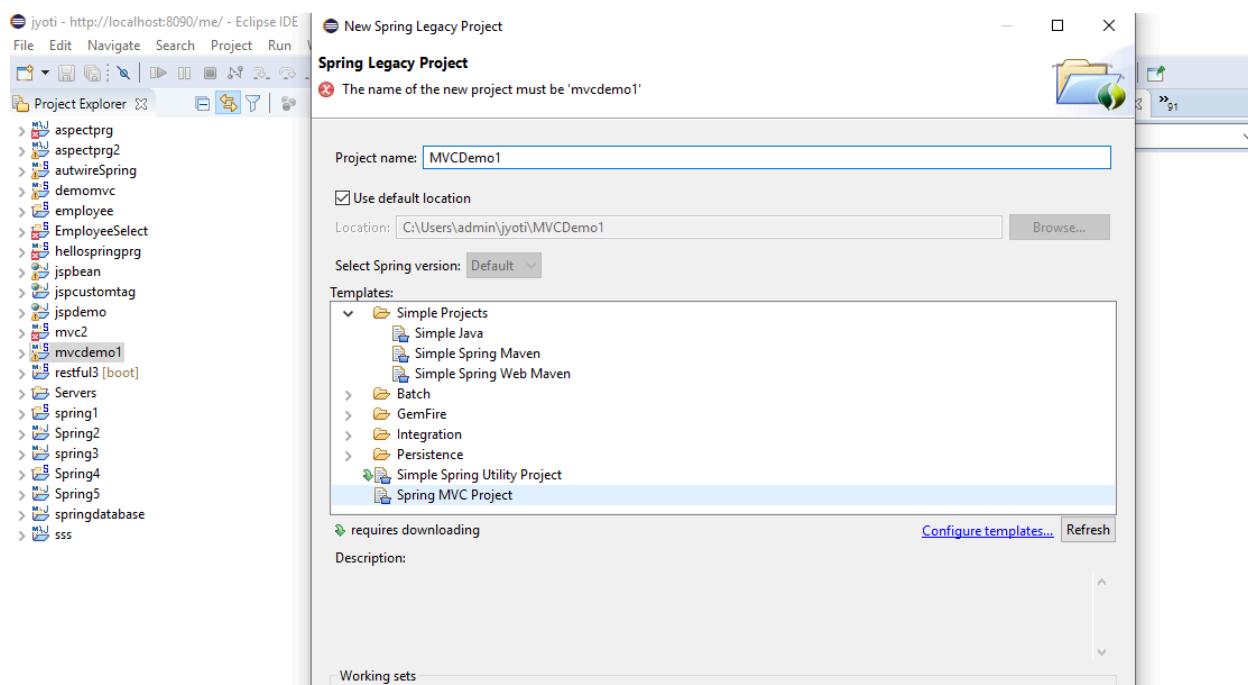
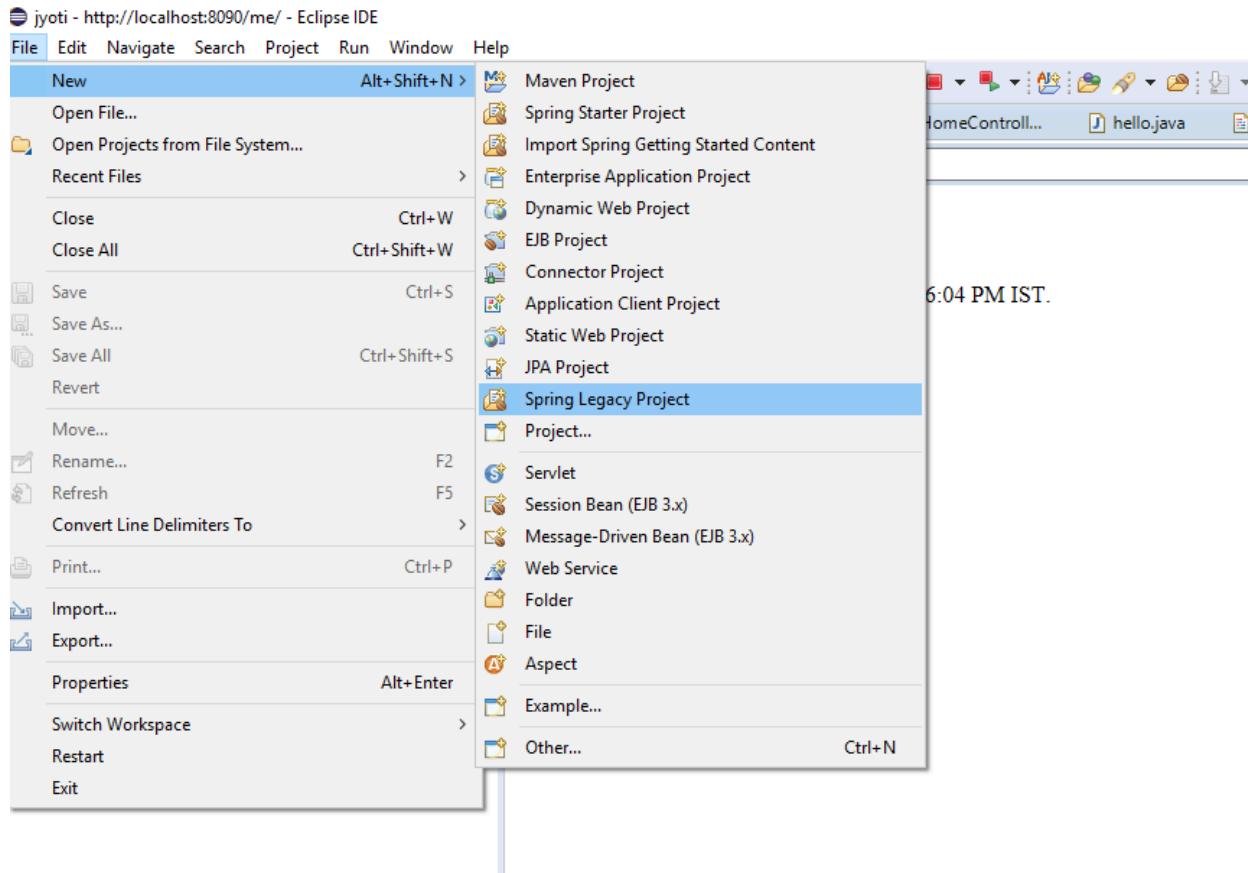
