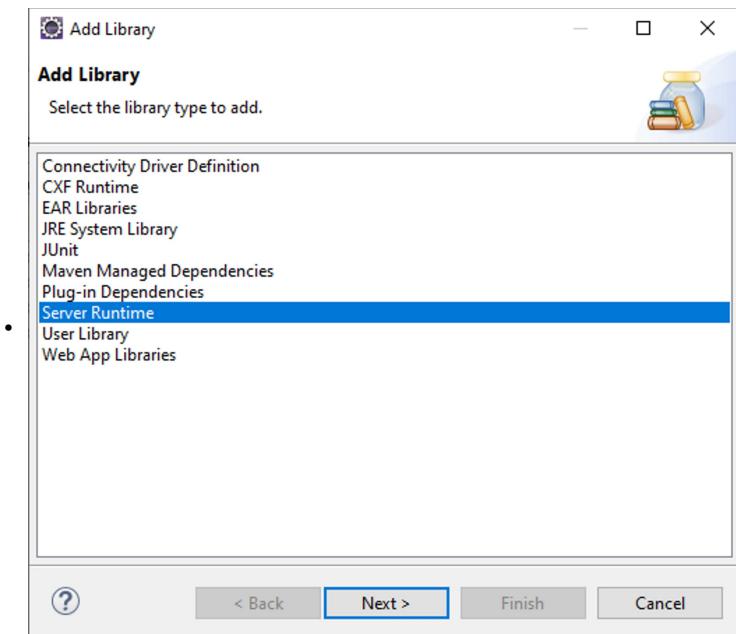


IBM WAS 8.0 - Configure Build Path

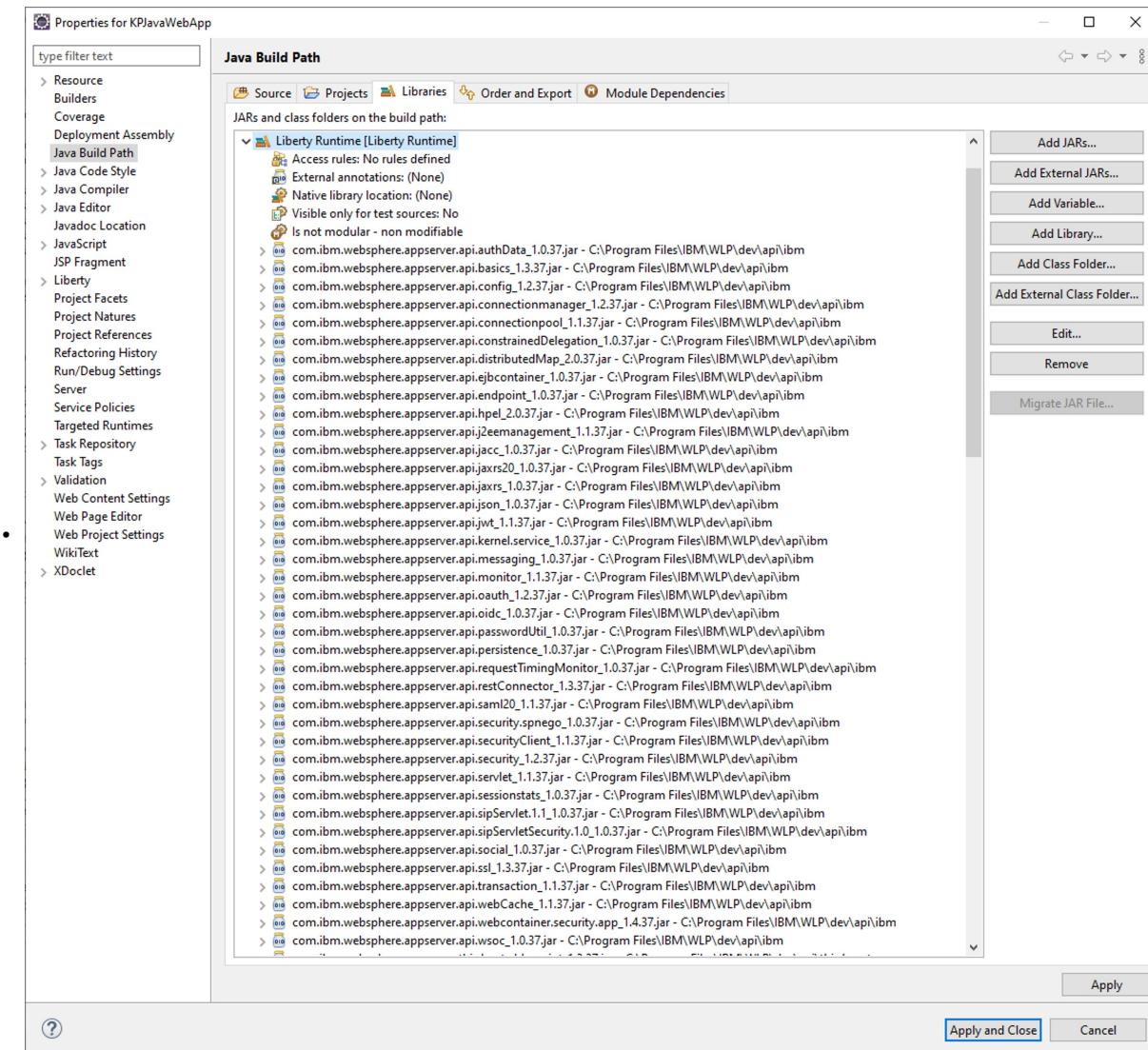


Configure Build Path : KPJavaWebApp -> Build Path -> Configure Build Path





- Configure Build Path : KPJavaWebApp -> Build Path -> Configure Build Path -> Add Library -> Server Runtime -> Liberty Runtime



