

# 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 \(Web App using Eclipse, Tomcat, MySQL and JUnit\)](#)



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- [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

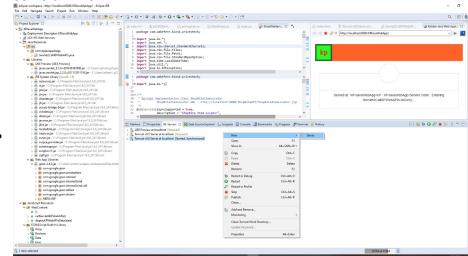
### Technologies Used

- 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

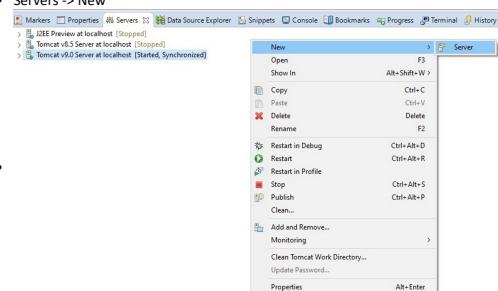
### Eclipse : IBM Liberty WAS Installation

- Install IBM Liberty WAS Installation

- Servers -> New

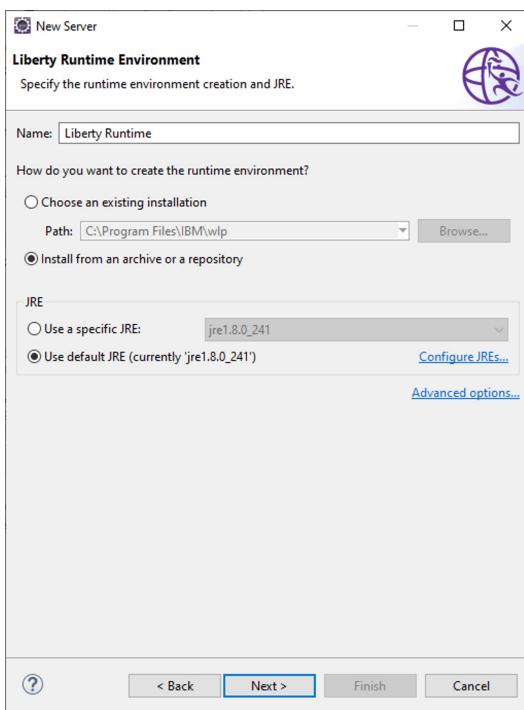
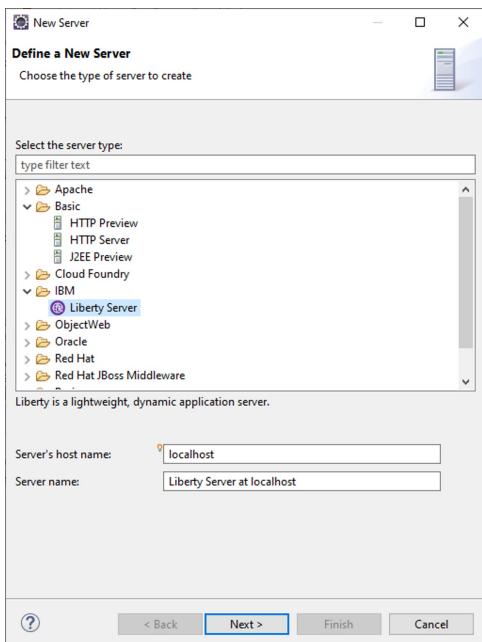


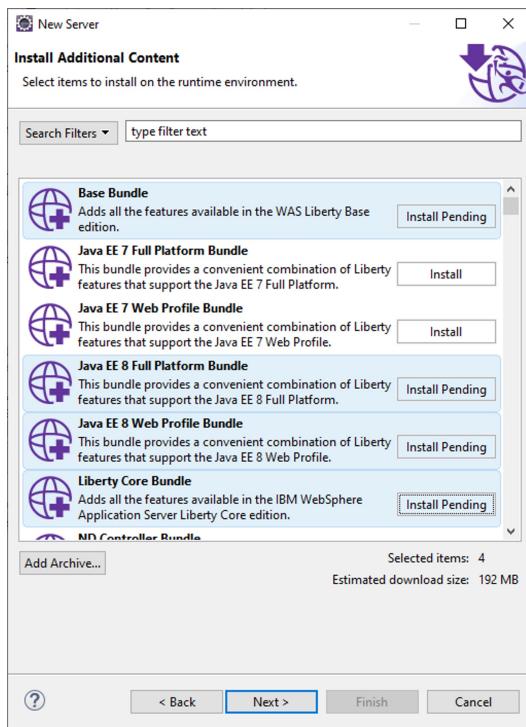
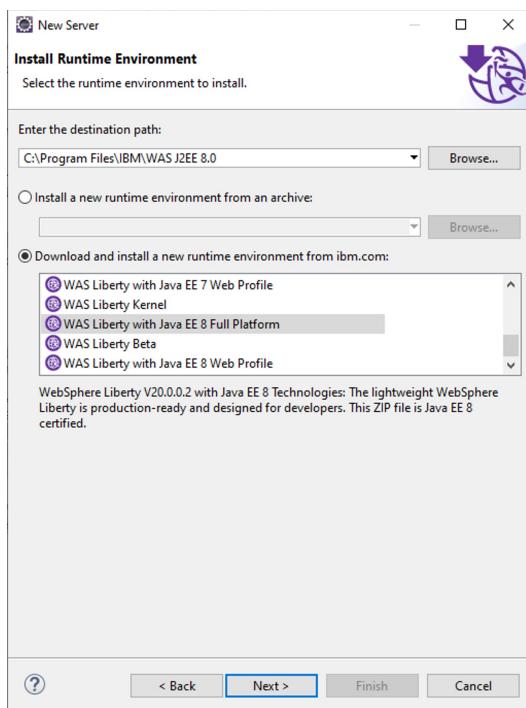
- Servers -> New

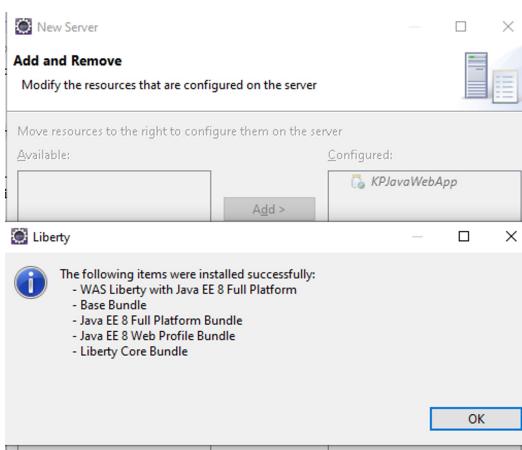
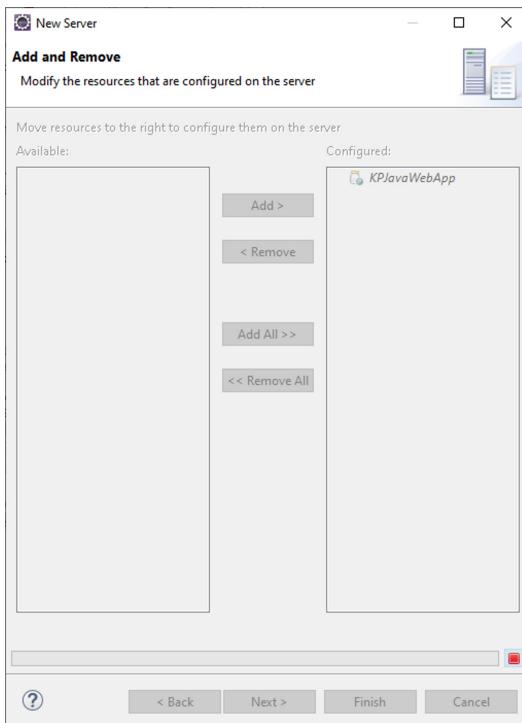
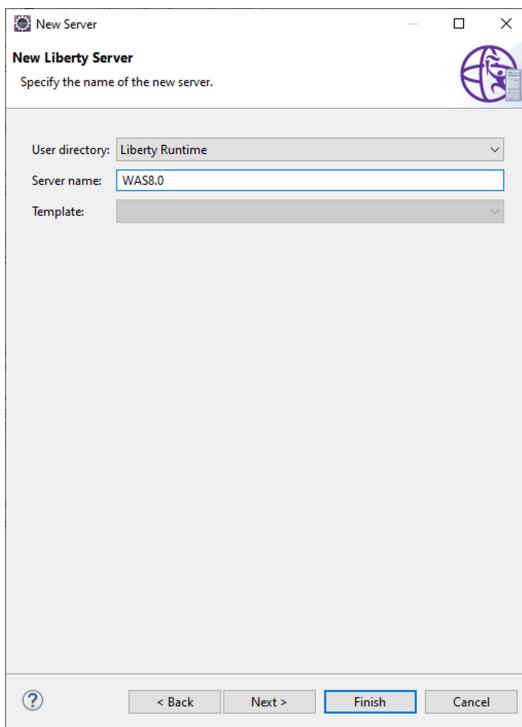


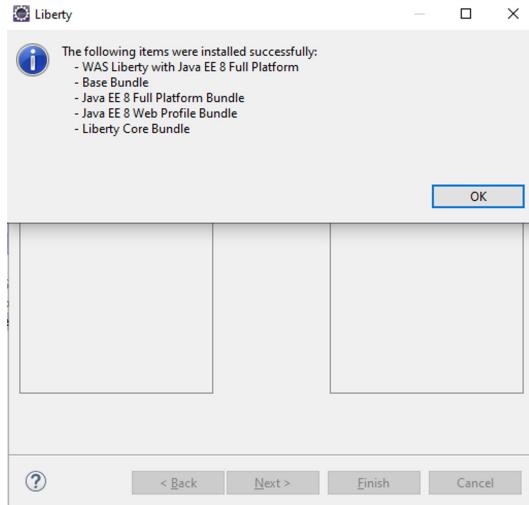
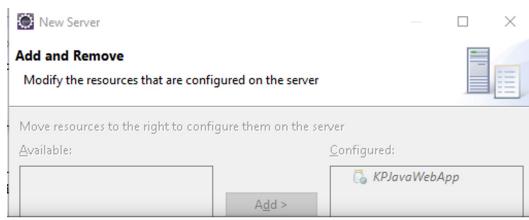
- Server -> New -> IBM -> Liberty Server ->