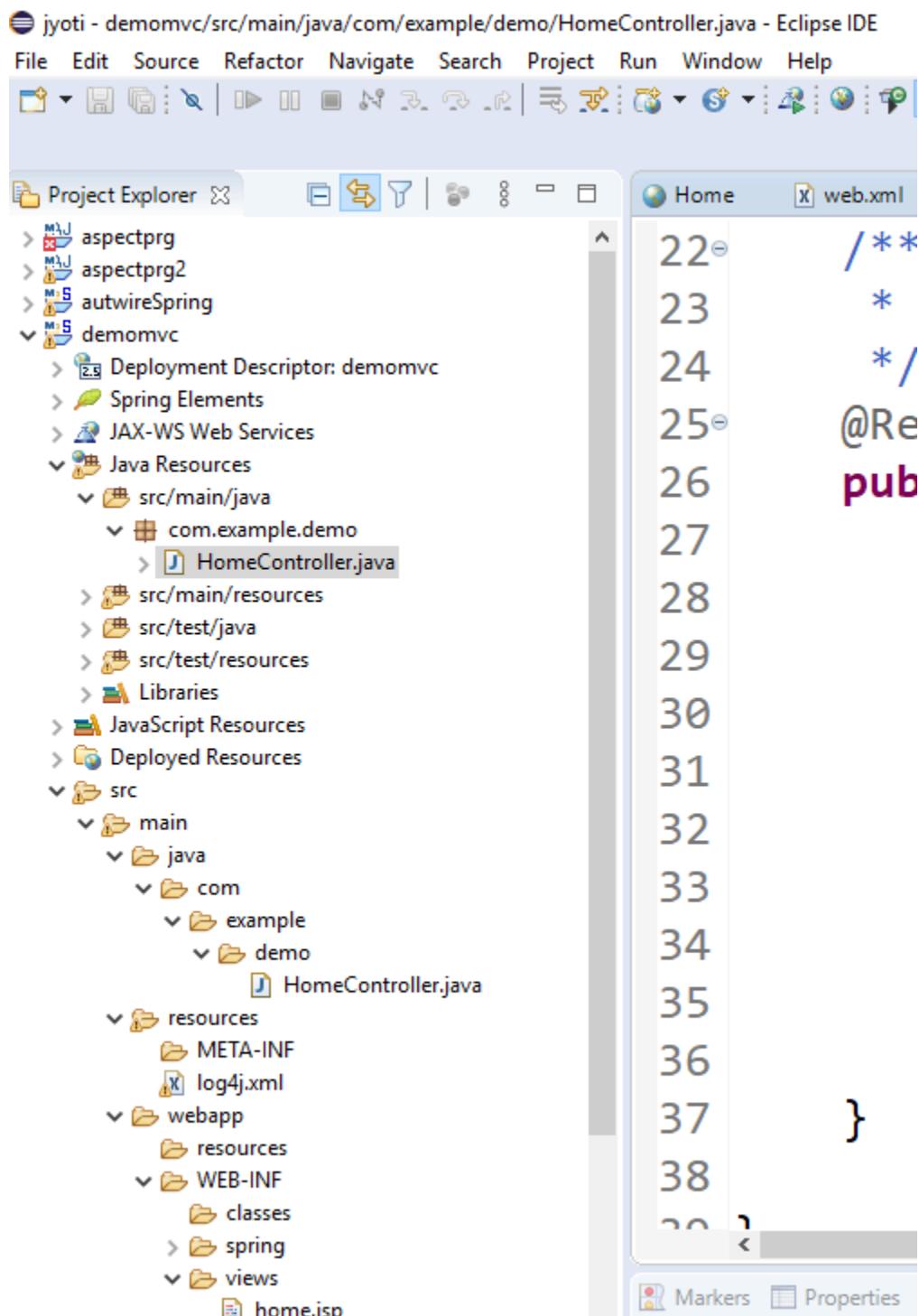