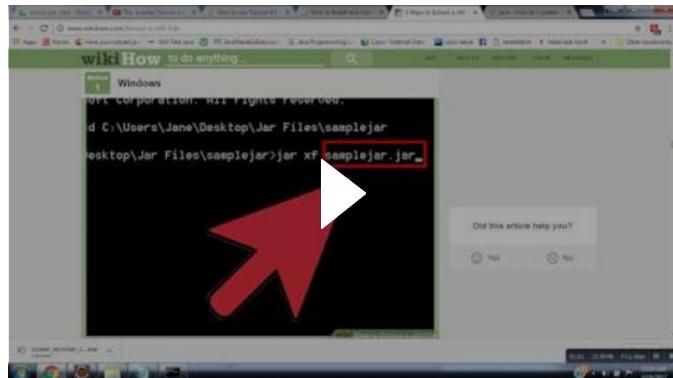
Eclipse : Tomcat Server Installation

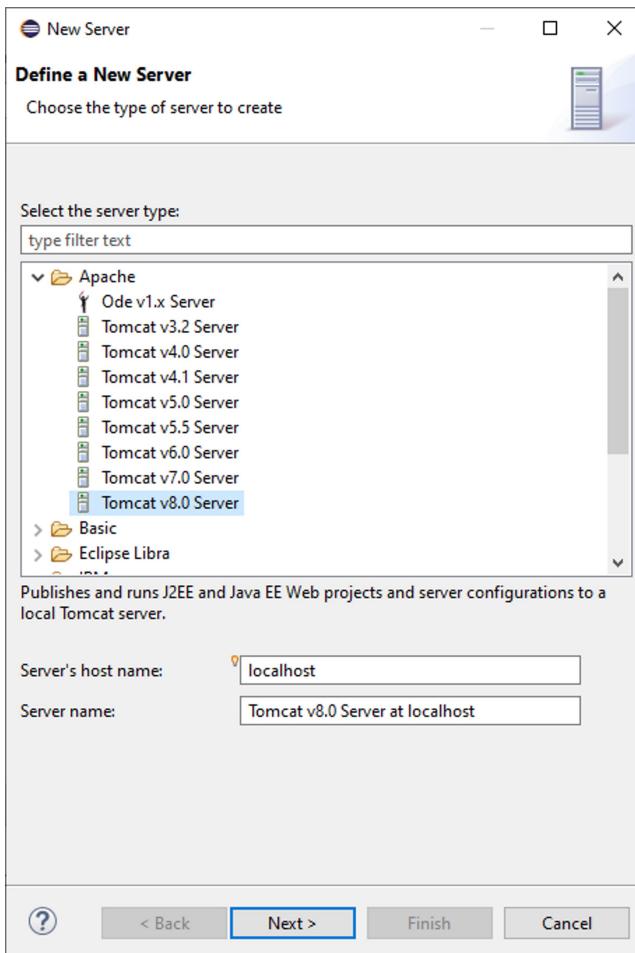
C:\Program Files\Apache Software Foundation\Tomcat 9.0\lib\catalina

<https://stackoverflow.com/questions/8453543/extracting-jar-file-with-command-line>

<https://www.youtube.com/watch?v=GtdFeTggd8Q>

The Apache Tomcat installation at this directory is version 8 5 9 A Tomcat 8 0 installation is exp





```

Administrator: Developer Command Prompt for VS 2017

Directory of C:\Program Files\Apache Software Foundation\Tomcat 9.0\lib
02/19/2020 02:33 PM <DIR> .
02/19/2020 02:33 PM <DIR> ..
12/07/2019 11:43 AM 12,986 annotations-api.jar
02/19/2020 02:33 PM <DIR> catalina
12/07/2019 11:43 AM 54,227 catalina-ant.jar
12/07/2019 11:43 AM 123,330 catalina-ha.jar
12/07/2019 11:43 AM 62,859 catalina-ssi.jar
12/07/2019 11:43 AM 78,187 catalina-storeconfig.jar
12/07/2019 11:43 AM 346,284 catalina-tribes.jar
12/07/2019 11:43 AM 2,884,633 ecj-4.13.jar
12/07/2019 11:43 AM 90,212 el-api.jar
12/07/2019 11:43 AM 169,274 jasper-el.jar
12/07/2019 11:43 AM 562,812 jasper.jar
12/07/2019 11:43 AM 27,960 jaspic-api.jar
12/07/2019 11:43 AM 63,221 jsp-api.jar
12/07/2019 11:43 AM 283,292 servlet-api.jar
12/07/2019 11:43 AM 11,234 tomcat-api.jar
12/07/2019 11:43 AM 891,240 tomcat-coyote.jar
12/07/2019 11:43 AM 319,669 tomcat-dbcp.jar
12/07/2019 11:43 AM 69,253 tomcat-i18n-cs.jar
12/07/2019 11:43 AM 75,209 tomcat-i18n-de.jar
12/07/2019 11:43 AM 104,196 tomcat-i18n-es.jar
12/07/2019 11:43 AM 165,534 tomcat-i18n-fr.jar
12/07/2019 11:43 AM 186,461 tomcat-i18n-ja.jar
12/07/2019 11:43 AM 188,334 tomcat-i18n-ko.jar
12/07/2019 11:43 AM 50,029 tomcat-i18n-pt-BR.jar
12/07/2019 11:43 AM 38,871 tomcat-i18n-ru.jar
12/07/2019 11:43 AM 125,397 tomcat-i18n-zh-CN.jar
12/07/2019 11:43 AM 149,580 tomcat-jdbc.jar
12/07/2019 11:43 AM 36,021 tomcat-jni.jar
12/07/2019 11:43 AM 213,546 tomcat-util-scan.jar
12/07/2019 11:43 AM 189,103 tomcat-util.jar
12/07/2019 11:43 AM 231,393 tomcat-websocket.jar
12/07/2019 11:43 AM 39,410 websocket-api.jar
31 File(s) 7,843,757 bytes
3 Dir(s) 324,001,832,960 bytes free

C:\Program Files\Apache Software Foundation\Tomcat 9.0\lib>

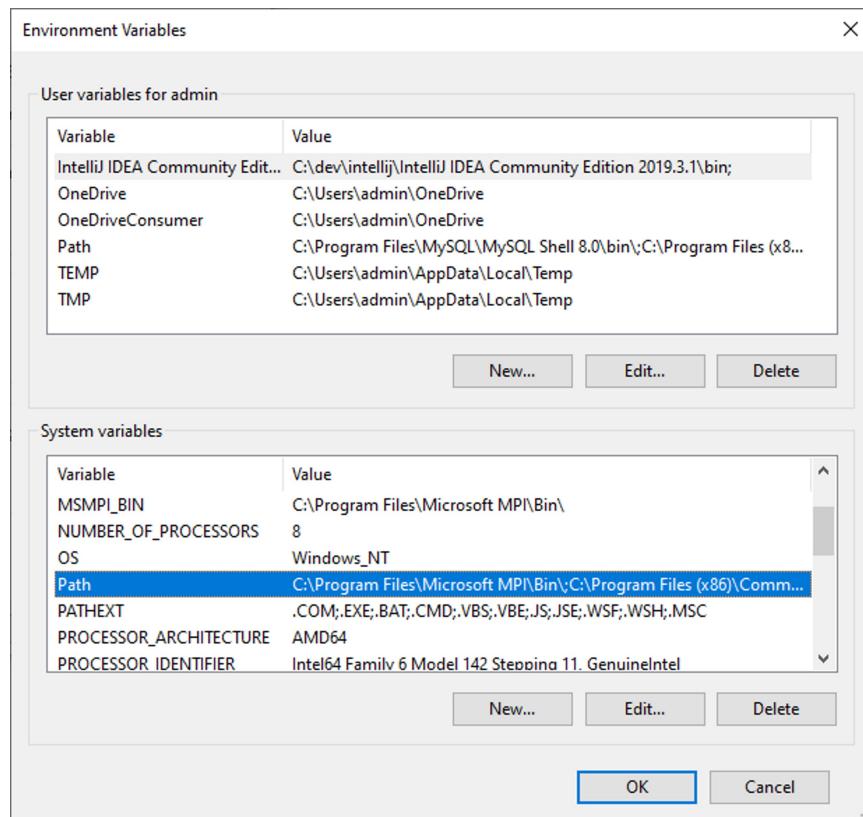
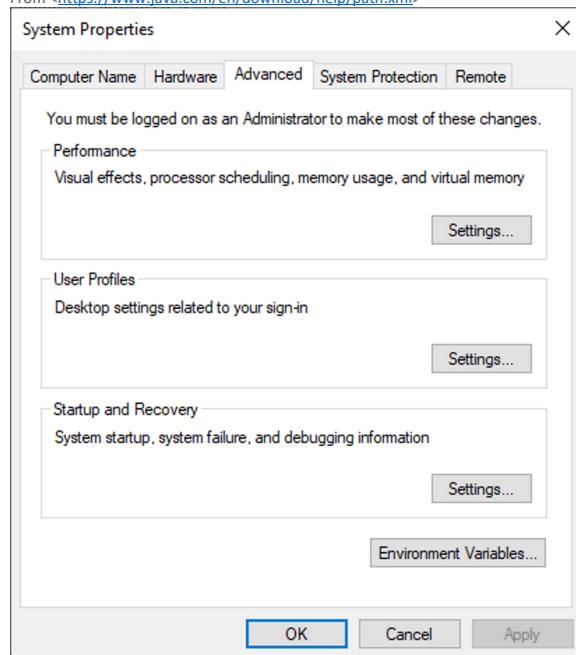
```

