

FIAP GRADUAÇÃO

DIGITAL BUSINESS ENABLEMENT

Prof. THIAGO T. I. YAMAMOTO

PROJETO RESTFUL E JPA

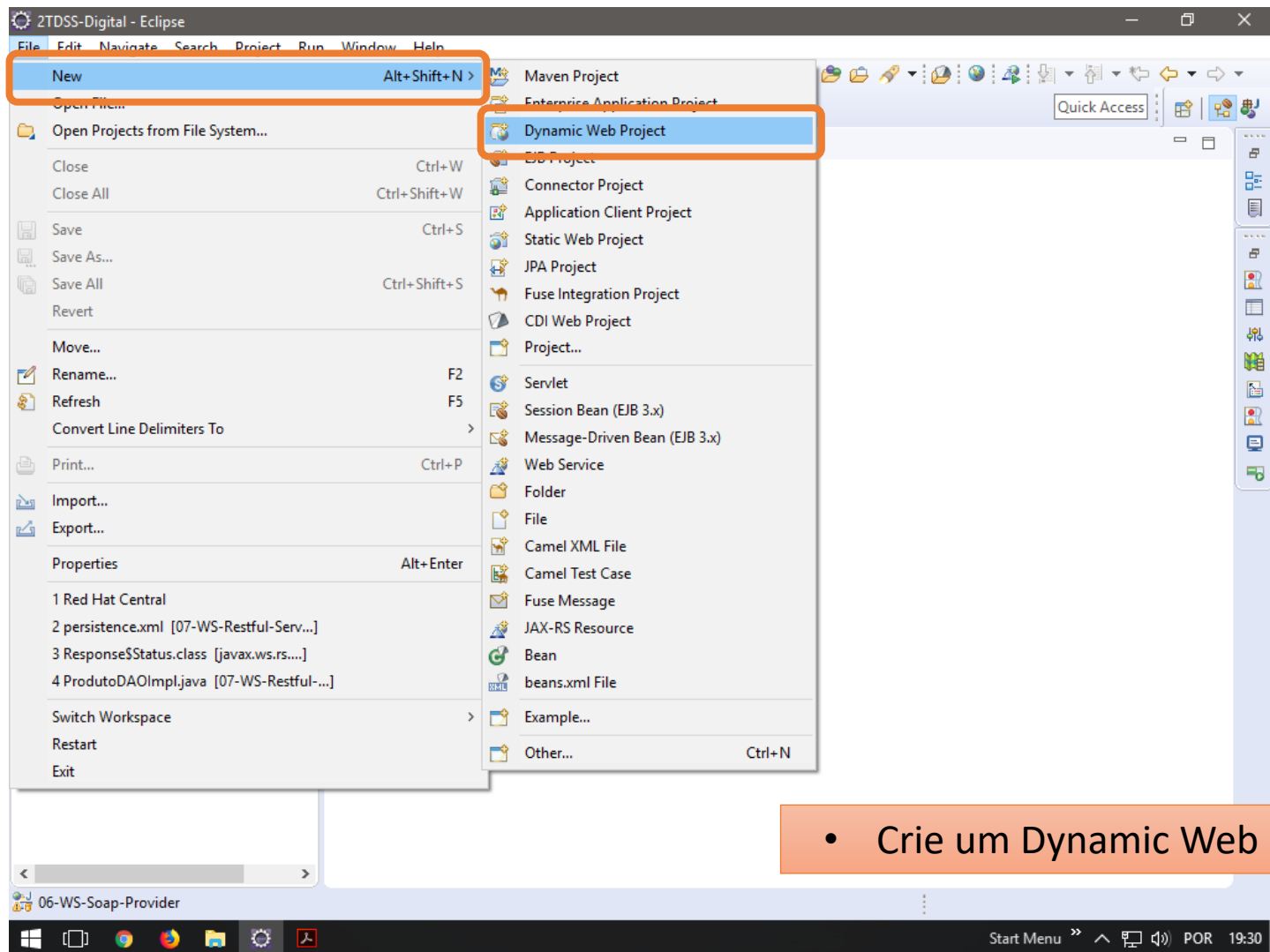


thiagoyama



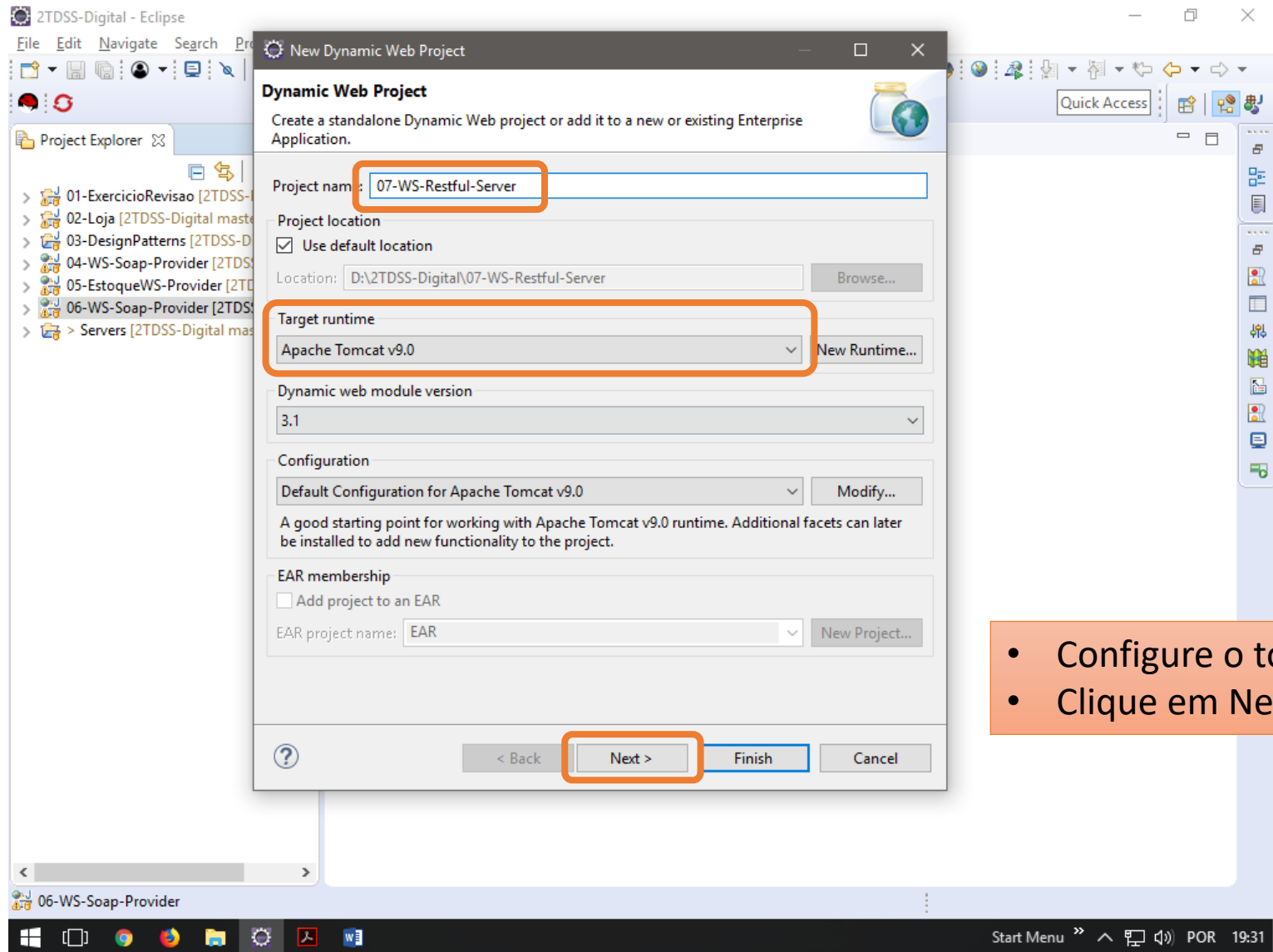