Spring Boot MVC Application

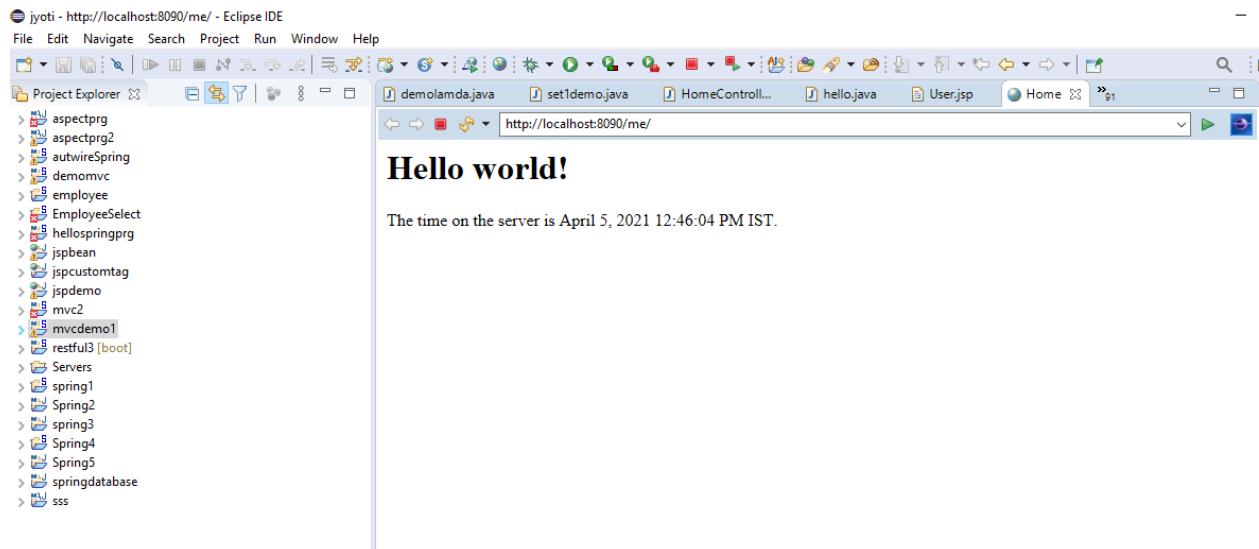




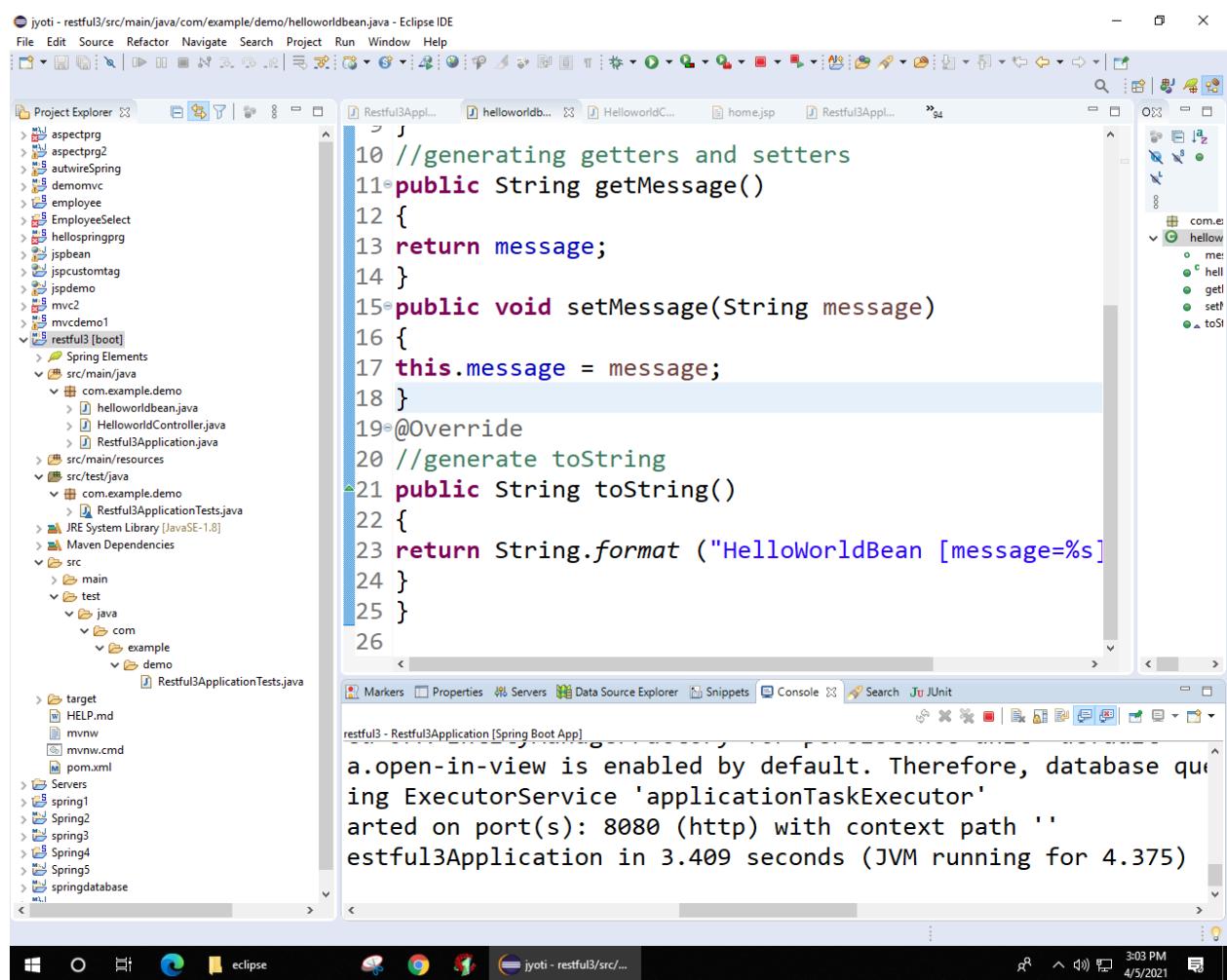
Component	Code
HomeController.java	<pre> package com.example.demo; import java.text.DateFormat; import java.util.Date; import java.util.Locale; import org.slf4j.Logger; import org.slf4j.LoggerFactory; import org.springframework.stereotype.Controller; import org.springframework.ui.Model; import org.springframework.web.bind.annotation.RequestMapping; import org.springframework.web.bind.annotation.RequestMethod; import org.springframework.validation.annotation.Validated; /** * Handles requests for the application home page. */ @Controller public class HomeController { private static final Logger logger = LoggerFactory.getLogger(HomeController.class); /** * Simply selects the home view to render by returning its name. */ @RequestMapping(value = "/", method = RequestMethod.GET) public String home(Locale locale, Model model) { logger.info("Welcome home! The client locale is {}.", locale); Date date = new Date(); } } </pre>