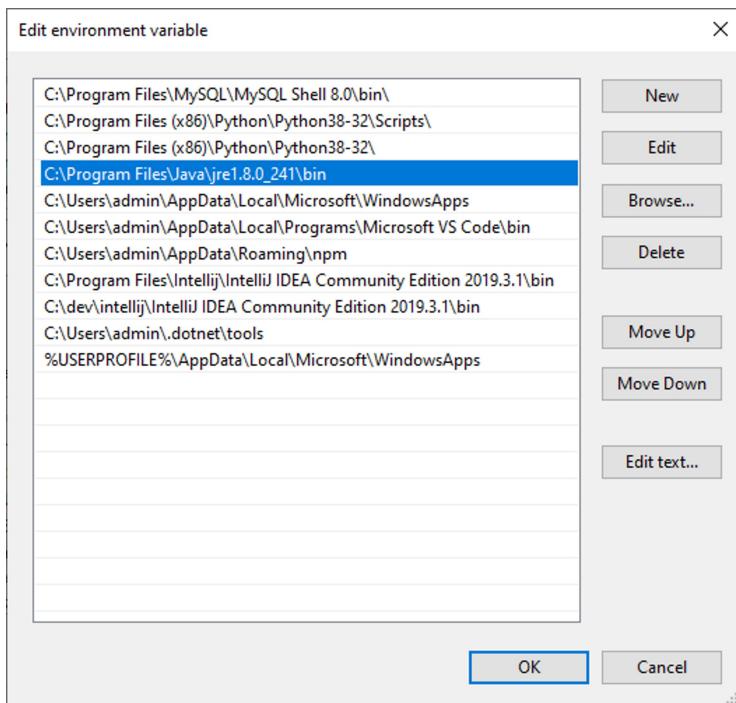
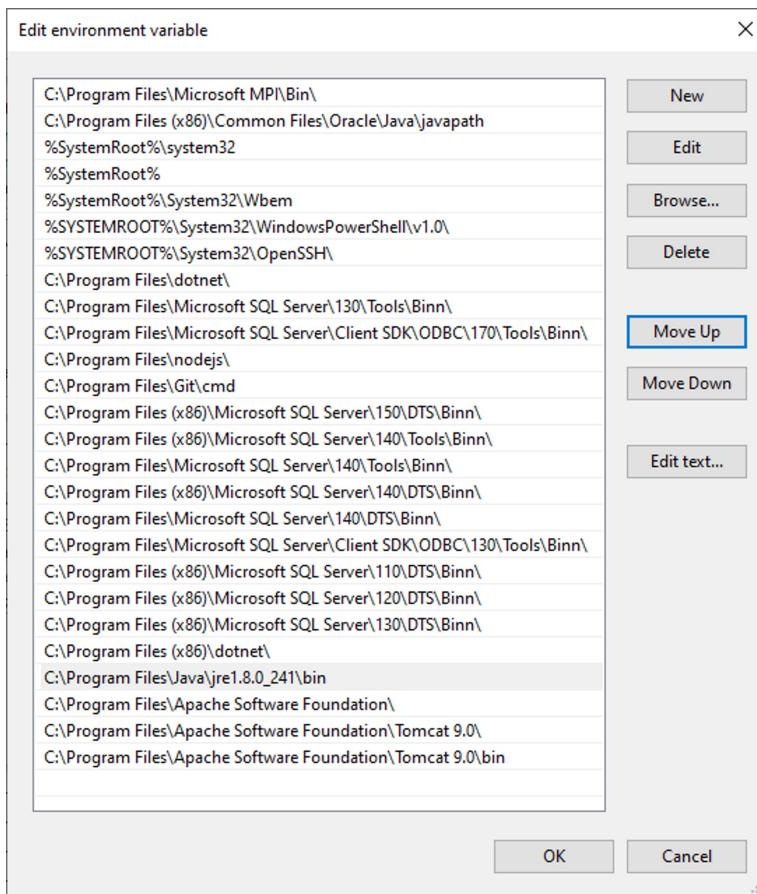
Windows 10 and Windows 8

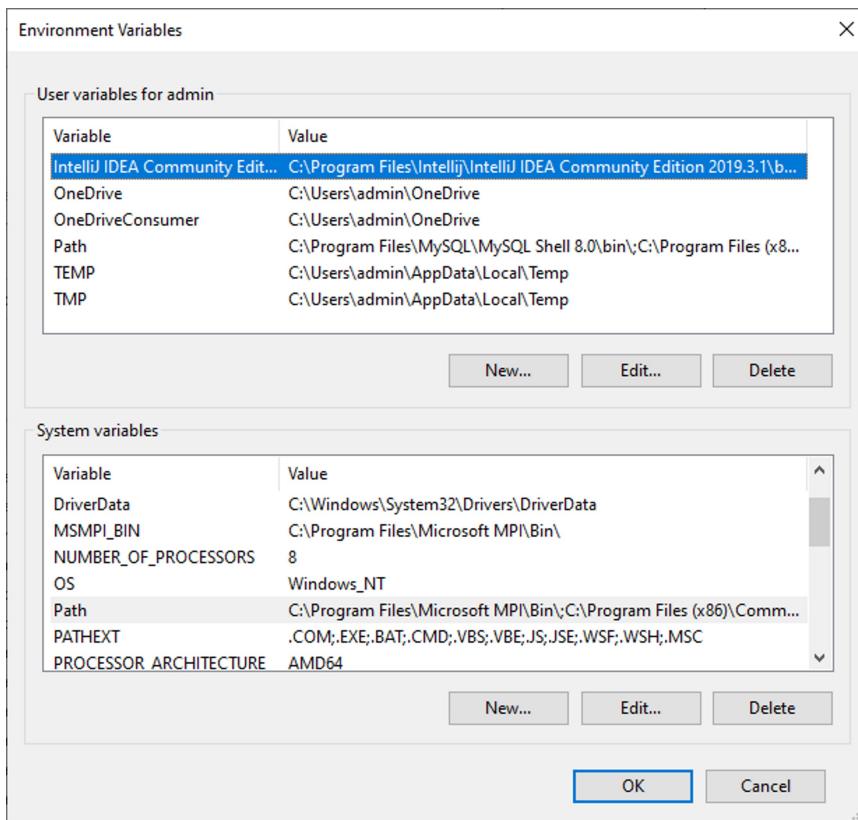
- In Search, search for and then select: System (Control Panel)