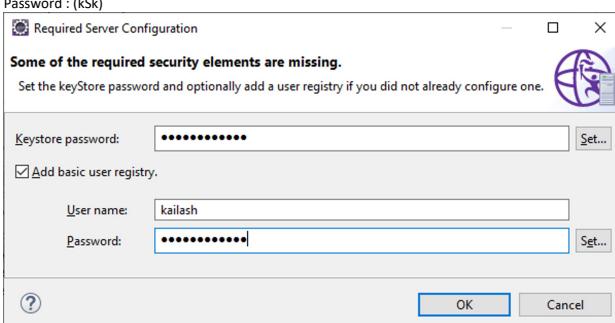






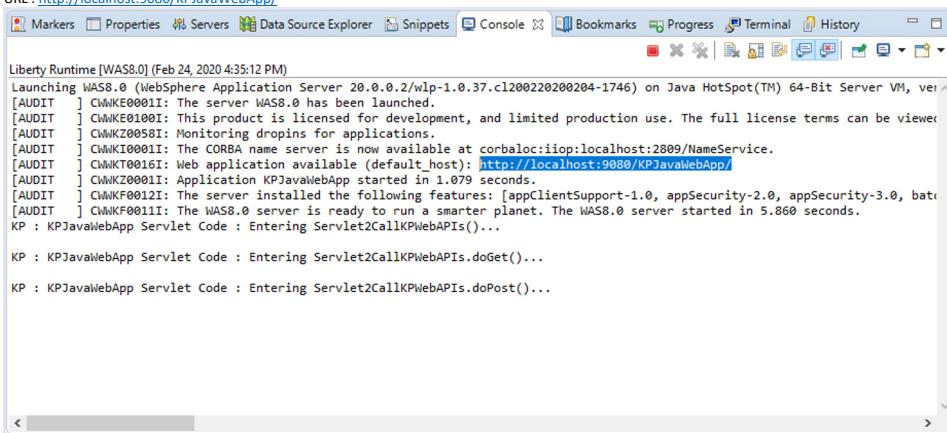


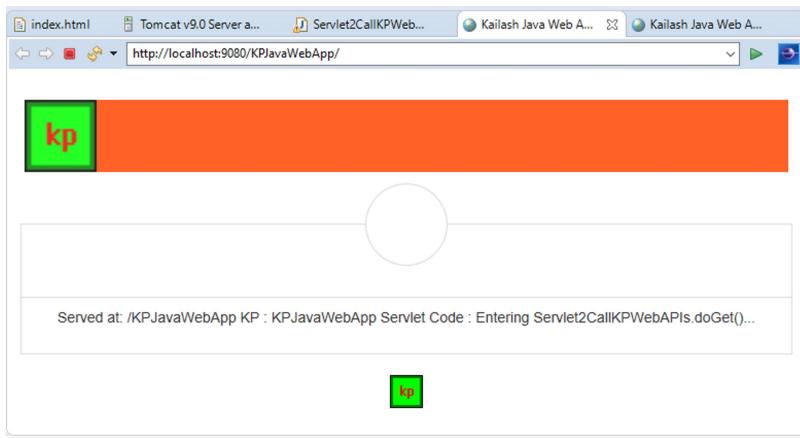
- WAS Key Store Password
    - User name : kailash
    - Password : (kSk)



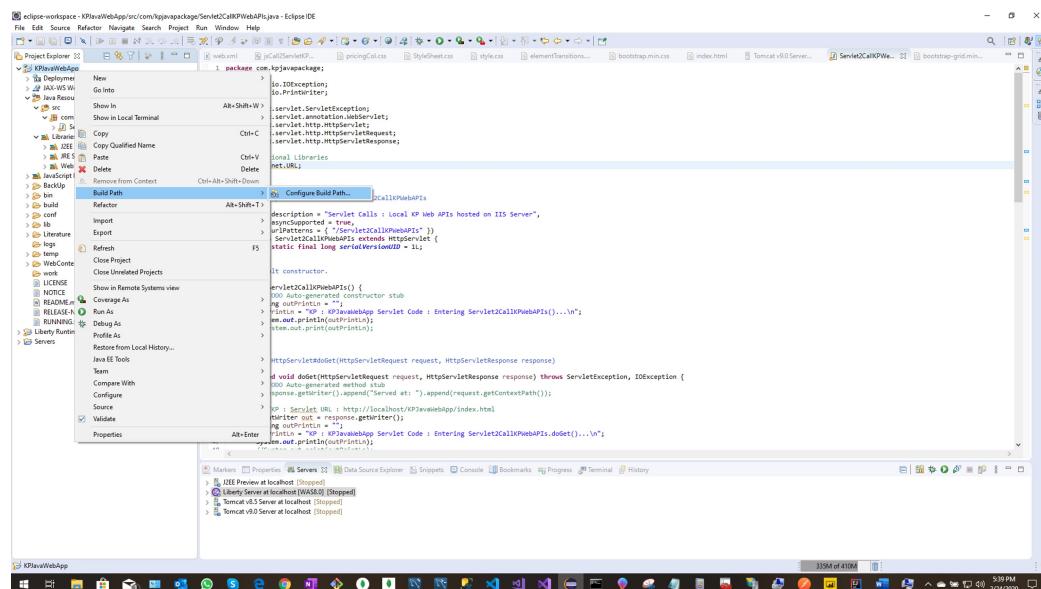
- IBM WAS 8.0 Localhost

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

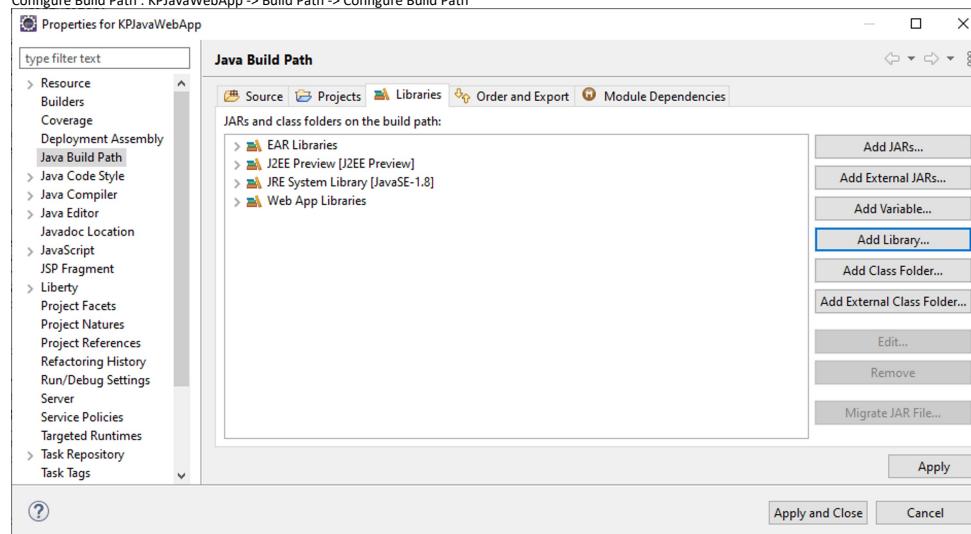


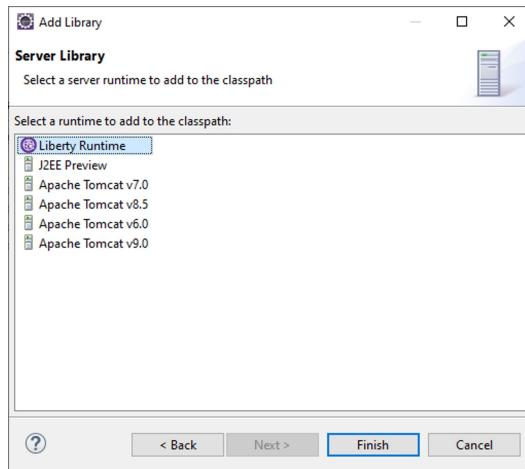
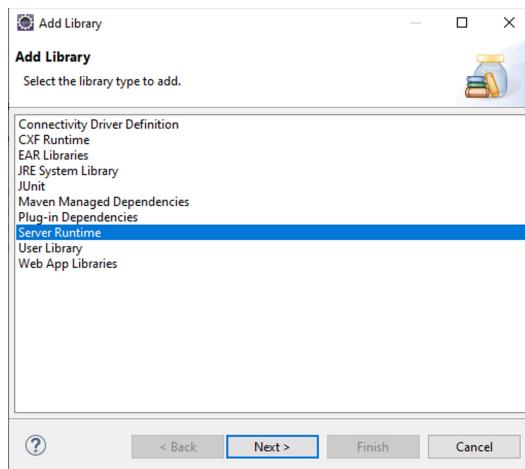