	<pre> DateFormat dateFormat = DateFormat.getDateInstance(DateFormat.LONG, DateFormat.LONG, locale); String formattedDate = dateFormat.format(date); model.addAttribute("serverTime", formattedDate); return "home"; } } </pre>
home.jsp	<pre> <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %> <%@ page session="false" %> <html> <head> <title>Home</title> </head> <body> <h1> Hello world! </h1> <P> The time on the server is \${serverTime}. </P> </body> </html> </pre>

Output



Springboot RESTFull API



```
package com.example.demo;
public class helloworldbean
{
    public String message;
    //constructor of HelloWorldBean
    public helloworldbean(String message)
    {
        this.message=message;
    }
    //generating getters and setters
    public String getMessage()
    {
        return message;
    }
    public void setMessage(String message)
    {
        this.message = message;
    }
    @Override
    //generate toString
    public String toString()
    {
        return String.format ("HelloWorldBean
[message=%s]", message);
    }
}
```

HelloworldController.java

```
package com.example.demo;

import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;
//Controller
@RestController
public class HelloworldController
{
//using get method and hello-world as URI
    @GetMapping(path="/hello-world")
public String helloworld()
{
    return "Hello World";
}
@GetMapping(path="/hello-world-bean")
public helloworldbean helloworldBean()
{
    return new helloworldbean("Hello World");
//constructor of HelloWorldBean
}
}
```

Restful3Application.java

```
package com.example.demo;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class Restful3Application {

    public static void main(String[] args) {
        SpringApplication.run(Restful3Application.class, args);
    }
}
```

Restful3ApplicationTests.java

```
package com.example.demo;

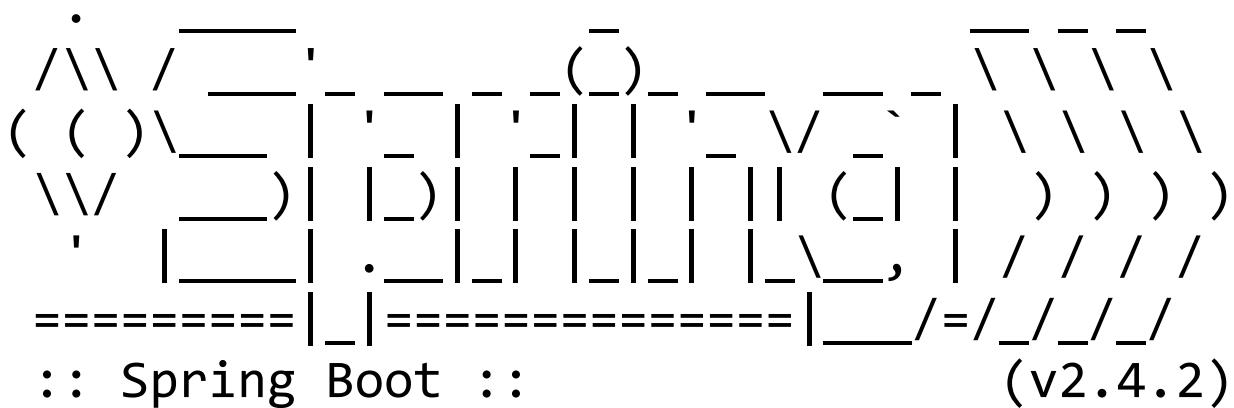
import org.junit.jupiter.api.Test;
import org.springframework.boot.test.context.SpringBootTest;

@SpringBootTest
class Restful3ApplicationTests {

    @Test
    void contextLoads() {
}
```

```
    void contextLoads() {  
        }  
    }  
}
```

Output



```
2021-04-05 15:02:26.922  INFO 7280 --- [main] com.example.demo.Restful3Application : Starting Restful3Application using Java 1.8.0_201 on DESKTOP-F5BFAHU with PID 7280 (C:\Users\admin\jyoti\restful3\target\classes started by admin in C:\Users\admin\jyoti\restful3)
2021-04-05 15:02:26.926  INFO 7280 --- [main] com.example.demo.Restful3Application : No active profile set, falling back to default profiles: default
2021-04-05 15:02:27.839  INFO 7280 --- [main]
```

.s.d.r.c.RepositoryConfigurationDelegate :
Bootstrapping Spring Data JPA repositories
in DEFAULT mode.