2. Click the **Advanced system settings** link.
3. Click **Environment Variables**. In the section **System Variables**, find the PATH environment variable and select it. Click **Edit**. If the PATH environment variable does not exist, click **New**.
4. In the **Edit System Variable** (or **New System Variable**) window, specify the value of the PATH environment variable. Click **OK**. Close all remaining windows by clicking **OK**.
5. Reopen Command prompt window, and run your java code.

From <<https://www.java.com/en/download/help/path.xml>>

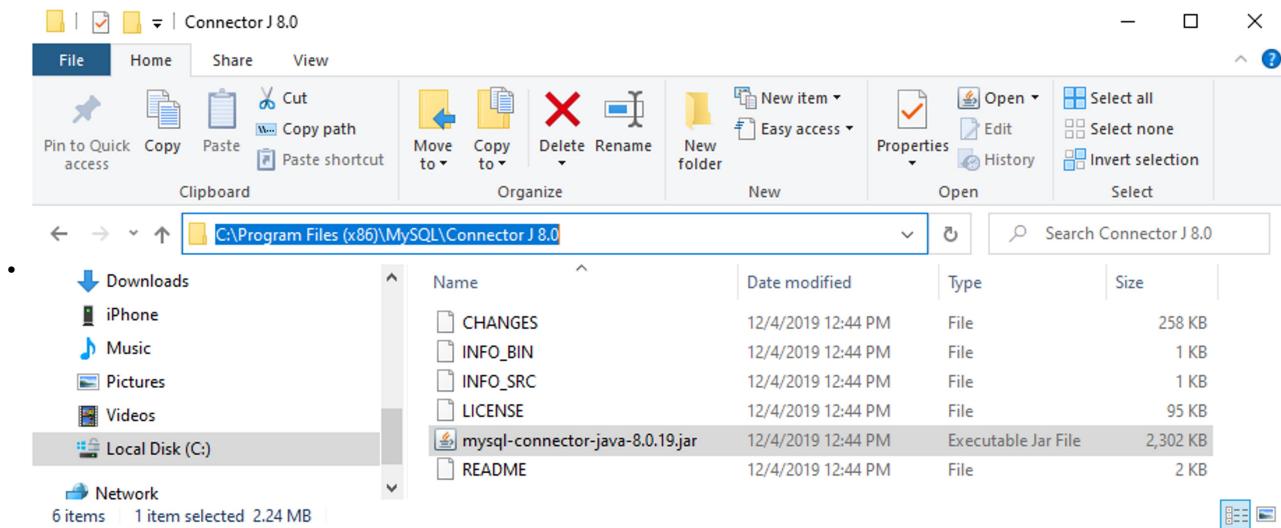






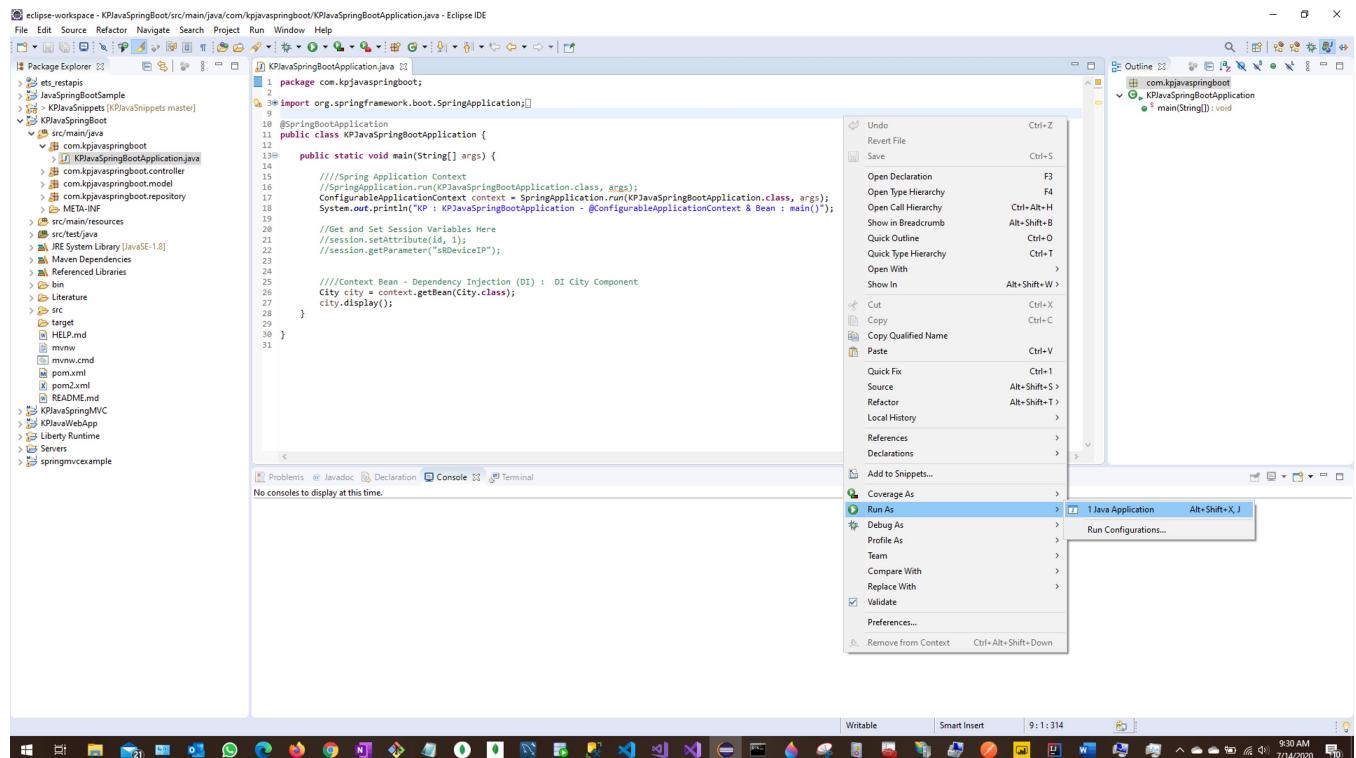
Eclipse & MySQL Connector JDBC Driver

- MySQL Connector JDBC Driver - C:\Program Files (x86)\MySQL\Connector J 8.0\mysql-connector-java-8.0.19.jar