#### IBM WAS 8.0 - Configure Build Path

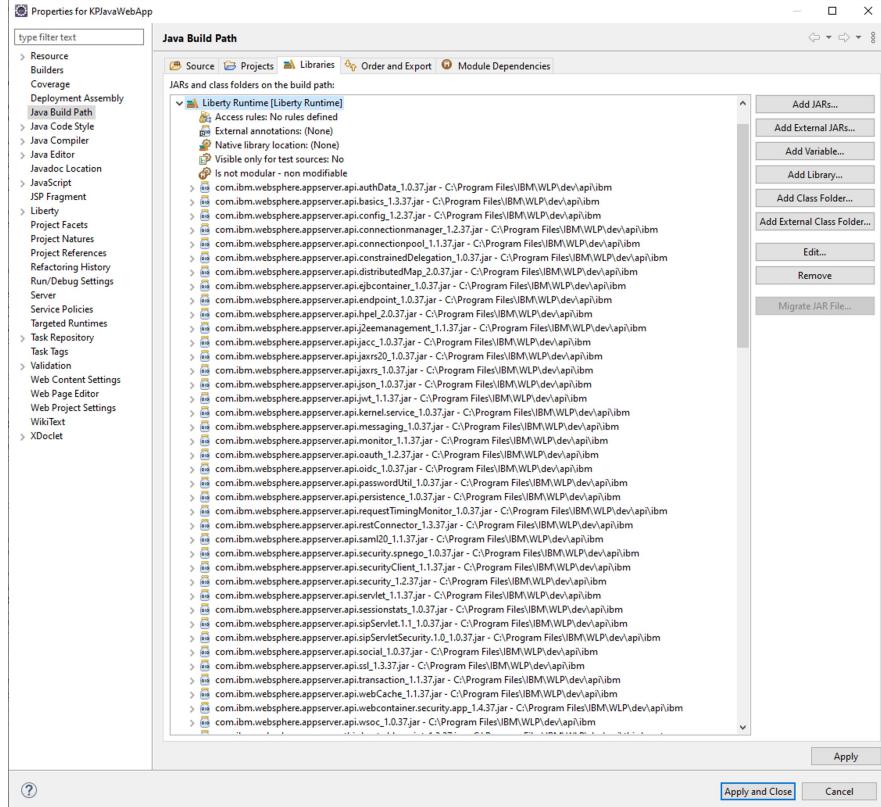


#### Configure Build Path : KPJavaWebApp -> Build Path -> Configure Build Path





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



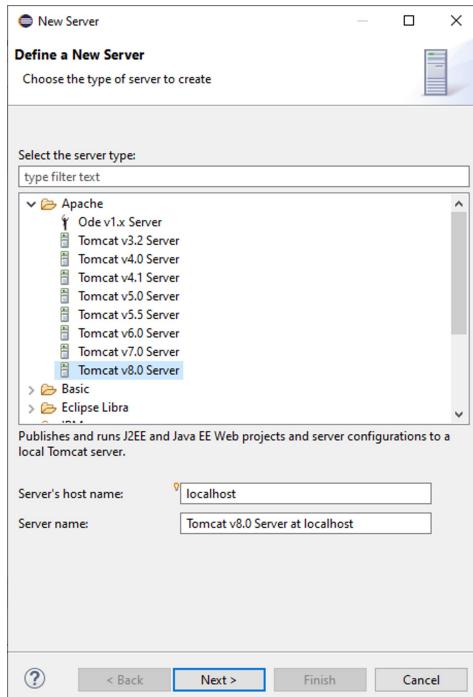
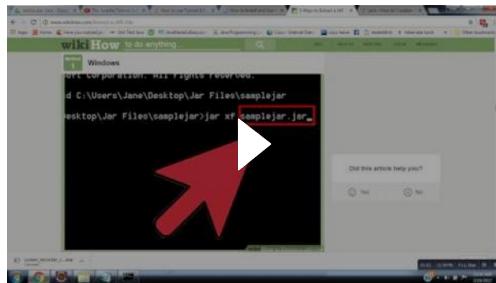
Eclipse : Tomcat Server Installation

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=GtdFeTqgd8Q>

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

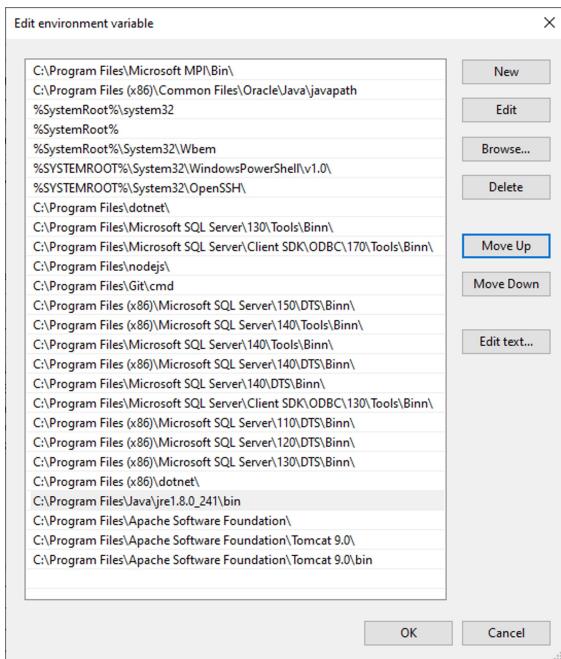
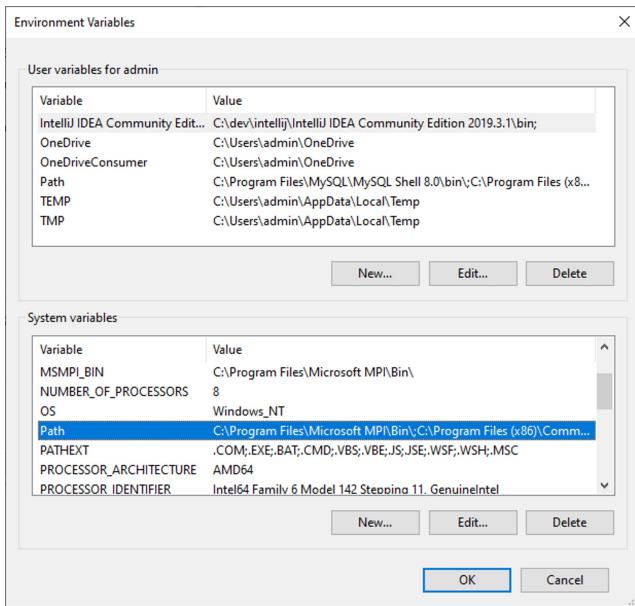
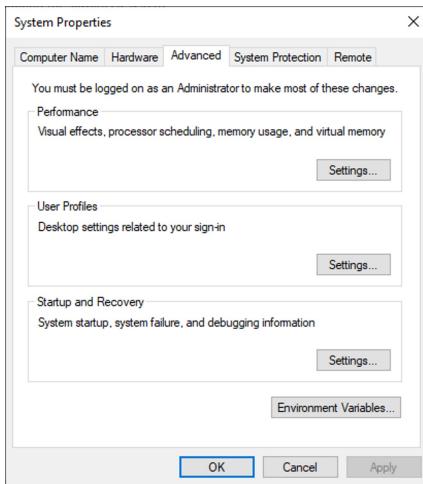
02/19/2020 02:33 PM <DIR> .
02/19/2020 02:33 PM <DIR> ..
12/07/2019 11:43 AM 12,986 annotations-api.jar
02/19/2020 02:33 PM <DIR> catalina
12/07/2019 11:43 AM 54,227 catalina-ant.jar
12/07/2019 11:43 AM 123,330 catalina-ha.jar
12/07/2019 11:43 AM 62,859 catalina-sssi.jar
12/07/2019 11:43 AM 78,187 catalina-storeconfig.jar
12/07/2019 11:43 AM 346,284 catalina-tribes.jar
12/07/2019 11:43 AM 2,884,633 ejc-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 jspic-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 123,397 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