thiagoyama@gmail.com

DYNAMIC WEB PROJECT



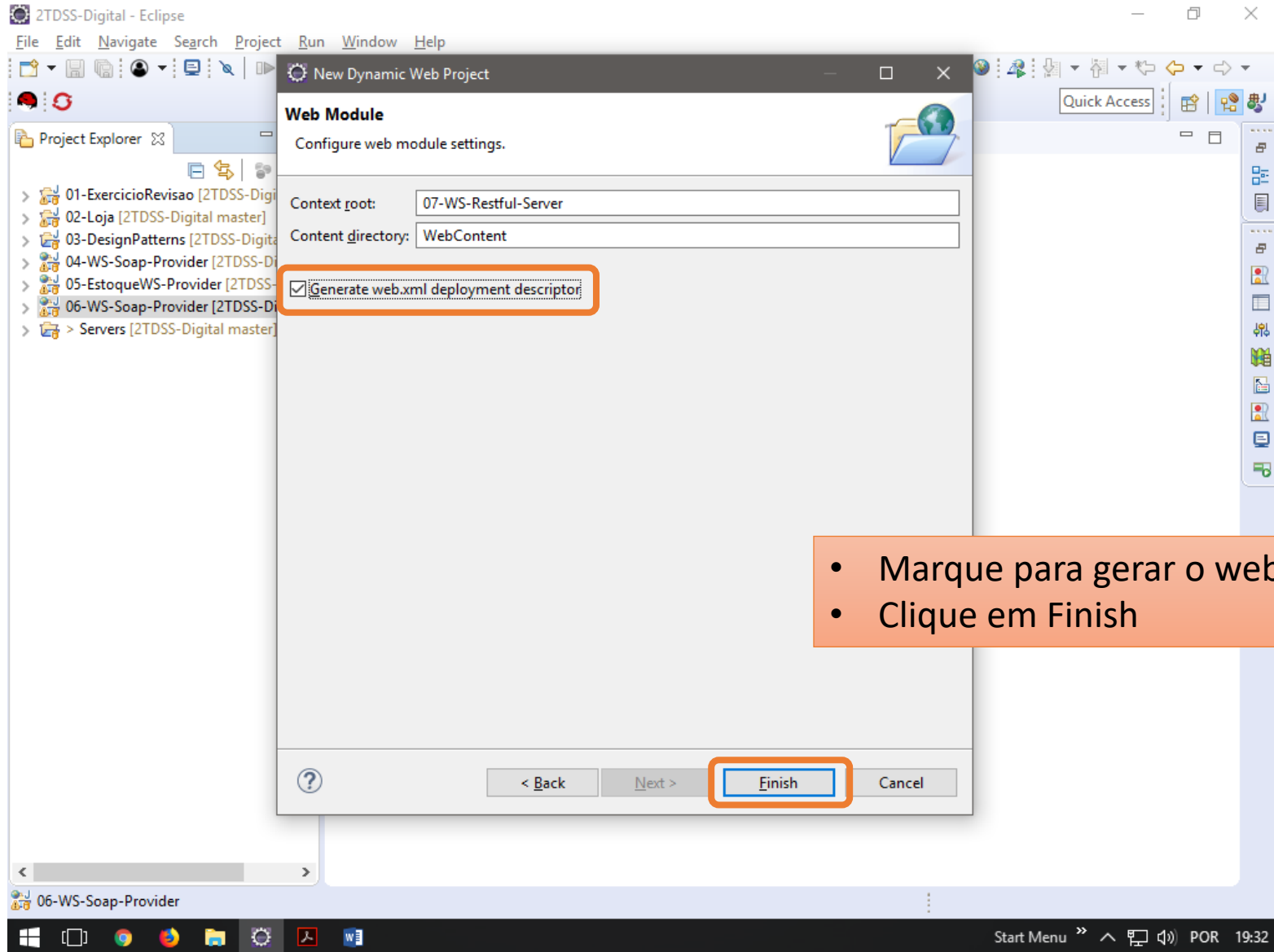
- Crie um Dynamic Web Project

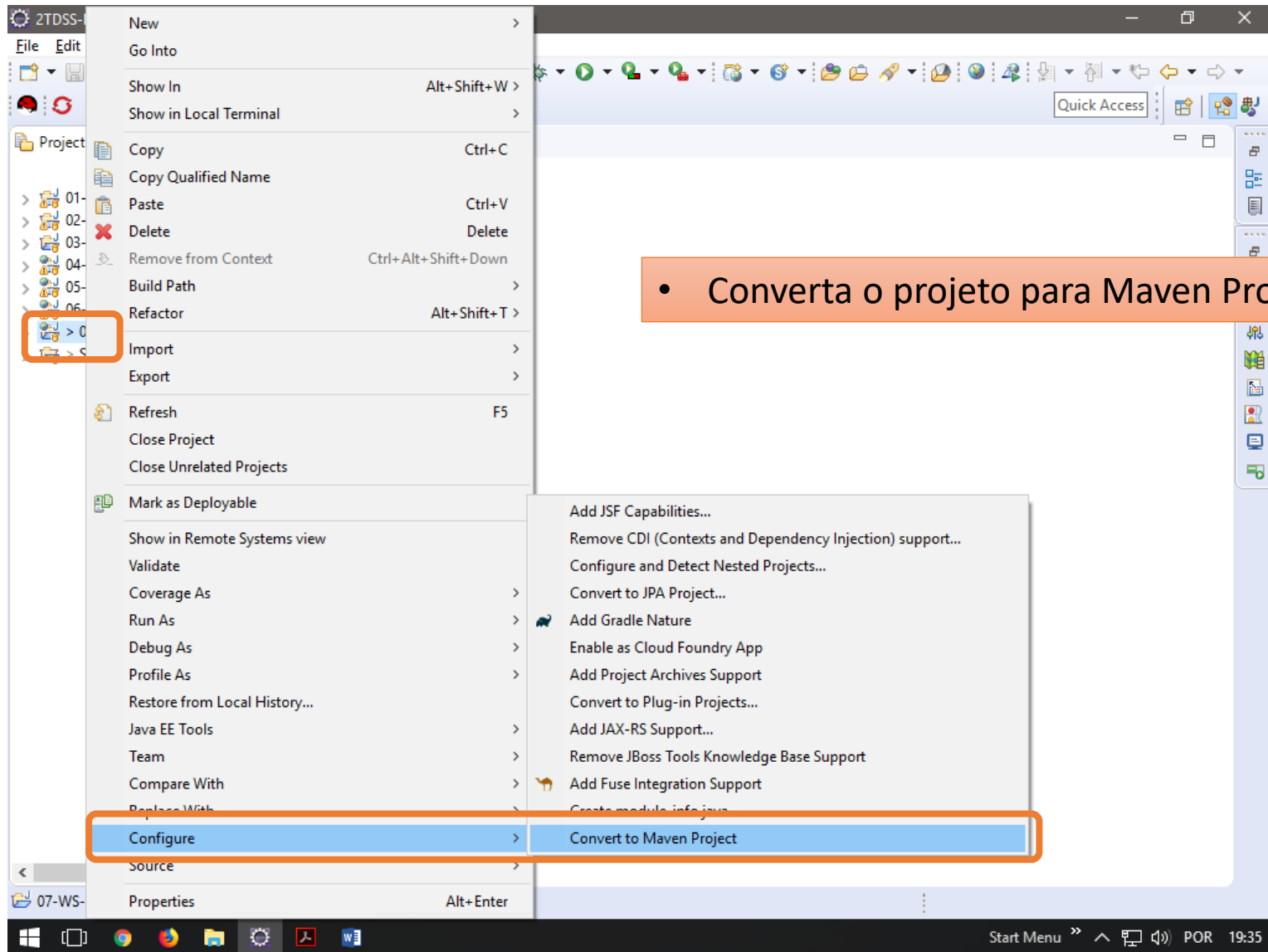
DYNAMIC WEB PROJECT