2021-04-05 15:02:27.852 INFO 7280 --- [
main]

.s.d.r.c.RepositoryConfigurationDelegate :
Finished Spring Data repository scanning
in 5 ms. Found 0 JPA repository
interfaces.

2021-04-05 15:02:28.283 INFO 7280 --- [
main]

o.s.b.w.embedded.tomcat.TomcatWebServer :
Tomcat initialized with port(s): 8080
(http)

2021-04-05 15:02:28.291 INFO 7280 --- [
main]

o.apache.catalina.core.StandardService :
Starting service [Tomcat]

2021-04-05 15:02:28.291 INFO 7280 --- [
main]

org.apache.catalina.core.StandardEngine :
Starting Servlet engine: [Apache
Tomcat/9.0.41]

2021-04-05 15:02:28.378 INFO 7280 --- [
main] o.a.c.c.C.[Tomcat].[localhost].[/]
: Initializing Spring embedded
WebApplicationContext

```
2021-04-05 15:02:28.378  INFO 7280 --- [main]
w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext: initialization completed in 1409 ms
2021-04-05 15:02:28.568  INFO 7280 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Starting...
2021-04-05 15:02:28.700  INFO 7280 --- [main] com.zaxxer.hikari.HikariDataSource : HikariPool-1 - Start completed.
2021-04-05 15:02:28.752  INFO 7280 --- [main]
o.hibernate.jpa.internal.util.LogHelper : HHH000204: Processing PersistenceUnitInfo [name: default]
2021-04-05 15:02:28.811  INFO 7280 --- [main] org.hibernate.Version : HHH000412: Hibernate ORM core version 5.4.27.Final
2021-04-05 15:02:28.989  INFO 7280 --- [main]
o.hibernate.annotations.common.Version : HCANN000001: Hibernate Commons Annotations {5.1.2.Final}
2021-04-05 15:02:29.157  INFO 7280 --- [main] org.hibernate.dialect.Dialect
```

```
: HHH000400: Using dialect:  
org.hibernate.dialect.H2Dialect  
2021-04-05 15:02:29.319  INFO 7280 --- [  
main] o.h.e.t.j.p.i.JtaPlatformInitiator  
: HHH000490: Using JtaPlatform  
implementation:  
[org.hibernate.engine.transaction.jta.plat  
form.internal.NoJtaPlatform]  
2021-04-05 15:02:29.332  INFO 7280 --- [  
main]  
j.LocalContainerEntityManagerFactoryBean :  
Initialized JPA EntityManagerFactory for  
persistence unit 'default'  
2021-04-05 15:02:29.423  WARN 7280 --- [  
main]  
JpaBaseConfiguration$JpaWebConfiguration :  
spring.jpa.open-in-view is enabled by  
default. Therefore, database queries may  
be performed during view rendering.  
Explicitly configure  
spring.jpa.open-in-view to disable this  
warning  
2021-04-05 15:02:29.574  INFO 7280 --- [  
main]  
o.s.s.concurrent.ThreadPoolTaskExecutor :  
Initializing ExecutorService  
'applicationTaskExecutor'
```

```
2021-04-05 15:02:29.802  INFO 7280 --- [  
main]  
o.s.b.w.embedded.tomcat.TomcatWebServer :  
Tomcat started on port(s): 8080 (http)  
with context path ''  
2021-04-05 15:02:29.810  INFO 7280 --- [  
main] com.example.demo.Restful3Application  
: Started Restful3Application in 3.409  
seconds (JVM running for 4.375)
```

we will see the steps to set up a Spring Boot application with PostgreSQL. We will have a simple CRUD operation in Postgres Database by exposing the application via Rest API. We will use POSTMAN to test the application.

Setting up Postgres Server

- Download the Postgres server from the link:
<https://www.postgresql.org/download/>
- Run the installer. It will also ask the password for the superuser: *postgres*
- Click on pgAdmin4.exe located inside the PostgreSQL folder inside Program Files.

Setting up Spring Boot Application

Prerequisite:

Have JDK 1.8 installed

- Download a sample Spring Boot project from <https://start.spring.io/>
- Update the pom.xml as below:

```
1  <?xml version="1.0" encoding="UTF-8"?>
2
3  <project xmlns="http://maven.apache.org/POM/4.0.0"
4    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5    xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
6    http://maven.apache.org/xsd/maven-4.0.0.xsd">
7
8    <modelVersion>4.0.0</modelVersion>
9
10   <parent>
11
12     <groupId>org.springframework.boot</groupId>
13
14     <artifactId>spring-boot-starter-parent</artifactId>
```

```
8 <version>2.1.1.RELEASE</version>
9 <relativePath /> <!-- lookup parent from repository -->
10 </parent>
11 <groupId>com.sample</groupId>
12 <artifactId>postgress</artifactId>
13 <version>0.0.1-SNAPSHOT</version>
14 <name>postgress</name>
15 <description>Demo project for Spring Boot</description>
16
17 <properties>
18 <java.version>1.8</java.version>
19 </properties>
20
21 <dependencies>
22 <dependency>
23 <groupId>org.springframework.boot</groupId>
24 <artifactId>spring-boot-starter</artifactId>
25 </dependency>
26 <dependency>
27 <groupId>org.springframework.boot</groupId>
28 <artifactId>spring-boot-starter-web</artifactId>
29 </dependency>
30 <dependency>
31 <groupId>org.springframework.boot</groupId>
32 <artifactId>spring-boot-starter-jdbc</artifactId>
33 </dependency>
34 <dependency>
35 <groupId>org.postgresql</groupId>
36 <artifactId>postgresql</artifactId>
37
```

```

<scope>runtime</scope>                                38
</dependency>                                         39
<dependency>                                         40
<groupId>org.springframework.boot</groupId>          41
<artifactId>spring-boot-starter-test</artifactId>    42
<scope>test</scope>                                    43
</dependency>                                         44
</dependencies>                                         45
<build>                                              46
<plugins>                                            47
<plugin>                                             48
<groupId>org.springframework.boot</groupId>          49
<artifactId>spring-boot-maven-plugin</artifactId>    50
</plugin>                                             51
</plugins>                                            52
</build>                                              53
</project>                                           54