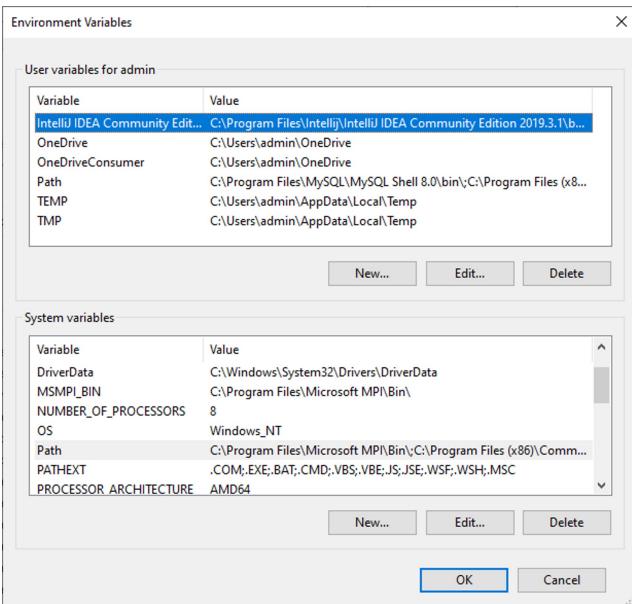
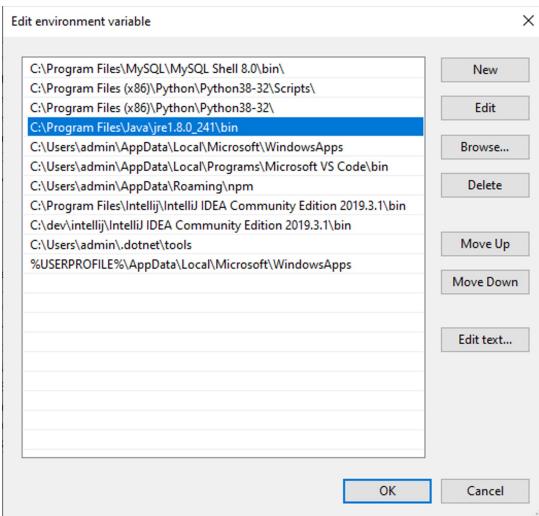
C:\Program Files\Apache Software Foundation\Tomcat 9.0\lib
```

#### Windows 10 and Windows 8

1. 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.

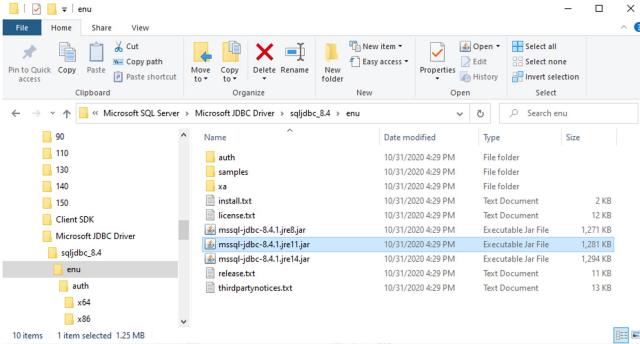
From <https://www.java.com/en/download/help/path.xml>



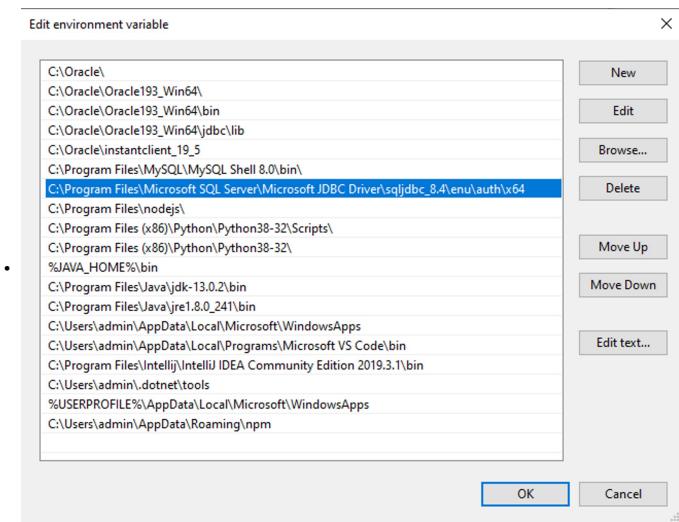


Eclipse & MS SQLServer Connector JDBC Driver

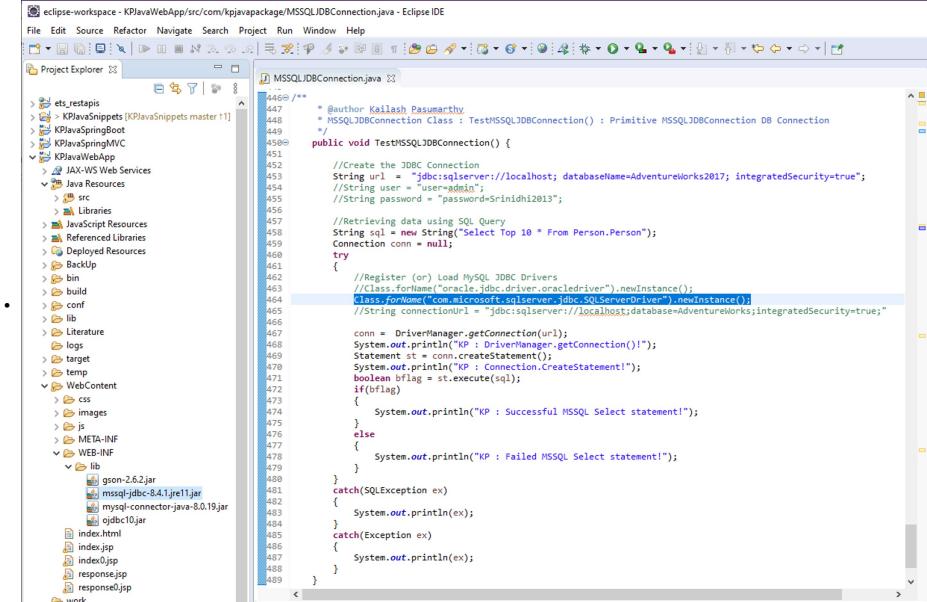
- Download MS SQL Server JDBC Drivers : <https://docs.microsoft.com/en-us/sql/connect/jdbc/download-microsoft-jdbc-driver-for-sql-server?view=sql-server-ver15>
  - MS SQL Connector JDBC Driver - C:\Program Files\Microsoft SQL Server\Microsoft JDBC Driver\sqljdbc\_8.4\enu\mssql-jdbc-8.4.1.jre11.jar



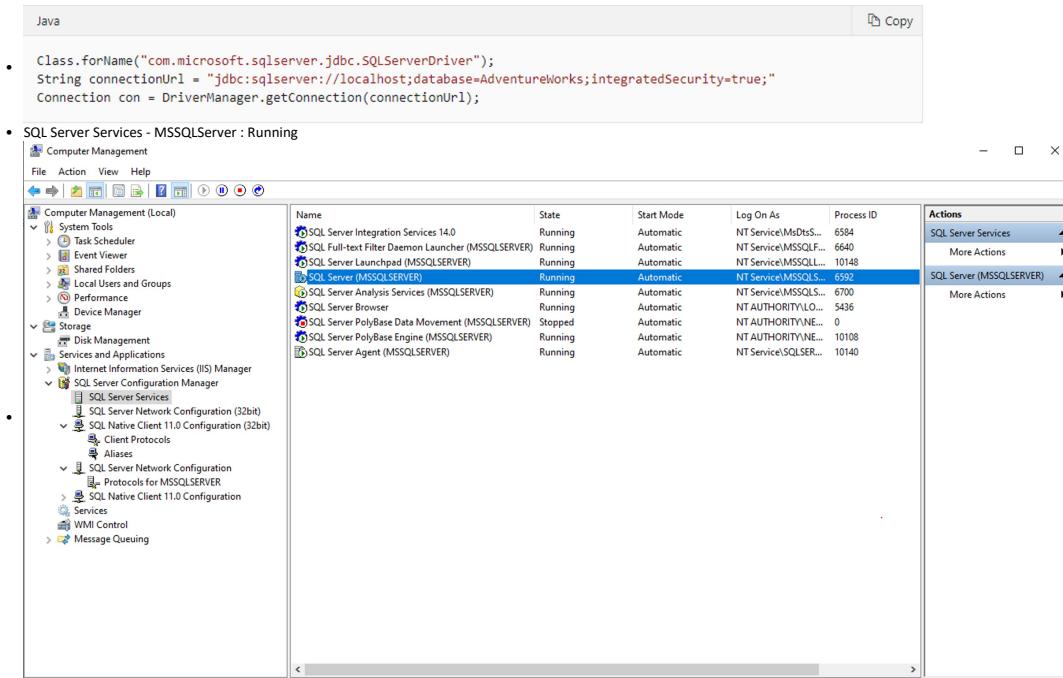
- Set the JAVA Path Variable for MS SQL Server JDBC Jar file



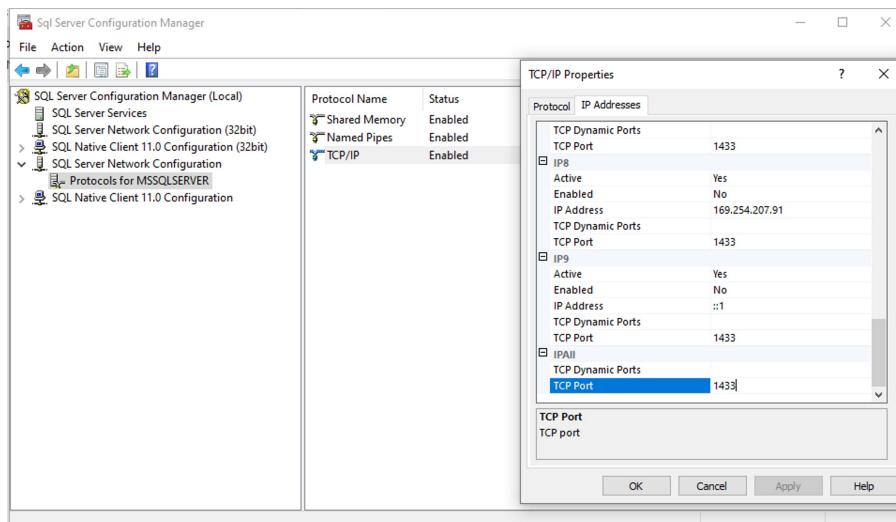
- Add SQL Server JDBC Jar File to the Project Directory



- Follow the documentation on MS to connect to the MS SQL Server using JDBC Servers
- <https://docs.microsoft.com/en-us/sql/connect/jdbc/working-with-a-connection?view=sql-server-ver15>



- SQL Server Configuration Manager : TCP/IP - Enabled

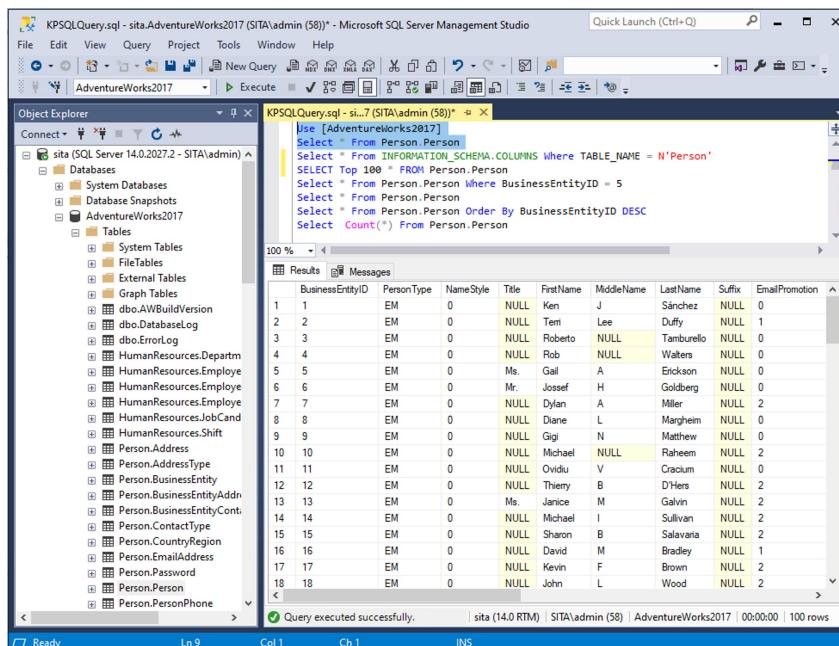


#### Java Class : MSSQLJDBCCConnection