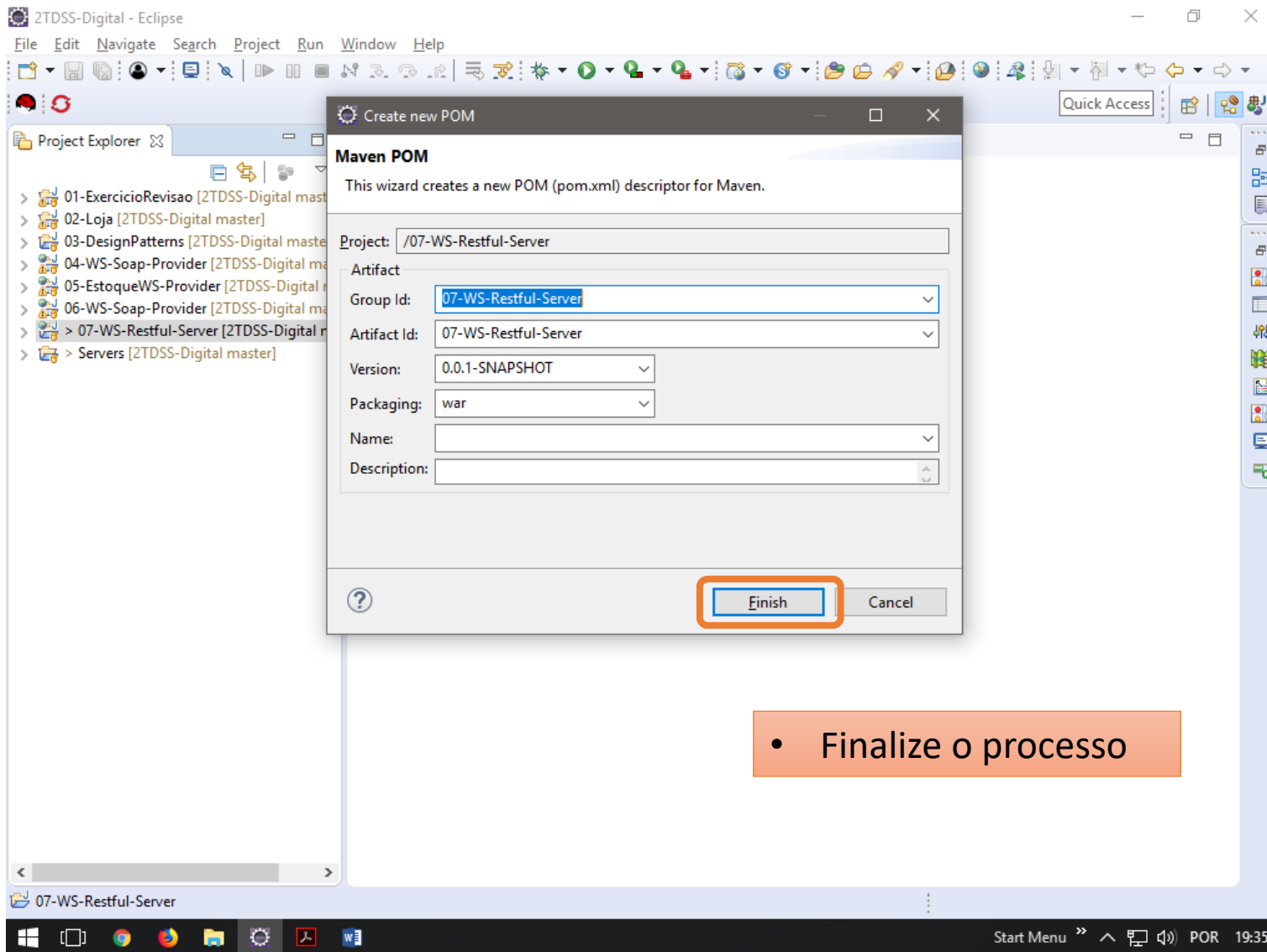


- Configure o tomcat
- Clique em Next

DYNAMIC WEB PROJECT







- Finalize o processo

MAVEN PROJECT

Convert to Maven Dependencies

Identify existing project references as Maven dependencies. Double-click on a Maven dependency to edit its details

Some selected dependencies can not be resolved. Click [here](#) to configure repositories in your settings.xml.