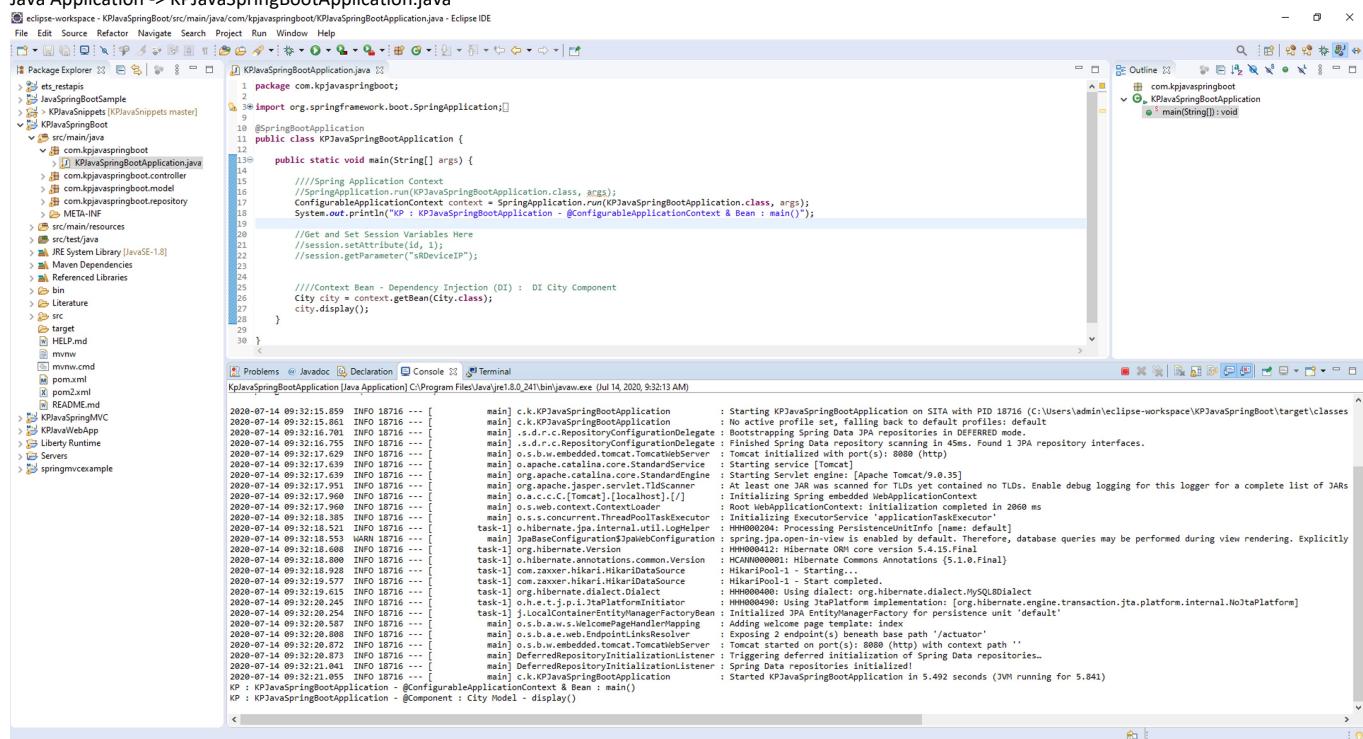


KP Java Spring Boot & REST APIs : KPJavaRESTAPIs

- KPJavaSpringBoot -> KPJavaSpringBootApplication.java -> Run As -> Java Application



- Java Application -> KJavaSpringBootApplication.java



- KP Java : kill processes listening on "8080"
- Process Listening on port "8080" : netstat -a -n -o | find "8080"
TCP 0.0.0.0:8080 0.0.0.0: LISTENING 5420
- Kill Process Listening on port "8080" : taskkill /F /pid 5420
SUCCESS: The process with PID 5420 has been terminated.

```

Administrator: Developer Command Prompt for VS 2017
*****
** Visual Studio 2017 Developer Command Prompt v15.0
** Copyright (c) 2017 Microsoft Corporation
*****

C:\Windows\System32>netstat -a -n -o | find "8080"
  TCP    0.0.0.0:8080        0.0.0.0:0          LISTENING      5420

• C:\Windows\System32>taskkill /pid 5420
ERROR: The process with PID 5420 could not be terminated.
Reason: This process can only be terminated forcefully (with /F option).

C:\Windows\System32>taskkill /F /pid 5420
SUCCESS: The process with PID 5420 has been terminated.

C:\Windows\System32>

```

- Port 8080 required by Tomcat v9.0 Server at localhost is already in use. The server may already be running in another process, or a system process may be using the port. To start this server you will need to stop the other process or change the port number(s).

```

Administrator: Developer Command Prompt for VS 2017
*****
** Visual Studio 2017 Developer Command Prompt v15.0
** Copyright (c) 2017 Microsoft Corporation
*****

• C:\Windows\System32>netstat -ano | findstr 8080
  TCP    0.0.0.0:8080        0.0.0.0:0          LISTENING      5152

C:\Windows\System32>taskkill /F /pid 5152
SUCCESS: The process with PID 5152 has been terminated.

C:\Windows\System32>

```

- <http://localhost:8080>

Welcome to Kailash Spring Boot Web Application : REST APIs!

CRUD - HTTP : GET
City ID : 27

CRUD - HTTP : GET ALL

CRUD - HTTP : POST
City ID : 4081
City Name :
Country Code : IND
District Name : Nityananda
Population : 999

CRUD - HTTP : UPDATE
Country ID : 4080
Country Name : Mudinepalli
Country Code : IND
District Name : Andhra Pradesh
Population : 99999

CRUD - HTTP : DELETE
Country ID : 4081
Country Name : Mudinepalli
Country Code : IND
District Name : Andhra Pradesh
Population : 99999

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- HTTP:// GET ALL : <http://localhost:8080/cities?>

Kailash Spring Boot Application

localhost:8080/cities?

Welcome to Kailash Spring Boot Web Application : REST APIs!

ID	Name	CountryCode	District	Population
1	Kabul	AFG	Kabul	1780000
2	Qandahar	AFG	Qandahar	237500
3	Herat	AFG	Herat	186800
4	Mazar-e-Sharif	AFG	Balkh	127800
5	Amsterdam	NLD	Noord-Holland	731200
6	Rotterdam	NLD	Zuid-Holland	593321
7	Haag	NLD	Zuid-Holland	440900
8	Utrecht	NLD	Utrecht	234323
9	Eindhoven	NLD	Noord-Brabant	201843
10	Tilburg	NLD	Noord-Brabant	193238
11	Groningen	NLD	Groningen	172701
12	Breda	NLD	Noord-Brabant	160398
13	Apeldoorn	NLD	Gelderland	153491
14	Nijmegen	NLD	Gelderland	152463
15	Enschede	NLD	Overijssel	149544
16	Haarlem	IND	Noord-Holland	148772

http://localhost:8080/city?id=4080

Postman

File Edit View Help

New Import Runner KP Professional Workspace Invite Upgrade

PUT Spr... DEL Spr... POST Spr... GET htt... GET htt... GET Spr... X + *** No Environment

SpringBoot-<http://localhost:8080/city-GET>

Comments 0 Examples 0

GET http://localhost:8080/city?id=4080 Send Save

Params Authorization Headers (8) Body Pre-request Script Tests Settings Cookies Code

Query Params

KEY	VALUE	DESCRIPTION	*** Bulk Edit
<input checked="" type="checkbox"/> id	4080		
Key	Value	Description	

Body Cookies (1) Headers (6) Test Results Status: 200 OK Time: 26 ms Size: 2.71 KB Save Response

Pretty Raw Preview Visualize

logo

Welcome to Kailash Spring Boot Web Application : REST APIs!