```

445
446 /**
447 * @author Kailash Pasumarthi
448 * MSSQLJDBCC Connection Class : TestMSSQLJDBCCConnection() : Primitive MSSQLJDBCC Connection
449 */
450 public void TestMSSQLJDBCCConnection() {
451
452     //Create the JDBC Connection
453     String url = "jdbc:sqlserver://localhost; databaseName=AdventureWorks2017; integratedSecurity=true";
454     //String user = "user=admin";
455     //String password = "password=Srinidhi2013";
456
457     //Retrieving data using SQL Query
458     String sql = new String("Select Top 10 * From Person.Person");
459     Connection conn = null;
460     try
461     {
462         //Register (or) Load MySQL JDBC Drivers
463         //Class.forName("oracle.jdbc.driver.OracleDriver").newInstance();
464         Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver").newInstance();
465         //String connectionUrl = "jdbc:sqlserver://localhost;database=AdventureWorks;integratedSecurity=true";
466
467         conn = DriverManager.getConnection(url);
468         System.out.println("KP : DriverManager.getConnection()");
469         Statement st = conn.createStatement();
470         System.out.println("KP : Connection.createStatement()");
471         boolean bflag = st.execute(sql);
472         if(bflag)
473         {
474             System.out.println("KP : Successful MSSQL Select statement!");
475         }
476         else
477         {
478             System.out.println("KP : Failed MSSQL Select statement!");
479         }
480     }
481     catch(SQLException ex)
482     {
483         System.out.println(ex);
484     }
485     catch(Exception ex)
486     {
487         System.out.println(ex);
488     }
489 }
490

```



- <http://localhost:8080/KPJavaWebApp/>

BusinessEntityID	PersonType	NameStyle	Title	FirstName	MiddleName	LastName	Suffix	EmailPromotion	AdditionalContactInfo	RowGUID	ModifiedDate
1	EM	0	null	Ken	J	Sánchez	null	0	null	92C4279F-1207-48A3-8448-4636514EB7E2	2009-01-07 00:00:00.0
2	EM	0	null	Terri	Lee	Duffy	null	1	null	D8763459-8AA8-47CC-AFF7-C9079AF79033	2008-01-24 00:00:00.0
3	EM	0	null	Roberto	null	Tamburello	null	0	null	E1A2555E-0828-434B-A33B-6F38136A37DE	2007-11-04 00:00:00.0
4	EM	0	null	Rob	null	Walters	null	0	null	F2D7CE06-38B3-4357-805B-F4B6B71C01F	2007-11-28 00:00:00.0
5	EM	0	Ms.	Gail	A	Erickson	null	0	null	F3A3F6B4-AE3B-430C-A754-9F2231BA6FEEF	2007-12-30 00:00:00.0
6	EM	0	Mr.	Jossef	H	Goldberg	null	0	null	0DEA28FD-EFFE-482A-AFD3-B7E8F199D56F	2013-12-16 00:00:00.0

#### 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 -> KPJavaSpringBootApplication.java

- KP Java : kill processes listening on "8080"

- Kill 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.

c:\ Administrator: Developer Command Prompt for VS 2017

```
Administrator: Developer Command Prompt v15.0

** 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 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>

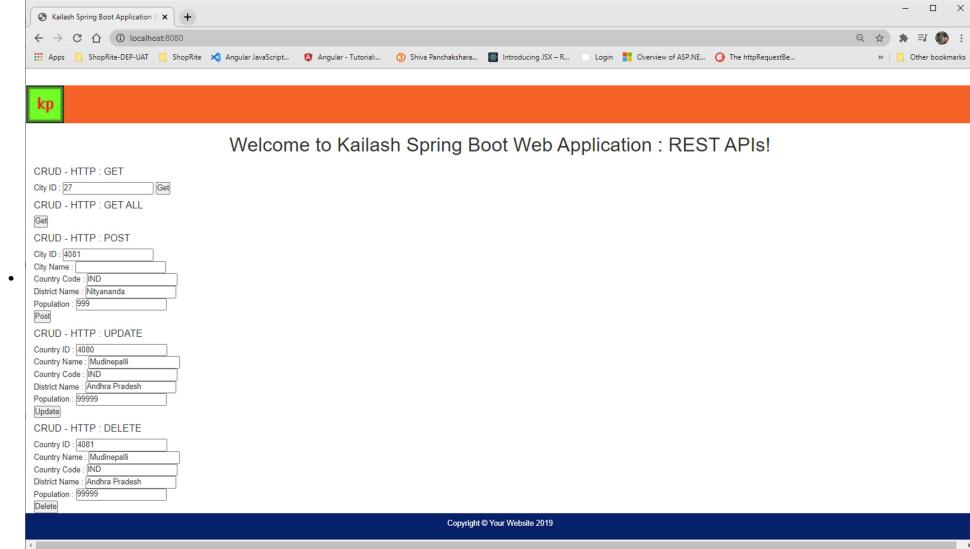
- Port 8080 required by Tomcat v9.0 Server at localhost is already in use. The server may already be running in another process, or a system process may be using the port. To start this server you will need to stop the other process or change the port number(s).

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

C:\Windows\System32>
```

- <http://localhost:8080>



- 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-Sharf	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	Nimegen	NLD	Gelderland	152463
15	Enschede	NLD	Overijssel	149544
16	Haarlem	NLD	Noord-Holland	148772

- <http://localhost:8080/city?id=4080>

Postman

File Edit View Help

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 interface showing a successful PUT request to `http://localhost:8080/api/city?id=4080&name=Mudinepalli&countryCode=IND&district=Krishna&population=987654321`. The response status is 200 OK.

```

1
2 "id": 4080,
3 "name": "Mudinepalli",
4 "countryCode": "IND",
5 "district": "Krishna",
6 "population": 1234567890
7

```

Postman interface showing a successful PUT request to `http://localhost:8080/api/city?id=4080&name=Mudinepalli&countryCode=IND&district=Krishna&population=987654321`. The response status is 200 OK.

KEY	VALUE	DESCRIPTION
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	

```

1
2 "id": 4080,
3 "name": "Mudinepalli",
4 "countryCode": "IND",
5 "district": "Krishna",
6 "population": 1234567890
7

```

- Create X509 Certificate - Create PKCS12 : Public Key Cryptography Standards
  - keytool -genkeypair -alias baeldung -keyalg RSA -keysize 2048 -storetype PKCS12 -keystore baeldung.p12 -validity 3650

Administrator: Developer Command Prompt for VS 2017

```
C:\Windows\System32>netstat -a -n -o | find "8080"
  TCP    0.0.0.0:8080          0.0.0.0:0      LISTENING      5260

C:\Windows\System32>taskkill /F /pid 5260
SUCCESS: The process with PID 5260 has been terminated.

C:\Windows\System32>keytool -genkeypair -alias baeldung -keyalg RSA -keysize 2048 -storetype PKCS12 -keystore baeldung.p12 -validity 3650
Enter keystore password:
Re-enter new password:
What is your first and last name?
[Unknown]: Kailash Pasumathy
What is the name of your organizational unit?
[Unknown]: Pasumathy
What is the name of your organization?
[Unknown]: Pasumathy
What is the name of your City or Locality?
[Unknown]: Princeton
What is the name of your State or Province?
[Unknown]: New Jersey
What is the two-letter country code for this unit?
[Unknown]: US
Is CN=Kailash Pasumathy, OU=Pasumathy, O=Pasumathy, L=Princeton, ST=New Jersey, C=US correct?
[no]: yes

Generating 2,048 bit RSA key pair and self-signed certificate (SHA256withRSA) with a validity of 3,650 days
for: CN=Kailash Pasumathy, OU=Pasumathy, O=Pasumathy, L=Princeton, ST=New Jersey, C=US

C:\Windows\System32>
```

- keytool -genkeypair -alias baeldung -keyalg RSA -keysize 2048 -storetype PKCS12 -keystore baeldung.p12 -validity 3650
- SSL Enable : 'application.properties'

eclipse-workspace - KPJavaSpringBoot/src/main/resources/application.properties - Eclipse IDE

```
application...  KPJavaInterv...  CityControll...  Cardjava  KPJavaSprin...
27
28 # SSL
29 # The format used for the keystore. It could be set to JKS in case it is a JKS file
30 ##KP: Enable server.port=8888' for 'https'
31 server.port=8443
32 # PKCS12 or JKS : PKCS - Public Key Cryptography Standards
33 server.ssl.keyStoreType=PKCS12
34 # The path to the keystore containing the certificate
35 server.ssl.key-store=classpath:keystore/baeldung.p12
36 # The password used to generate the certificate
37 server.ssl.key-store-password=password
38 # The alias mapped to the certificate
39 server.ssl.key-alias=baeldung
40
41
42 ## SSL Enabled
43 server.ssl.enabled=true
44 #trust store location
45 trust.store=classpath:keystore/baeldung.p12
46 #trust store password
47 trust.store.password=password
48
49
```

Project Explorer

- ets\_restapis
- KPJavaSnippets [KPJavaSnippets master 11]
- KPJavaSpringBoot
  - src/main/java
    - com.kpjavaspringboot
      - KPJavaInterview.java
      - KPJavaInterviewExamples.java
      - KPJavaSpringBootApplication.java
      - KPJavaInterview-XX.txt
      - KPJavaInterview.java.txt
      - KPJavaInterviewExamples.java.txt
      - com.kpjavaspringboot.controller
      - com.kpjavaspringboot.model
      - com.kpjavaspringboot.repository
      - META-INF
    - src/main/resources
      - keystore
        - baeldung.p12
        - KPSitaRamaCert.cer
        - KPSitaSelfSignedCert.cer
        - KPSitaSelfSignedCert.pfx
      - application.properties
      - application.properties.txt
  - src/test/java
  - JRE System Library [JavaSE-1.8]
  - Maven Dependencies
  - Referenced Libraries
  - bin
  - Literature
  - src
  - target
  - HELP.md
  - mvnw
  - mvnw.cmd
  - pom.xml
  - README.md
- KPJavaSpringMVC
- KPJavaWebApp
- Liberty Runtime (in usr)
- PriceCheckerKiosk
- Servers
- springmvexample

Markers Properties Servers Data Source Explorer Snippets Console Progress Terminal

KPJavaSpringBootApplication [Java Application] C:\Program Files\Java\jre1.8.0\_241\bin\javaw.exe (Oct 22, 2020, 5:11:35 PM)