Filter dependencies

| Project Reference | Maven Dependency |
|--|--|
| <input checked="" type="checkbox"/> annotations-api.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-annotations-ap... |
| <input checked="" type="checkbox"/> catalina-ant.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-catalina-ant:9.0... |
| <input checked="" type="checkbox"/> catalina-ha.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-catalina-ha:9.0... |
| <input checked="" type="checkbox"/> catalina-storeconfig.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-storeconfig:9.0... |
| <input checked="" type="checkbox"/> catalina-tribes.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-tribes:9.0.2.jar |
| <input checked="" type="checkbox"/> catalina.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-catalina:9.0.2.jar |
| <input checked="" type="checkbox"/> ecj-4.6.3.jar | <input type="checkbox"/> org.eclipse.jdt:ecj:3.12.3.jar |
| <input checked="" type="checkbox"/> el-api.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-el-api:9.0.2.jar |
| <input checked="" type="checkbox"/> jasper-el.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-jasper-el:9.0.2.jar |
| <input checked="" type="checkbox"/> jasper.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-jasper:9.0.2.jar |
| <input checked="" type="checkbox"/> jaspic-api.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-jaspic-api:9.0.2... |
| <input checked="" type="checkbox"/> jsp-api.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-jsp-api:9.0.2.jar |
| <input checked="" type="checkbox"/> servlet-api.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-servlet-api:9.0.2... |
| <input checked="" type="checkbox"/> tomcat-api.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-api:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-coyote.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-coyote:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-dbcp.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-dbcp:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-i18n-es.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-i18n-es:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-i18n-fr.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-i18n-fr:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-i18n-ja.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-i18n-ja:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-jdbc.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-jdbc:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-jni.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-jni:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-util-scan.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-util-scan:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-util.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-util:9.0.2.jar |
| <input checked="" type="checkbox"/> tomcat-websocket.jar | <input type="checkbox"/> org.apache.tomcat:tomcat-websocket:9.0.2... |

☐ Delete original references from project

Buttons: Select All, Deselect All, Edit ..., Identify dependencies, Stop identification, Finish, Skip Dependency Conversion

- Escolha Skip para não adicionar as bibliotecas do tomcat no maven

DEPENDÊNCIAS DO RESTFUL – POM.XML

- Configure as dependências no pom.xml

The screenshot shows the Eclipse IDE interface. The Project Explorer on the left lists several projects, with '07-WS-Restful-Server' selected. The main editor displays the 'pom.xml' file for this project. The XML code is as follows:

```
25         </plugin>
26     </plugins>
27 </build>
28 <dependencies>
29     <dependency>
30         <groupId>org.glassfish.jersey.c
31         <artifactId>jersey-server</arti
32         <version>2.17</version>
33     </dependency>
34     <dependency>
35         <groupId>org.glassfish.jersey.c
36         <artifactId>jersey-container-se
37         <version>2.17</version>
38     </dependency>
39     <dependency>
40         <groupId>org.glassfish.jersey.m
41         <artifactId>jersey-media-j
```

The 'Overview' tab at the bottom shows the 'pom.xml' file. The status bar at the bottom indicates 'project/#text', 'Writable', 'Smart Insert', '44 : 20', and 'Start Menu'.