ID	Name	CountryCode	District	Population
4080	Mudinepalli	IND	Krishna	1234567890

Copyright © Your Website 2019

Bootcamp Build Browse

http://localhost:8080/city?id=4080&name=Mudinepalli&countryCode=IND&disrtict=Krishna&population=9876543210

Postman

File Edit View Help

KP Professional Workspace Invite Upgrade

PUT Spr... X DEL Spr... POST Spr... GET http... GET http... GET Spr... + ... No Environment Comments 0 Examples 0

SpringBoot-<http://localhost:8080>/city-Update

PUT <http://localhost:8080/api/city/>?id=4080&name=Mudinepalli&countryCode=IND&disrtict=Krishna&population=987654321

Send Save

Params Authorization Headers (10) Body Pre-request Script Tests Settings Cookies Code

none form-data x-www-form-urlencoded raw binary GraphQL JSON Beautify

```
1 [ { 2   "id": 4080, 3   "name": "Mudinepalli", 4   "countryCode": "IND", 5   "disrtict": "Krishna", 6   "population": 1234567890 7 } ]
```

Body Cookies (1) Headers (5) Test Results Status: 200 OK Time: 112 ms Size: 261 B Save Response

Pretty Raw Preview Visualize JSON

```
1 [ { 2   "id": 4080, 3   "name": "Mudinepalli", 4   "countryCode": "IND", 5   "disrtict": "Krishna", 6   "population": 1234567890 7 } ]
```

Bootcamp Build Browse

The screenshot shows the Postman interface with a PUT request to update a city record. The URL is <http://localhost:8080/api/city/>?id=4080&name=Mudinepalli&countryCode=IND&disrtict=Krishna&population=987654321. The request body is a JSON object with fields id, name, countryCode, disrtict, and population. The response status is 200 OK with a size of 261 B.

Postman

File Edit View Help

KP Professional Workspace Invite Upgrade

PUT Spri... X DEL Spri... POST Spri... GET http... GET http... GET http... + ... No Environment Comments 0 Examples 0

SpringBoot-<http://localhost:8080>/city-Update

PUT <http://localhost:8080/api/city?id=4080&name=Mudinepalli&countryCode=IND&disrtict=Krishna&population=9876543210> Send Save

Params Authorization Headers (10) Body Pre-request Script Tests Settings Cookies Code

Headers Hide auto-generated headers

KEY	VALUE	DESCRIPTION	***	Bulk Edit	Presets
Cookie	JSESSIONID=69B35756938E75601667E966C344E154				
Cache-Control	no-cache				
Postman-Token	<calculated when request is sent>				
Content-Type	application/json				
Content-Length	<calculated when request is sent>				
Host	<calculated when request is sent>				
User-Agent	PostmanRuntime/7.25.0				
Accept	*/*				
Accept-Encoding	gzip, deflate, br				
Connection	keep-alive				

Body Cookies (1) Headers (5) Test Results Status: 200 OK Time: 112 ms Size: 261 B Save Response

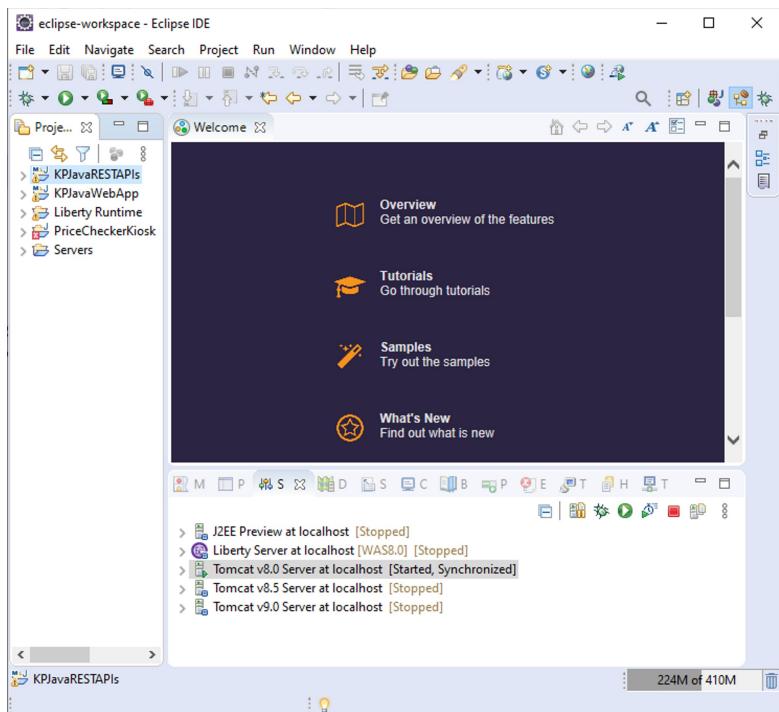
Pretty Raw Preview Visualize JSON

```
1 {  
2   "id": 4080,  
3   "name": "Mudinepalli",  
4   "countryCode": "IND",  
5   "disrtict": "Krishna",  
6   "population": 1234567890  
7 }
```