```
KP : Count Number of Digits and Return the Sum?
Count & Sum of All Digits inside the Number : '987654321'. Count : '9', Sum : '45'
KP : Check if Input String a Palindrome?
Input Variable : 'Madam'
Input String : 'Madam', is NOT a Palindrome !
Input Variable : 'Madam', Ignore Case : 'true'
Input String : 'Madam', is A Palindrome !
Input Variable : 'Madam', Ignore Case : 'false'
Input String : 'Madam', is NOT a Palindrome. Case Sensitive !
KP : Compute Factorial Recursively
Factorial of : '27' = '1484783616'
KP : KPJavaSpringBootApplication - @Component : City Model - display()
2020-10-22 17:13:19.854 INFO 3492 --- [nio-8443-exec-2] o.a.c.c.C.[Tomcat].[localhost].[/] : 
2020-10-22 17:13:19.855 INFO 3492 --- [nio-8443-exec-2] o.s.web.servlet.DispatcherServlet : 
2020-10-22 17:13:19.864 INFO 3492 --- [nio-8443-exec-2] o.s.web.servlet.DispatcherServlet : 
KP : KPJavaSpringBootApplication - @Controller : CityController - @GetMapping : retrieveAllCities()
KP : KPJavaSpringBootApplication - @Controller : CityController - @GetMapping : retrieveAllCities()
KP : KPJavaSpringBootApplication - @RestController : CityController - @GetMapping
2020-10-22 17:22:27.998 WARN 3492 --- [nio-8443-exec-9] .w.s.m.s.DefaultHandlerExceptionResolver : 
KP : KPJavaSpringBootApplication - @RestController : CityController - @GetMapping
com.kpjavaspringboot.model.City@6f686688 27 Emmen NLD Drenthe 105853
KP : KPJavaSpringBootApplication - @Controller : CityController - @GetMapping : retrieveAllCities()
```

https://localhost:8443/cities

Postman

ID	Name	CountryCode	District	Population
1	Kabul	AFG	Kabul	1780000
2	Qandahar	AFG	Qandahar	237500
3	Herat	AFG	Herat	188800

Welcome to Kailash Spring Boot Web Application : REST APIs!

Find and Replace Console All Logs

GET https://localhost:8443/ 200 61 ms
GET https://localhost:8443/cities 200 124 ms

https://localhost:8443/cities

Kailash Spring Boot Application × +

Not secure | localhost:8443/cities

Apps ShopRite-DEP-UAT ShopRite What is Apigee Edg... Angular JavaScript... Other bookmarks

kp

## 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	NLD	Noord-Holland	148772
17	Almere	NLD	Flevoland	142465
18	Arnhem	NLD	Gelderland	138020

• <https://localhost:8443>

Kailash Spring Boot Application x +

Not secure | localhost:8443

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Welcome to Kailash Spring Boot Web Application : REST APIs!

CRUD - HTTP : GET

City ID : 27 Get

CRUD - HTTP : GET ALL

Get

CRUD - HTTP : POST

City ID : 4081  
City Name : Penjandra  
Country Code : IND  
District Name : Krishna  
Population : 999 Post

CRUD - HTTP : UPDATE

Country ID : 4080  
Country Name : Mudinepalli  
Country Code : IND  
District Name : Andhra Pradesh  
Population : 99999 Update

CRUD - HTTP : DELETE

Country ID : 4081  
Country Name : Mudinepalli  
Country Code : IND  
District Name : Andhra Pradesh  
Population : 99999 Delete

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https://localhost:8443/api/city?id=27

https://localhost:8443/api/city?id=27 x +

Not secure | localhost:8443/api/city?id=27

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{"id":27,"name":"Emmen","countryCode":"NLD","district":"Drenthe","population":105853}

https://localhost:8443/city?id=4081

Kailash Spring Boot Application x +

Not secure | https://localhost:8443/city?id=4081

Apps ShopRite-DEP-UAT ShopRite What is Apigee Edg... Angular - Tutorial... Design Pattern - Fr... Other bookmarks

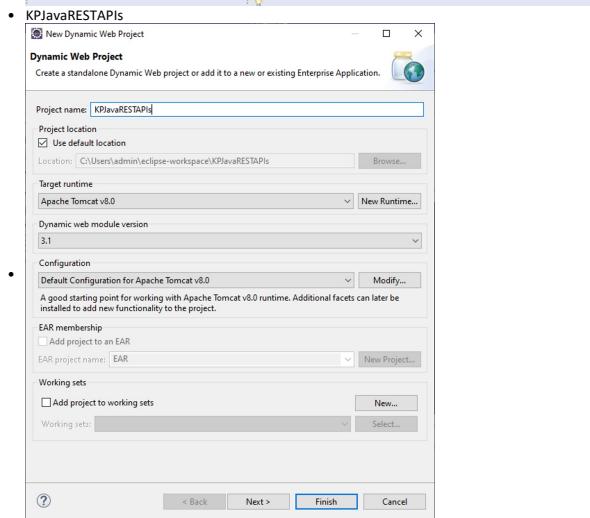
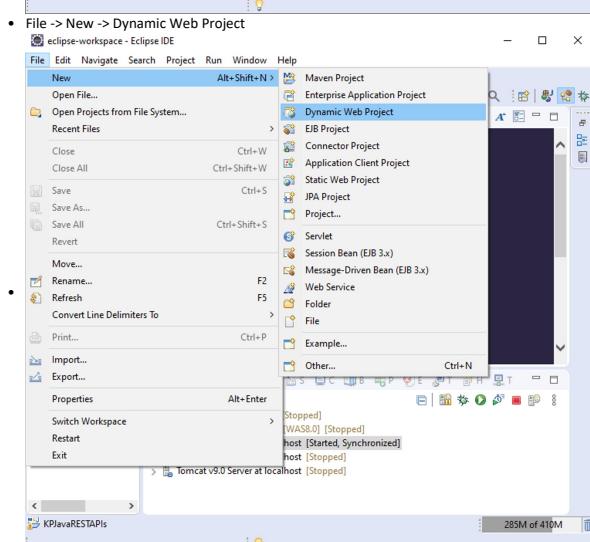
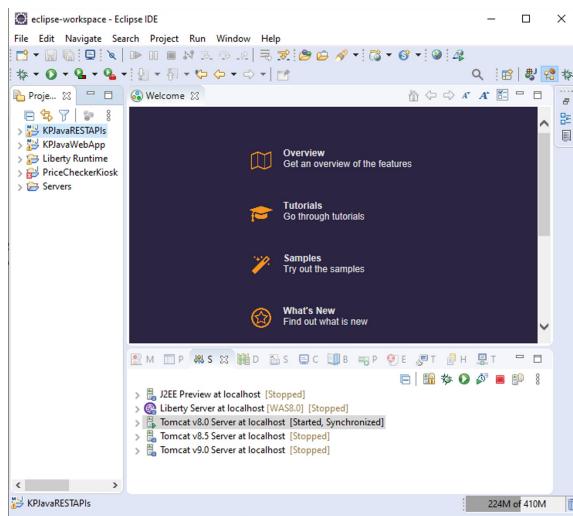
Welcome to Kailash Spring Boot Web Application : REST APIs!

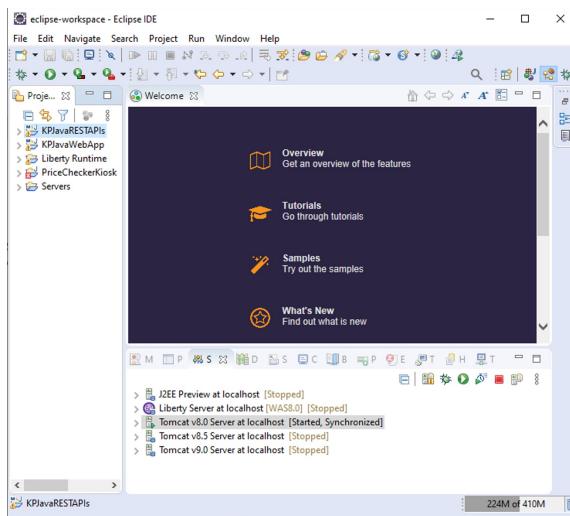
ID	Name	CountryCode	District	Population
4081	Penjandra	IND	Krishna	9310527

Copyright © Your Website 2019

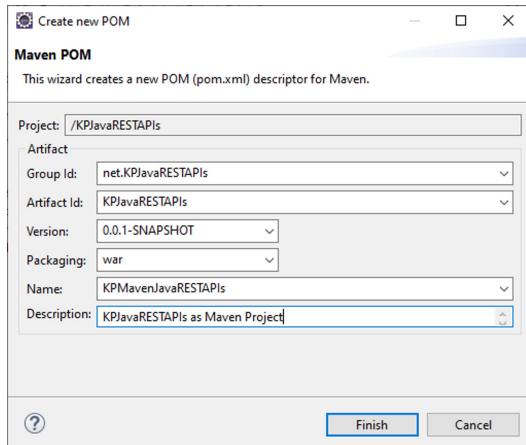
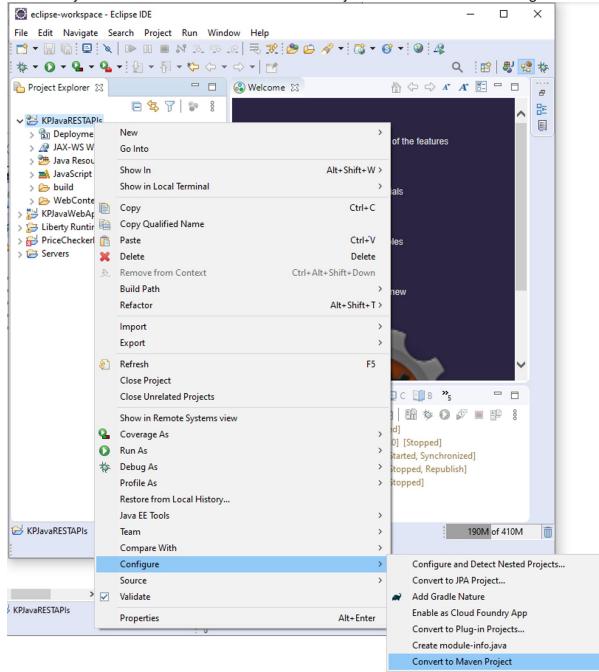
KP Java Spring MVC Framework & REST APIs : KPJavaRESTAPIs

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





- 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>

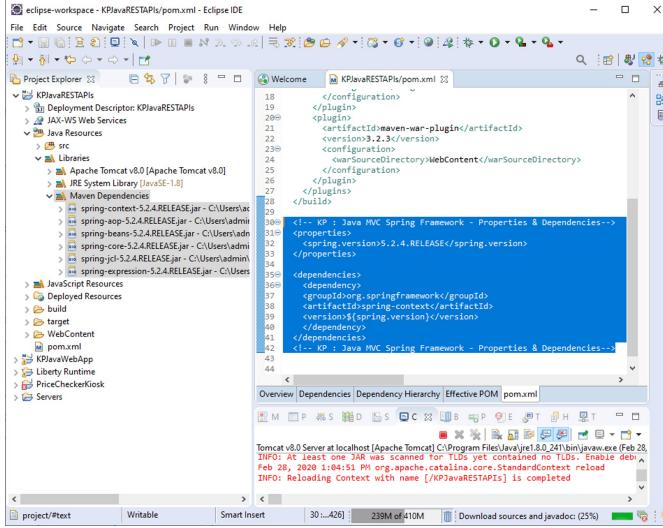
```

```

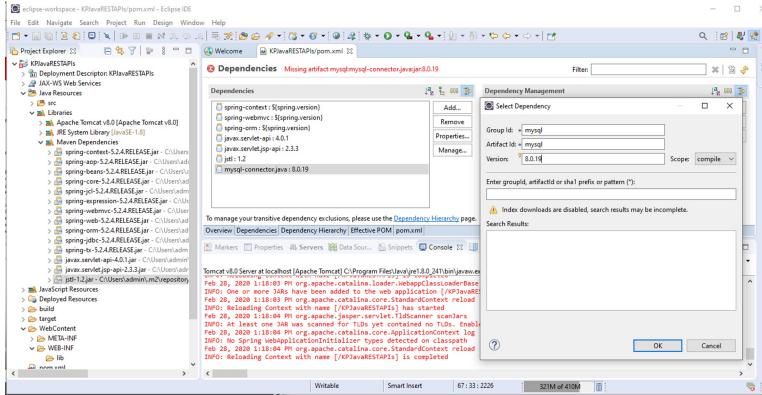
    </dependency>
</dependencies>
<!-- KP : Java MVC Spring Framework - Properties &amp; Dependencies--&gt;
</pre>