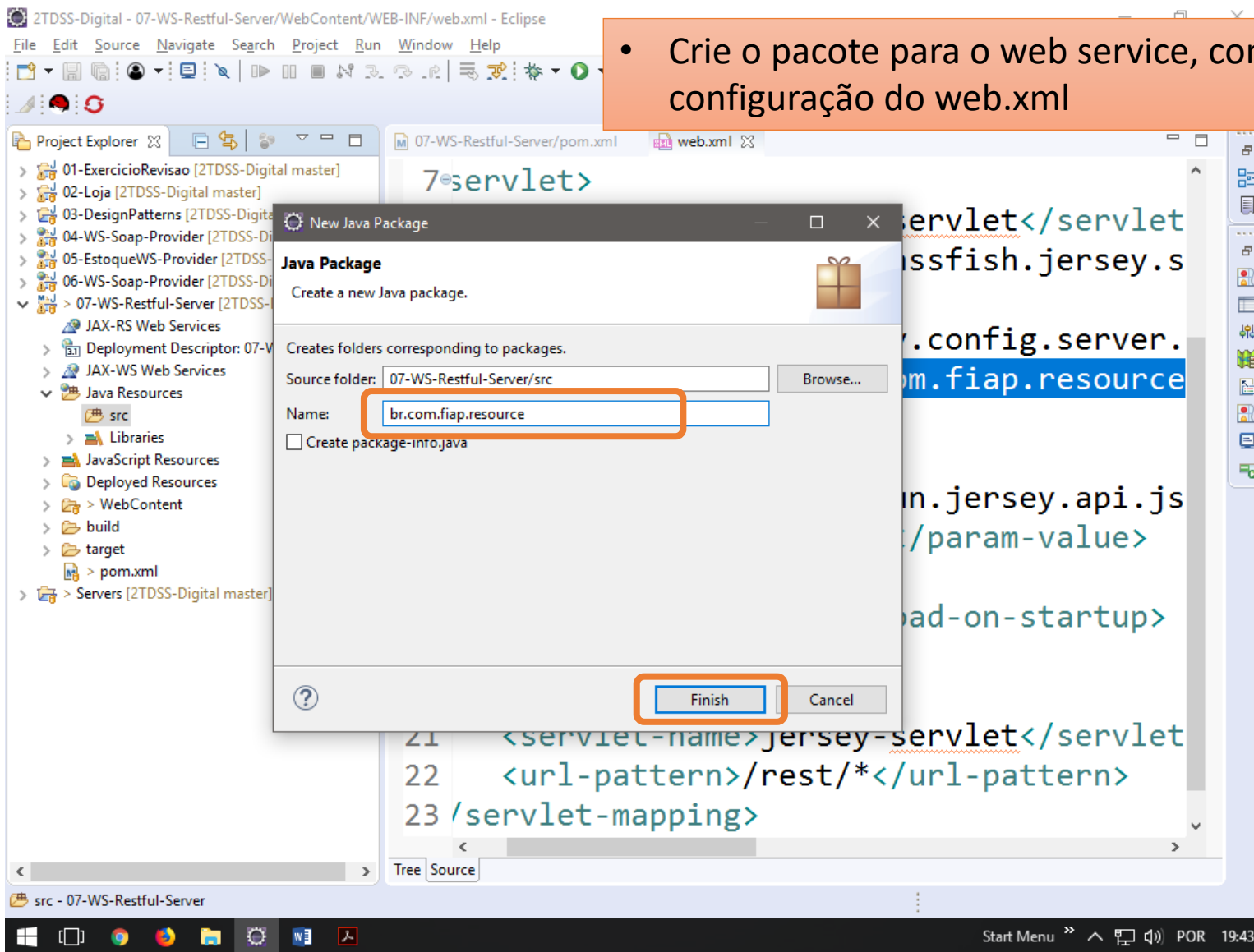
CONFIGURAÇÃO DO RESTFUL - WEB.XML

• Configure o web.xml

```
3  xmlns="http://xmlns.jcp.org/xml/ns/javaee"
4  xsi:schemaLocation="http://xmlns.jcp.org/x
5  id="WebApp_ID" version="3.1">
6  <display-name>07-WS-Restful-Server</display-
7  <servlet>
8      <servlet-name>jersey-servlet</servlet-
9      <servlet-class>org.glassfish.jersey.se
10     <init-param>
11         <param-name>jersey.config.server.p
12         <param-value>br.com.fiap.resource<
13     </init-param>
14     <init-param>
15         <param-name>com.sun.jersey.api.jso
16         <param-value>true</param-value>
17     </init-param>
18     <load-on-startup>1</load-on-startup>
19 </servlet>
```