```

spring-boot-starter-jdbc artifact will give all the spring jdbc related jars

org.postgresql.postgresql will have the dependency of postgres jdbc driver in runtime.

- Create a *schema.sql* in resource folder. An employee table will be created in server startup. This can be ignored if you don't want the initial database to be configured during server start. Generally, for building a production-ready application, this step can be ignored as tables will be created with script directly in the DB.

```

CREATE TABLE employee                               1
(                                                 2
employeeName varchar(100) NOT NULL,              3

```

```
employeeId varchar(11) NOT NULL ,  
employeeAddress varchar(100) DEFAULT NULL,  
employeeEmail varchar(100) DEFAULT NULL,  
PRIMARY KEY (employeeId)  
);
```

- Create *data.sql* in resource folder for loading the first set of employee during startup. Can be skipped otherwise:

```
insert into employee(employeeId, employeeName ,  
employeeAddress,employeeEmail) values('1','Jack','USA','jack@gmail.com');
```

- Changes in application.properties to configure the data source with URL, username, and password of the Postgres DB. 5432 is the default port of Postgres. Hibernate will automatically pick up the postgresSQLDialect.

```
1 spring.jpa.properties.hibernate.dialect = org.hibernate.dialect.PostgreSQLDialect
2
3 spring.jpa.hibernate.ddl-auto=none
4
5 spring.jpa.hibernate.show-sql=true
6
7 spring.datasource.url=jdbc:postgresql://localhost:5432/postgres
8
9 spring.datasource.username=postgres
10
11 spring.datasource.password=admin
12
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```

`spring.jpa.hibernate.ddl-auto` will turn off the hibernate auto-creation of the tables from the entity objects. Generally, Hibernate runs it if there is an Entity defined. But we will be using a native SQL query with JdbcTemplate, hence, we can turn this off as we will not be creating an Entity.

`spring.datasource.initialization-mode` is marked as always as we want initialization of the database to happen on every startup. This is optional and made for this sample purpose.

`spring.datasource.initialize=true` will mark the initialization to be true.

`spring.datasource.continue-on-error=true` will continue application startup in spite of any errors in data initialization.

`spring.datasource.schema` is the schema path that needs to be initialized.

`spring.datasource.url` URL of the Postgres DB. It can be a remote DB as well.

`spring.datasource.username` username for the database.

`spring.datasource.password` password for the database.

- Create a dao interface and dao implementation.

```
1 package com.sample.postgress.dao;
2
3
4 import java.util.List;
5
6 import com.sample.postgress.entity.Employee;
7
8 public interface EmployeeDao {
9
10    List<Employee> findAll();
11
12    void insertEmployee(Employee emp);
13
14    void updateEmployee(Employee emp);
15
16    void executeUpdateEmployee(Employee emp);
17
18    public void deleteEmployee(Employee emp);
19}
20
21 package com.sample.postgress.dao;
```

```
3
import java.sql.PreparedStatement;
4
import java.sql.SQLException;
5
import java.util.HashMap;
6
import java.util.List;
7
import java.util.Map;
8
9
import org.springframework.dao.DataAccessException;
10
import org.springframework.jdbc.core.PreparedStatementCallback;
11
import org.springframework.jdbc.core.namedparam.MapSqlParameterSource;
12
import org.springframework.jdbc.core.namedparam.NamedParameterJdbcTemplate;
13
import org.springframework.jdbc.core.namedparam.SqlParameterSource;
14
import org.springframework.jdbc.support.GeneratedKeyHolder;
15
import org.springframework.jdbc.support.KeyHolder;
16
import org.springframework.stereotype.Repository;
17
18
import com.sample.postgress.entity.Employee;
19
import com.sample.postgress.mapper.EmployeeRowMapper;
20
@Repository
21
public class EmployeeDaoImpl implements EmployeeDao{
22
23
public EmployeeDaoImpl(NamedParameterJdbcTemplate template) {
24
    this.template = template;
25
}
26
NamedParameterJdbcTemplate template;
27
28
@Override
29
public List<Employee> findAll() {
30
    return template.query("select * from employee", new EmployeeRowMapper());
31
}
32
```