```

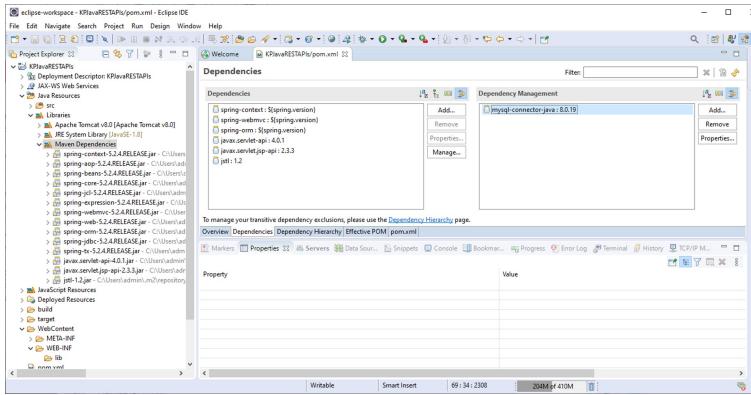
- Maven automatically downloads the Spring Framework Dependencies

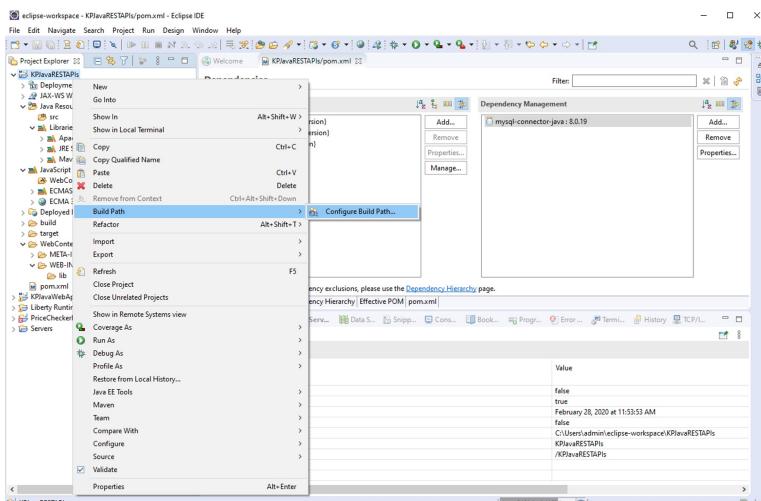


- MySQL Dependency : On installing MySQL

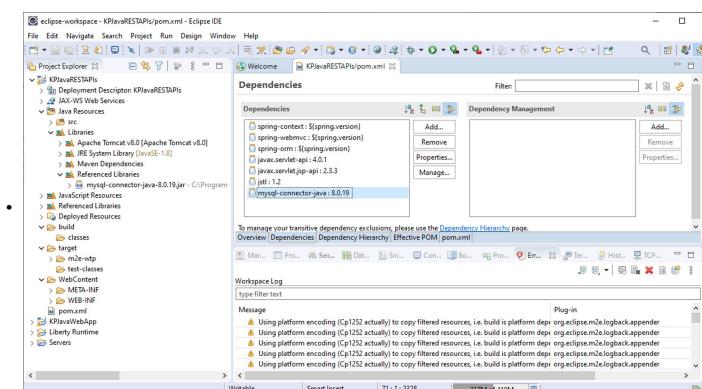
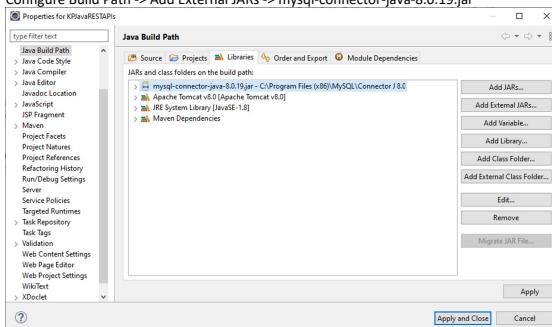


- Configure Build Path ->

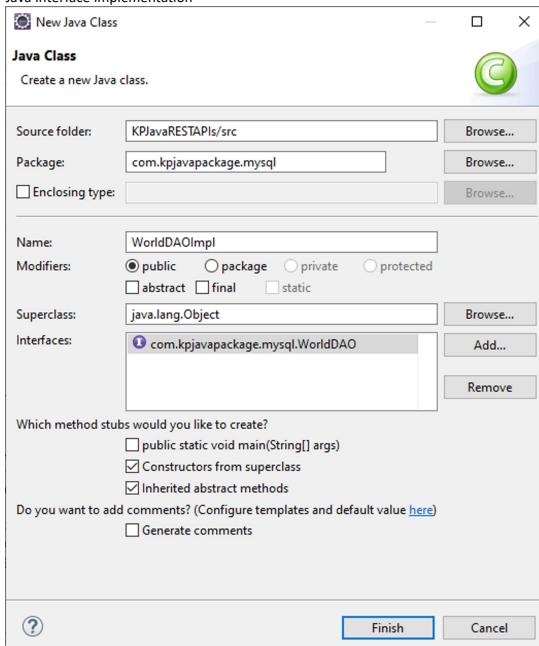




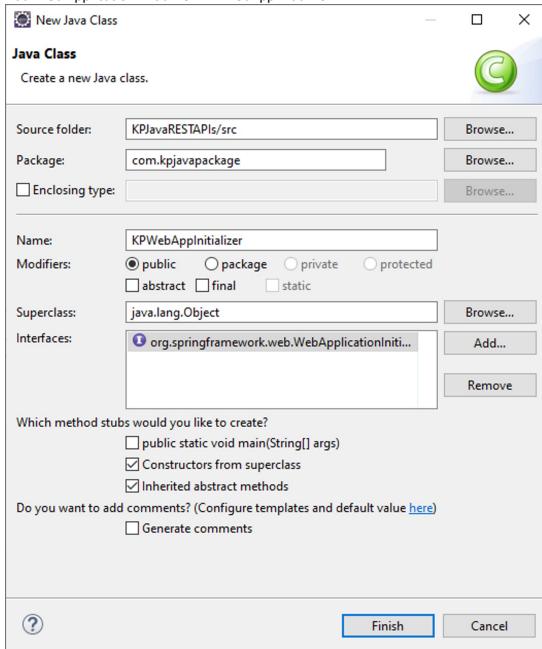
- Configure Build Path -> Add External JARs -> mysql-connector-java-8.0.19.jar