PACOTE PARA AS CLASSES DO WEB SERVICE

- Crie o pacote para o web service, conforme a configuração do web.xml



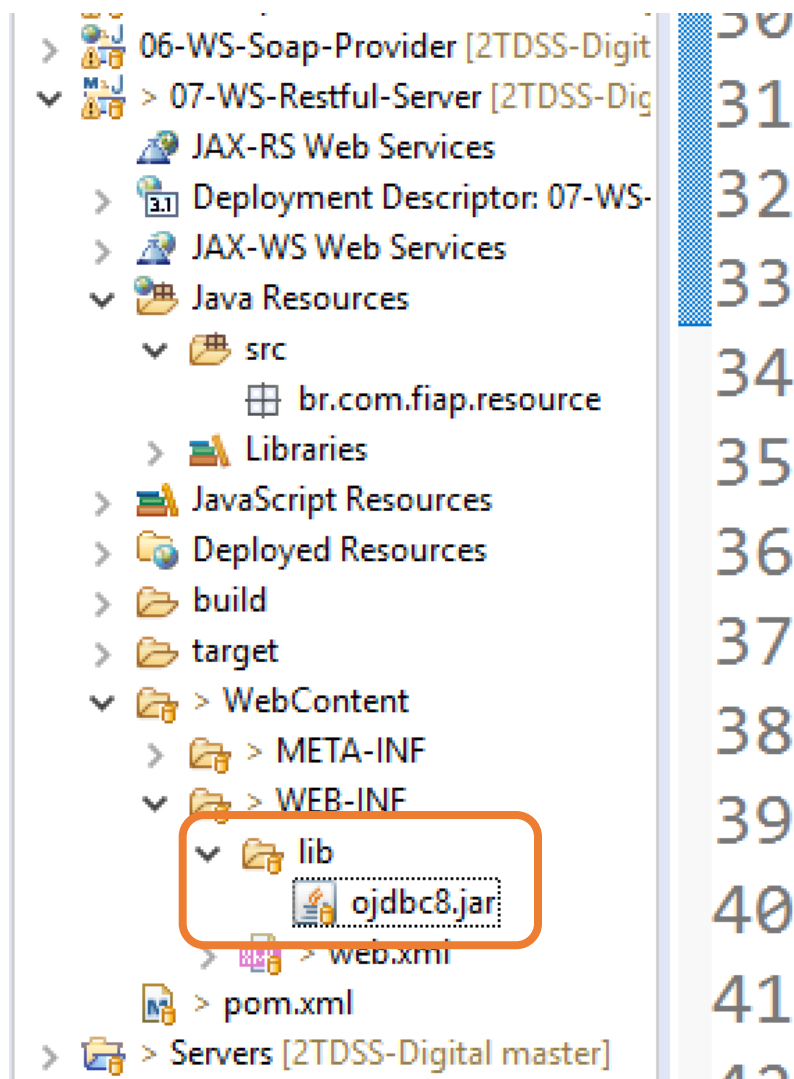
DEPENDÊNCIAS DO HIBERNATE – POM.XML

- Adicione a dependencia do hibernate no pom.xml

The screenshot shows the Eclipse IDE interface. The Project Explorer on the left displays a project structure with several sub-projects, including '07-WS-Restful-Server'. The main editor window shows the 'pom.xml' file for '07-WS-Restful-Server'. The XML content is as follows:

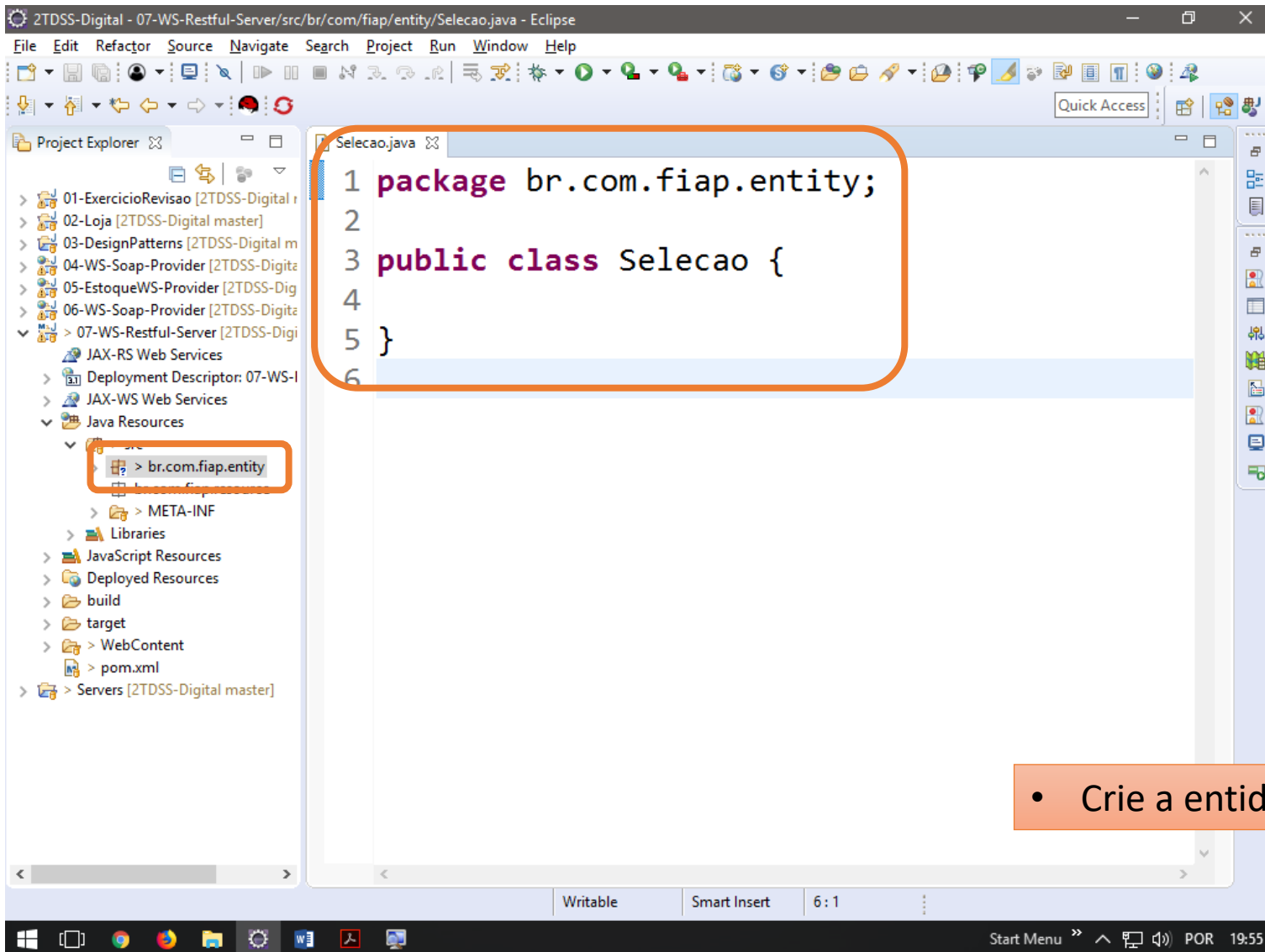
```
26     </plugins>
27 </build>
28 <dependencies>
29     <dependency>
30         <groupId>org.hibernate</groupId>
31         <artifactId>hibernate-core</artifactId>
32         <version>5.2.12.Final</version>
33     </dependency>
34     <dependency>
35         <groupId>org.glassfish.jersey.core<
36         <artifactId>jersey-server</artifact
37         <version>2.17</version>
38     </dependency>
39     <dependency>
40         <groupId>org.glassfish.jersey.conta
41         <artifactId>jersey-container-servle
42         <version>2.17</version>
```