```

@Override 33
public void insertEmployee(Employee emp) { 34
    final String sql = "insert into employee(employeeId, employeeName , 35
employeeAddress,employeeEmail)
values(:employeeId,:employeeName,:employeeEmail,:employeeAddress)";
    KeyHolder holder = new GeneratedKeyHolder(); 36
    SqlParameterSource param = new MapSqlParameterSource() 37
        .addValue("employeeId", emp.getEmployeeId()) 38
        .addValue("employeeName", emp.getEmployeeName()) 39
        .addValue("employeeEmail", emp.getEmployeeEmail()) 40
        .addValue("employeeAddress", emp.getEmployeeAddress()); 41
    template.update(sql,param, holder); 42
} 43
} 44
} 45
} 46
@Override 47
public void updateEmployee(Employee emp) { 48
    final String sql = "update employee set employeeName=:employeeName,
employeeAddress=:employeeAddress, employeeEmail=:employeeEmail where
employeeId=:employeeId"; 49
    KeyHolder holder = new GeneratedKeyHolder(); 50
    SqlParameterSource param = new MapSqlParameterSource() 51
        .addValue("employeeId", emp.getEmployeeId()) 52
        .addValue("employeeName", emp.getEmployeeName()) 53
        .addValue("employeeEmail", emp.getEmployeeEmail()) 54
        .addValue("employeeAddress", emp.getEmployeeAddress()); 55
    template.update(sql,param, holder); 56
} 57
} 58
} 59
}

```

```
60
@Override
61
public void executeUpdateEmployee(Employee emp) {
62
    final String sql = "update employee set employeeName=:employeeName,
employeeAddress=:employeeAddress, employeeEmail=:employeeEmail where
employeeId=:employeeId";
63
}
64
65
Map<String, Object> map=new HashMap<String, Object>();
66
map.put("employeeId", emp.getEmployeeId());
67
map.put("employeeName", emp.getEmployeeName());
68
map.put("employeeEmail", emp.getEmployeeEmail());
69
map.put("employeeAddress", emp.getEmployeeAddress());
70
}
71
template.execute(sql, map, new PreparedStatementCallback<Object>() {
72
    @Override
73
    public Object doInPreparedStatement(PreparedStatement ps)
74
        throws SQLException, DataAccessException {
75
            return ps.executeUpdate();
76
        }
77
    });
78
}
79
80
}
81
82
@Override
83
public void deleteEmployee(Employee emp) {
84
    final String sql = "delete from employee where employeeId=:employeeId";
85
}
86
}
87
Map<String, Object> map=new HashMap<String, Object>();
88
```

```

map.put("employeeId", emp.getEmployeeId());          89
[REDACTED]                                         90
template.execute(sql, map, new PreparedStatementCallback<Object>() {           91
    @Override                                         92
    public Object doInPreparedStatement(PreparedStatement ps)           93
        throws SQLException, DataAccessException {           94
            return ps.executeUpdate();           95
        }                                         96
    });                                         97
[REDACTED]                                         98
}                                         99
}                                         100
}                                         101
}

```

- findAll() retrieves all the employee and then map the resultset to a Employee Object using RowMapper described below .
- insertEmployee() will insert an employee using `template.update(sql,param,holder)` where param is the SqlParameterSource, which will map the values dynamically in the query marked with a colon. GeneratedKeyHolder will return an auto-generated value when data is inserted.
- executeUpdateEmployee() will update the employee using `template.execute`

```

1 template.execute(sql, map, new PreparedStatementCallback<Object>() {
2
3     @Override
4     public Object doInPreparedStatement(PreparedStatement ps)
5         throws SQLException, DataAccessException {
6         return ps.executeUpdate();
7     }
8 });

```

- EmployeeRowMapper to map the result set retrieved from the *select* query with the POJO.

```

1 package com.sample.postgress.mapper;
2
3
4 import java.sql.ResultSet;
5
6 import java.sql.SQLException;
7
8 import org.springframework.jdbc.core.RowMapper;
9
10
11 public class EmployeeRowMapper implements RowMapper<Employee> {
12
13     @Override
14     public Employee mapRow(ResultSet rs, int arg1) throws SQLException {
15         Employee emp = new Employee();
16         emp.setEmployeeId(rs.getString("employeeId"));
17         emp.setEmployeeName(rs.getString("employeeName"));
18         emp.setEmployeeEmail(rs.getString("employeeEmail"));
19
20         return emp;
21     }
22
23 }

```

- You can create a controller and a service class as follows:

```

1 package com.sample.postgress.controller;
2
3
4 import java.util.List;
5

```

```
5
import javax.annotation.Resource;
6
7
import org.springframework.web.bind.annotation.DeleteMapping;
8
import org.springframework.web.bind.annotation.GetMapping;
9
import org.springframework.web.bind.annotation.PostMapping;
10
import org.springframework.web.bind.annotation.PutMapping;
11
import org.springframework.web.bind.annotation.RequestBody;
12
import org.springframework.web.bind.annotation.RequestMapping;
13
import org.springframework.web.bind.annotation.RestController;
14
15
import com.sample.postgress.entity.Employee;
16
import com.sample.postgress.service.EmployeeService;
17
18
@RestController
19
@RequestMapping("/postgressApp")
20
public class ApplicationController {
21
22
@Resource
23
EmployeeService employeeService;
24
25
@GetMapping(value = "/employeeList")
26
public List<Employee> getEmployees() {
27
return employeeService.findAll();
28
}
29
30
@PostMapping(value = "/createEmp")
31
public void createEmployee(@RequestBody Employee emp) {
32
employeeService.insertEmployee(emp);
33
}
34
```