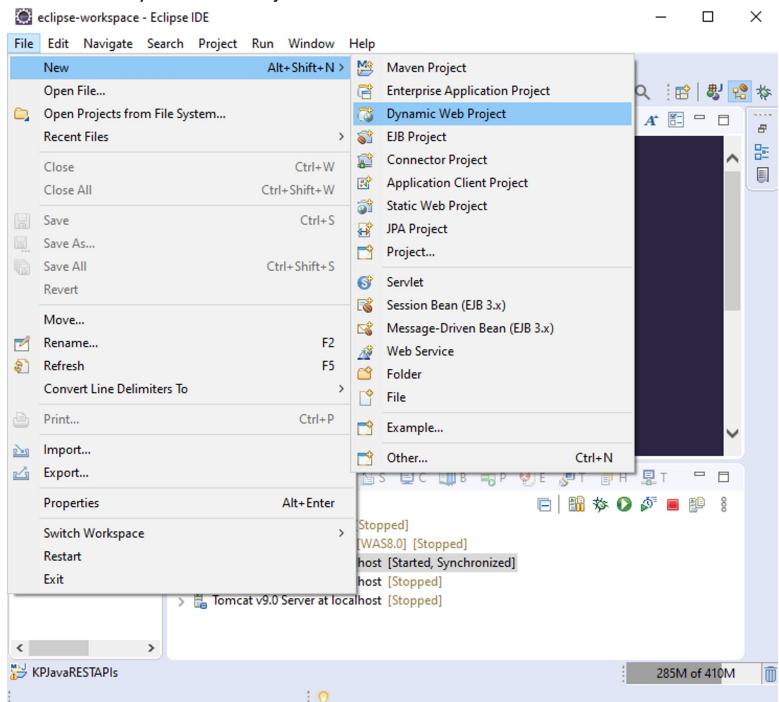
Bootcamp Build Browse

KP Java Spring MVC Framework & REST APIs : KPJavaRESTAPIs

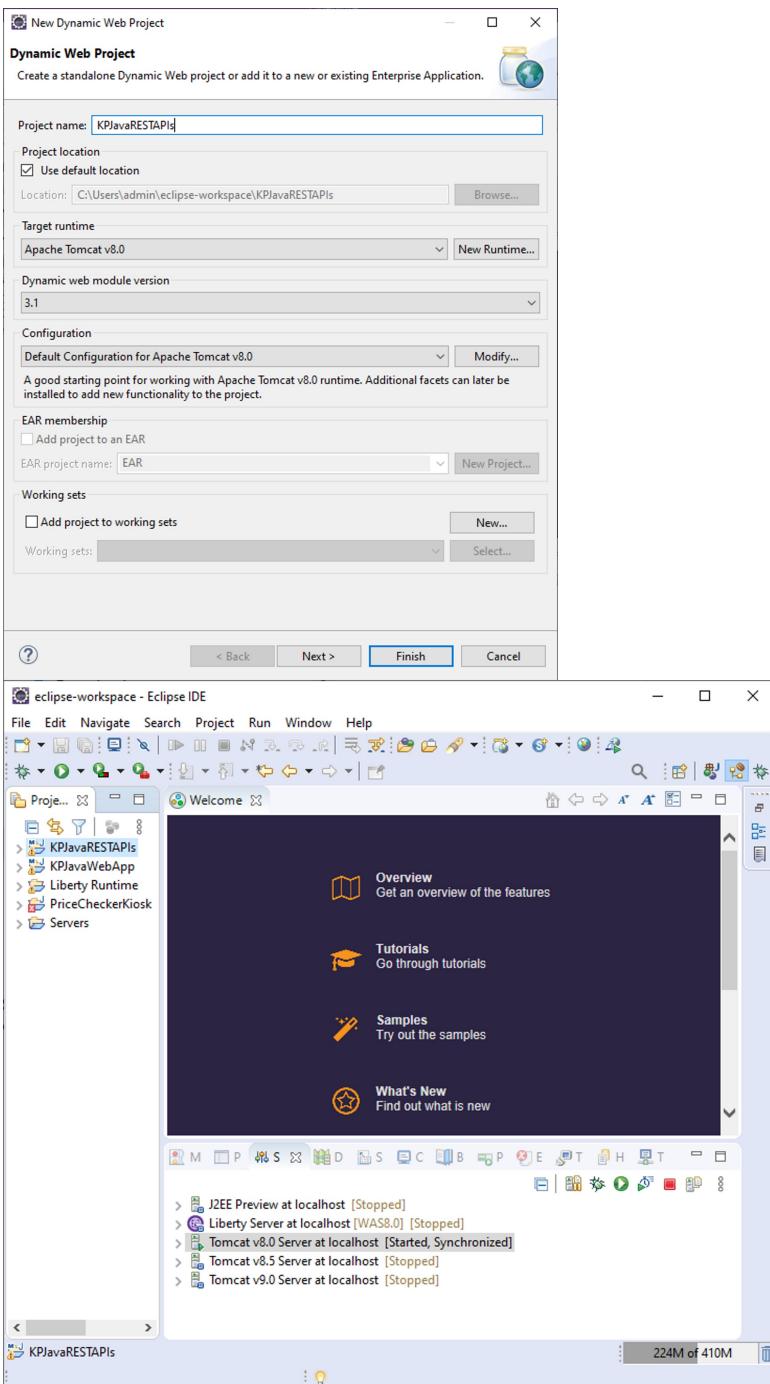
- MySQL Connector JDBC Driver - C:\Program Files (x86)\MySQL\Connector J 8.0\mysql-connector-java-8.0.19.jar



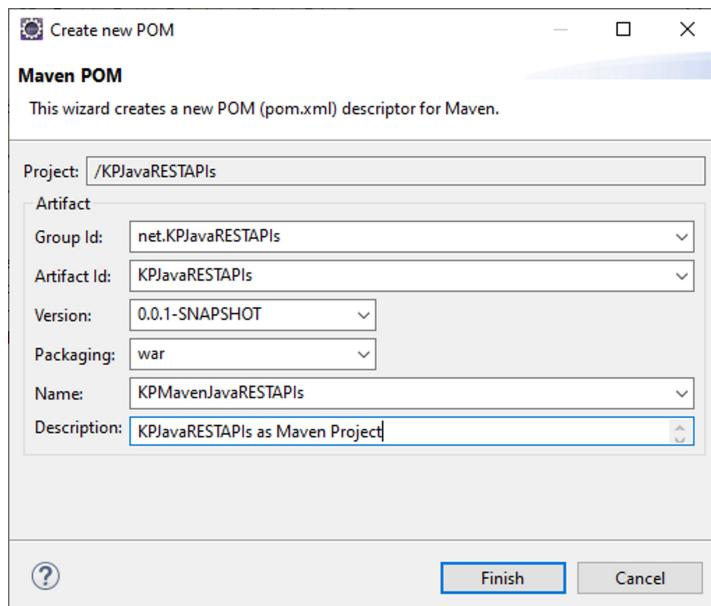
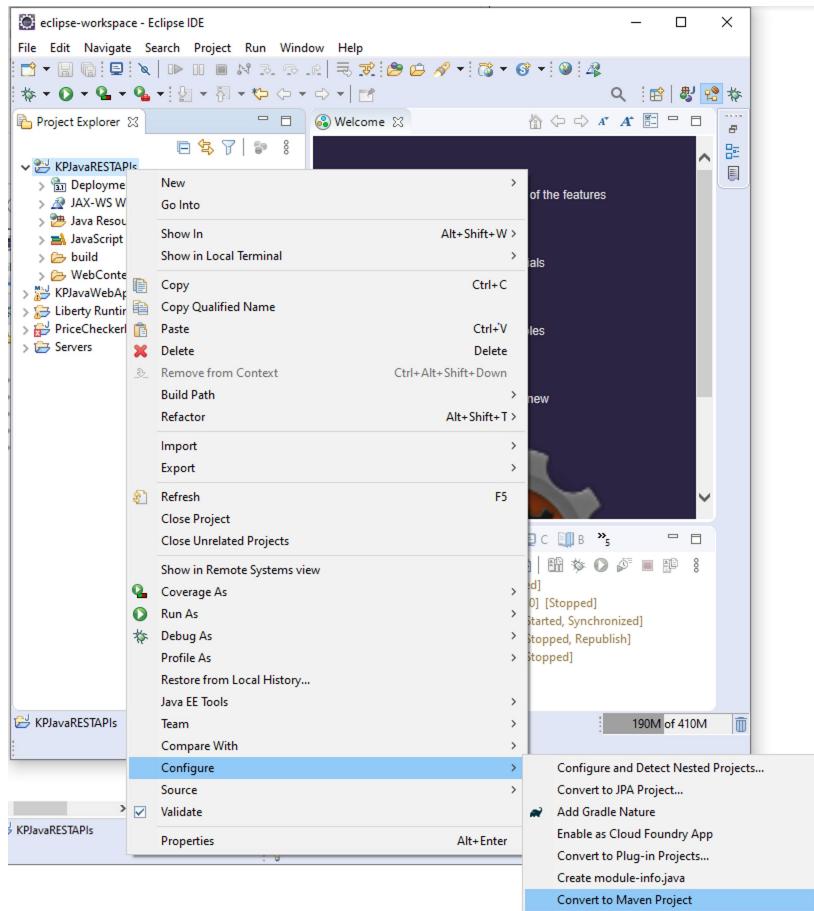
- File -> New -> Dynamic Web Project