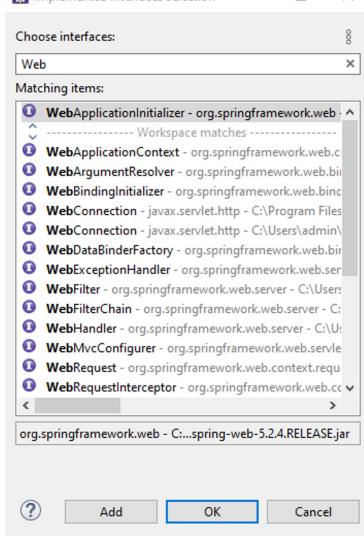
- Java Interface Implementation



- Add Web Application Initializer : KPWebAppInitializer



- Implemented Interfaces Selection



## KP Java Socket Programming

- The process of basic one-way communication between Client and Server using TCP/IP, where Client sends messages to server and the server shows them is called Socket connection.
- There's a lot of low-level stuff that needs to happen for these things to work but the Java API networking package (java.net) takes care of all of that, making network programming.
- <https://www.geeksforgeeks.org/socket-programming-in-java/?ref=ibp>
- Following is the implementation of Client-Server Socket Connection.

```

KPSocketServer.java
1 package com.kpjavaspringboot;
2
3 // A Java program for a Server : KPSocketServer
4 import java.net.*;
5 import java.io.*;
6
7 public class KPSocketServer
8 {
9     //Initialize socket and input stream
10    private Socket socket = null;
11    private ServerSocket server = null;
12    private DataInputStream in = null;
13
14    // constructor with port
15    public KPSocketServer(int port)
16    {
17        // starts server and waits for a connection
18        try
19        {
20            server = new ServerSocket(port);
21            System.out.println("Server started");
22
23            System.out.println("Waiting for a client ...");
24
25            socket = server.accept();
26            System.out.println("Client accepted");
27
28            // takes input from the client socket
29            in = new DataInputStream(
30                new BufferedInputStream(socket.getInputStream()));
31
32        }
33        catch (Exception e)
34        {
35            e.printStackTrace();
36        }
37    }
38
39    // constructor with port
40    public KPSocketServer()
41    {
42        // starts server and waits for a connection
43        try
44        {
45            server = new ServerSocket(8080);
46            System.out.println("Server started");
47
48            System.out.println("Waiting for a client ...");
49
50            socket = server.accept();
51            System.out.println("Client accepted");
52
53            // takes input from the client socket
54            in = new DataInputStream(
55                new BufferedInputStream(socket.getInputStream()));
56
57        }
58        catch (Exception e)
59        {
60            e.printStackTrace();
61        }
62    }
63
64    // takes input from the client socket
65    public String readInput() throws IOException
66    {
67        String str = null;
68
69        if (in != null)
70        {
71            str = in.readUTF();
72        }
73
74        return str;
75    }
76
77    // sends output to the client socket
78    public void writeOutput(String str) throws IOException
79    {
80        if (in != null)
81        {
82            in.writeUTF(str);
83        }
84    }
85
86    // closes the socket
87    public void close() throws IOException
88    {
89        if (in != null)
90        {
91            in.close();
92        }
93
94        if (socket != null)
95        {
96            socket.close();
97        }
98
99    }
100}

```

```

KPSocketClient.java
1 package com.kpjavaspringboot;
2
3 // A Java program for a Client : KPSocketClient
4 import java.net.*;
5 import java.io.*;
6
7 public class KPSocketClient
8 {
9     // initialize socket and input output streams
10    private Socket socket = null;
11    private DataInputStream input = null;
12    private DataOutputStream out = null;
13
14    public static void main(String args[])
15    {
16        // constructor to put ip address and port
17        @SuppressWarnings("deprecation")
18        public KPSocketClient(String address, int port)
19        {
20            // establish a connection
21            try
22            {
23                socket = new Socket(address, port);
24                System.out.println("KP : KPSocketClient Connected");
25
26                // takes input from terminal
27                input = new DataInputStream(System.in);
28
29            }
30            catch (Exception e)
31            {
32                e.printStackTrace();
33            }
34        }
35
36        // constructor to put ip address and port
37        public KPSocketClient()
38        {
39            // establish a connection
40            try
41            {
42                socket = new Socket("127.0.0.1", 8080);
43                System.out.println("KP : KPSocketClient Connected");
44
45                // takes input from terminal
46                input = new DataInputStream(System.in);
47
48            }
49            catch (Exception e)
50            {
51                e.printStackTrace();
52            }
53        }
54
55        // sends output to the client socket
56        public void writeOutput(String str) throws IOException
57        {
58            if (out != null)
59            {
60                out.writeUTF(str);
61            }
62        }
63
64        // reads input from the client socket
65        public String readInput() throws IOException
66        {
67            String str = null;
68
69            if (input != null)
70            {
71                str = input.readUTF();
72            }
73
74            return str;
75        }
76
77        // closes the socket
78        public void close() throws IOException
79        {
80            if (out != null)
81            {
82                out.close();
83            }
84
85            if (input != null)
86            {
87                input.close();
88            }
89
90            if (socket != null)
91            {
92                socket.close();
93            }
94
95        }
96    }
97
98}

```

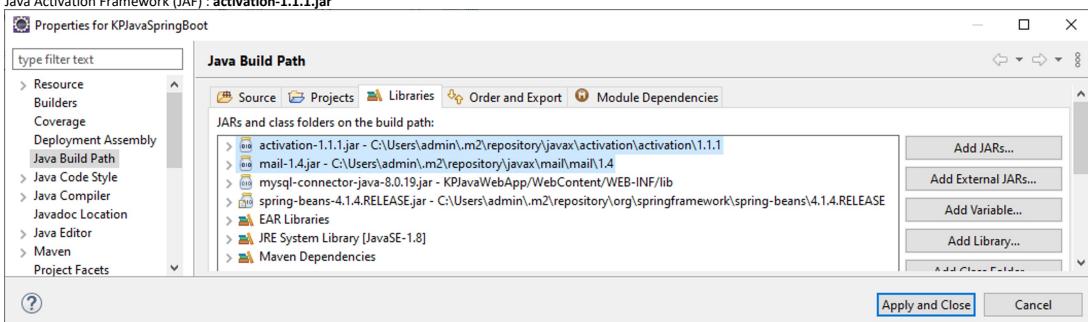
## KP Java SMTP Programming

- Sending Mail through Java Program - SMTP Programming
- Literature :
  - [https://www.tutorialspoint.com/java/java\\_sending\\_email.htm](https://www.tutorialspoint.com/java/java_sending_email.htm)
  - [How to send Emails using Java Program | Send Mail Using Gmail and java Program 2020](#)



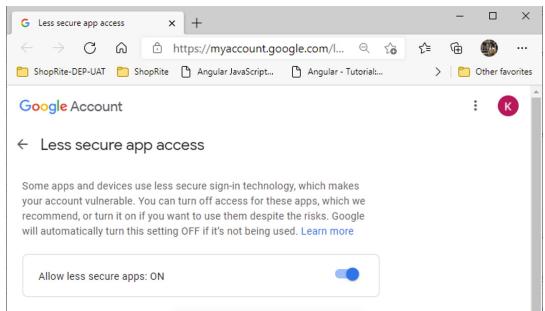
- JARs Required - SMTP Java Program
  - Include following dependencies
 

```
<!-- KP : JavaMail API and Java Activation Framework (JAF) -->
<dependency>
<groupId>javax.mail</groupId>
<artifactId>mail</artifactId>
<version>1.4</version>
</dependency>
<dependency>
<groupId>javax.activation</groupId>
<artifactId>activation</artifactId>
<version>1.1.1</version>
</dependency>
<!-- KP : JavaMail API and Java Activation Framework (JAF)-->
```
- JavaMail API : [mail-1.4.jar](#)
- Java Activation Framework (JAF) : [activation-1.1.1.jar](#)



## Gmail SMTP

- Enable Google Settings to receive and send mails through SMTP Gmail Server
- <https://www.google.com/settings/security/lesssecureapps>
- Allow less secure apps: ON

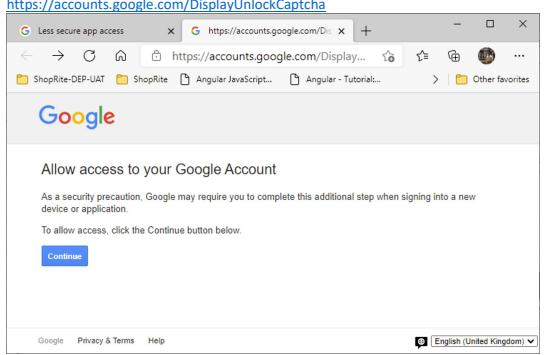
- 

Google Account

← Less secure app access

Some apps and devices use less secure sign-in technology, which makes your account vulnerable. You can turn off access for these apps, which we recommend, or turn it on if you want to use them despite the risks. Google will automatically turn this setting OFF if it's not being used. [Learn more](#)

Allow less secure apps: **ON**

Updated
- <https://accounts.google.com/DisplayUnlockCaptcha>  


Less secure app access https://accounts.google.com/Display...

Allow access to your Google Account

As a security precaution, Google may require you to complete this additional step when signing into a new device or application.

To allow access, click the Continue button below.

**Continue**

KP : Java SMTP Mail : This is the Subject Line!