```

35
}
36
@PutMapping(value = "/updateEmp")
37
public void updateEmployee(@RequestBody Employee emp) {
38
    employeeService.updateEmployee(emp);
39
}
40
}
41
@PutMapping(value = "/executeUpdateEmp")
42
public void executeUpdateEmployee(@RequestBody Employee emp) {
43
    employeeService.executeUpdateEmployee(emp);
44
}
45
}
46
}
47
@DeleteMapping(value = "/deleteEmpById")
48
public void deleteEmployee(@RequestBody Employee emp) {
49
    employeeService.deleteEmployee(emp);
50
}
51
}
52
}
53
}
54
}

```

Now, let's use POSTMAN to validate the changes:

Test 1: Get the list of employees

<http://localhost:8080/postgressApp/employeeList>

The screenshot shows the Postman application interface. At the top, there is a header bar with 'GET' selected, the URL 'http://localhost:8080/postgressApp/employeeList', a 'Params' button, and a 'Send' button. Below the header, there are tabs for 'Authorization', 'Headers', 'Body', 'Pre-request Script', and 'Tests'. The 'Authorization' tab is currently active, with a dropdown menu set to 'No Auth'. In the main content area, there are tabs for 'Body', 'Cookies', 'Headers (3)', and 'Test Results'. The 'Body' tab is active, showing a JSON response. The response is a single-element array [] containing one object with the following fields:

```
1 [  
2 {  
3   "employeeId": "1",  
4   "employeeName": "Jack",  
5   "employeeEmail": "jack@gmail.com",  
6   "employeeAddress": null  
7 }  
8 ]
```

The status bar at the bottom right indicates 'Status: 200 OK'.

Test 2: Create An employee

<http://localhost:8080/postgressApp/createEmp>

POST Params

Authorization Headers (1) Body Pre-request Script Tests

form-data x-www-form-urlencoded raw binary

```

1 {
2   "employeeId": "212555",
3   "employeeName": "JONES",
4   "employeeEmail": "JONES@gmail.com",
5   "employeeAddress": "CANADA"
6 }

```

Body Cookies Headers (2) Test Results Status: 200 OK Time: 3ms

Pretty Raw Previous

We see an entry got inserted with JONES.

pgAdmin 4 File Object Tools Help

Browser Servers (2) PostgreSQL 10 Databases (1) postgres Casts Catalogs Event Triggers Extensions Foreign Data Wrappers Languages Schemas (1) public Collations Domains FTS Configurations FTS Dictionaries FTS Parsers FTS Templates Foreign Tables Functions Materialized Views Sequences Tables (1)

Dashboard Properties SQL Statistics Dependencies Dependents Edit Data - postg... Edit Data - postg... Edit ...

postgres on postgres@PostgreSQL 10

```

1 SELECT * FROM public.employee
2 ORDER BY employeeid ASC

```

Data Output Explain Messages Notifications Query History

	employeeName	employeeId	employeeAddress	employeeEmail
1	Jack	1	USA	jack@gmail.com
2	JONES	212555	JONES@gmail.com	CANADA

Test 3: Update an Employee

<http://localhost:8080/postgressApp/executeUpdateEmp>

The screenshot shows the Postman interface. At the top, there is a header bar with 'PUT' selected, the URL 'http://localhost:8080/postgressApp/executeUpdateEmp', and buttons for 'Params', 'Send', and 'Save'. Below the header, there are tabs for 'Authorization', 'Headers (1)', 'Body' (which is currently selected), 'Pre-request Script', and 'Tests'. Under 'Body', there are options for 'form-data', 'x-www-form-urlencoded', 'raw', 'binary', and 'JSON (application/json)'. The 'raw' tab is selected, and the JSON payload is:

```
1 {  
2   "employeeId": "212555",  
3   "employeeName": "jones",  
4   "employeeEmail": "jones@gmail.com",  
5   "employeeAddress": "USA"  
6 }
```

Below the body section, there is a large empty area for the response. At the bottom of the screen, there is a navigation bar with tabs: 'Data Output' (which is selected), 'Explain', 'Messages', 'Notifications', and 'Query History'. The 'Data Output' tab displays a table with four columns: 'employeeid', 'employeename', 'employeeaddress', and 'employeeemail'. The table has two rows of data:

	employeename character varying (100)	employeeid [PK] character varying (11)	employeeaddress character varying (100)	employeeemail character varying (100)
1	Jack	1	USA	jack@gmail.com
2	jones	212555	USA	jones@gmail.com

Test 4: Delete Employee

<http://localhost:8080/postgressApp/deleteEmpById>

DELETE ▼ http://localhost:8080/postgressApp/deleteEmpById Params Send ▼

Authorization Headers (1) Body ● Pre-request Script Tests

form-data x-www-form-urlencoded raw binary **JSON (application/json)** ▼

```

1 {  

2   "employeeId": "212555"  

3 }  

4

```

Body Cookies Headers (2) Test Results Status: 200 OK

Pretty Raw Preview Text ▾

Dashboard Properties SQL Statistics Dependencies Dependents Edit Data - postg... Edit

postgres on postgres@PostgreSQL 10

```

1 SELECT * FROM public.employee
2 ORDER BY employeeid ASC

```

Data Output Explain Messages Notifications Query History

	employeename character varying (100)	employeeid [PK] character varying (11)	employeeaddress character varying (100)	employeeemail character varying (100)
1	Jack	1	USA	jack@gmail.com

Conclusion

We have learned how to set up a Spring Boot application with Postgres and how to do a CRUD operation.