- KPJavaRESTAPIs



- Maven Project : Convert KPJavaRESTAPIs to Maven Project : KPJavaRESTAPIs -> Configure -> Convert to Maven Project



- Spring Framework : <https://spring.io/projects/spring-framework>.
- MVC Spring Framework 5.2.4.RELEASE Currently as 5.1.9.RELEASE is the latest release version.

- Add Spring Framework Properties & Dependencies in Maven POM.xml file

```
<!-- KP : Java MVC Spring Framework - Properties & Dependencies-->
<properties>
    <spring.version>5.2.4.RELEASE</spring.version>
</properties>

<dependencies>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-context</artifactId>
        <version>${spring.version}</version>
    </dependency>
</dependencies>
```

<!-- KP : Java MVC Spring Framework - Properties & Dependencies-->

- Maven automatically downloads the Spring Framework Dependencies

```

<!-- KP : Java MVC Spring Framework - Properties & Dependencies-->
<properties>
    <spring.version>5.2.4.RELEASE</spring.version>
</properties>

<dependencies>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-context</artifactId>
        <version>${spring.version}</version>
    </dependency>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-webmvn</artifactId>
        <version>${spring.version}</version>
    </dependency>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-orm</artifactId>
        <version>${spring.version}</version>
    </dependency>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-core</artifactId>
        <version>${spring.version}</version>
    </dependency>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-jcl</artifactId>
        <version>${spring.version}</version>
    </dependency>
    <dependency>
        <groupId>org.springframework</groupId>
        <artifactId>spring-expression</artifactId>
        <version>${spring.version}</version>
    </dependency>
</dependencies>
<!-- KP : Java MVC Spring Framework - Properties & Dependencies-->

```

- MySQL Dependency : On installing MySQL

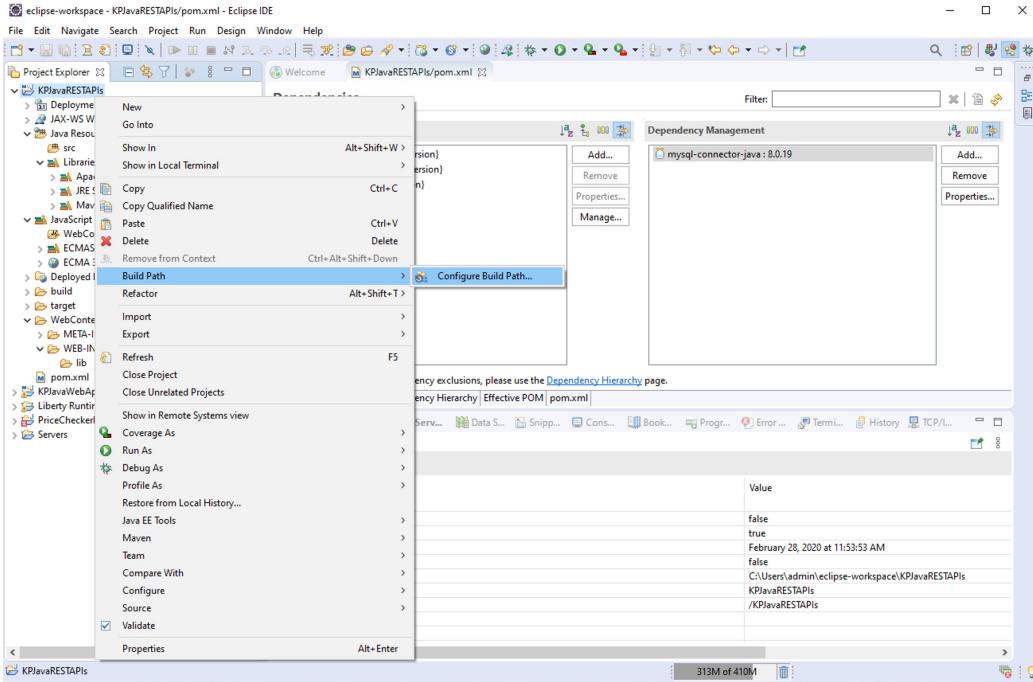
Dependencies Missing artifact mysql:mysql-connector-java:jar:8.0.19

Dependencies	Add...	Remove	Properties...	Manage...
<code>spring-context : \${spring.version}</code> <code>spring-webmvn : \${spring.version}</code> <code>spring-orm : \${spring.version}</code> <code>javax.servlet-api : 4.0.1</code> <code>javax.servlet.jsp-api : 2.3.3</code> <code>jstl : 1.2</code> <code>mysql-connector-java : 8.0.19</code>				

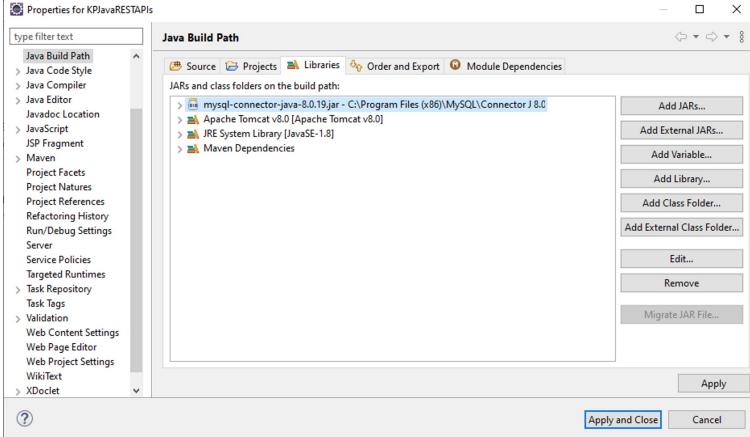
To manage your transitive dependency exclusions, please use the [Dependency Hierarchy](#) page.

Property	Value

- Configure Build Path ->



- Configure Build Path -> Add External JARs -> mysql-connector-java-8.0.19.jar



- Java Interface Implementation