An orange box highlights the newly added dependency block (lines 29-33). The bottom status bar shows 'project/dependencies/#text', 'Writable', 'Smart Insert', and the cursor position '33 : 22'.

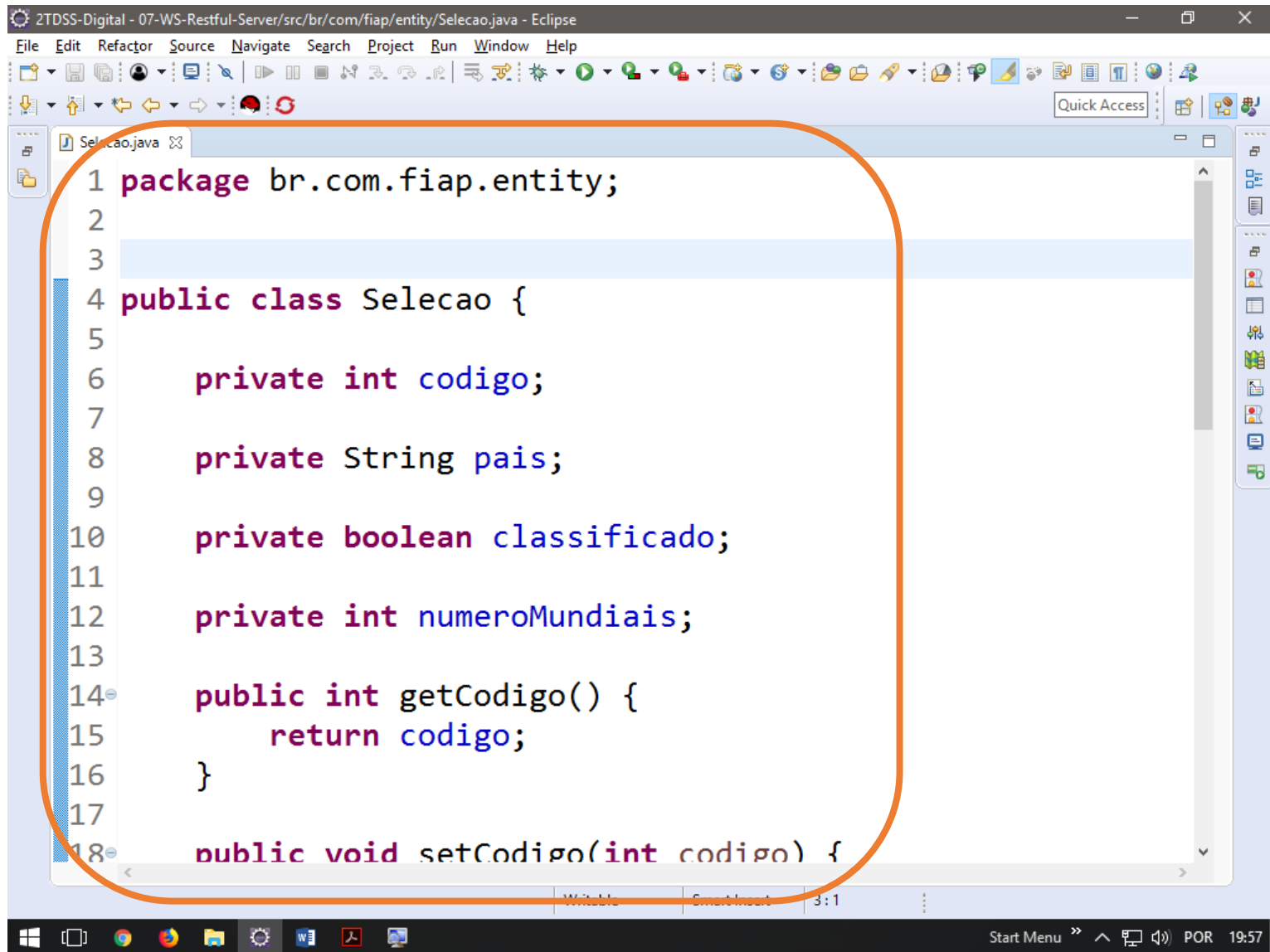


```
<group>  
<artifactId>  
<version>  
</dependency>  
<group>  
<artifactId>  
<version>  
</dependency>  
<group>  
<artifactId>  
<version>
```

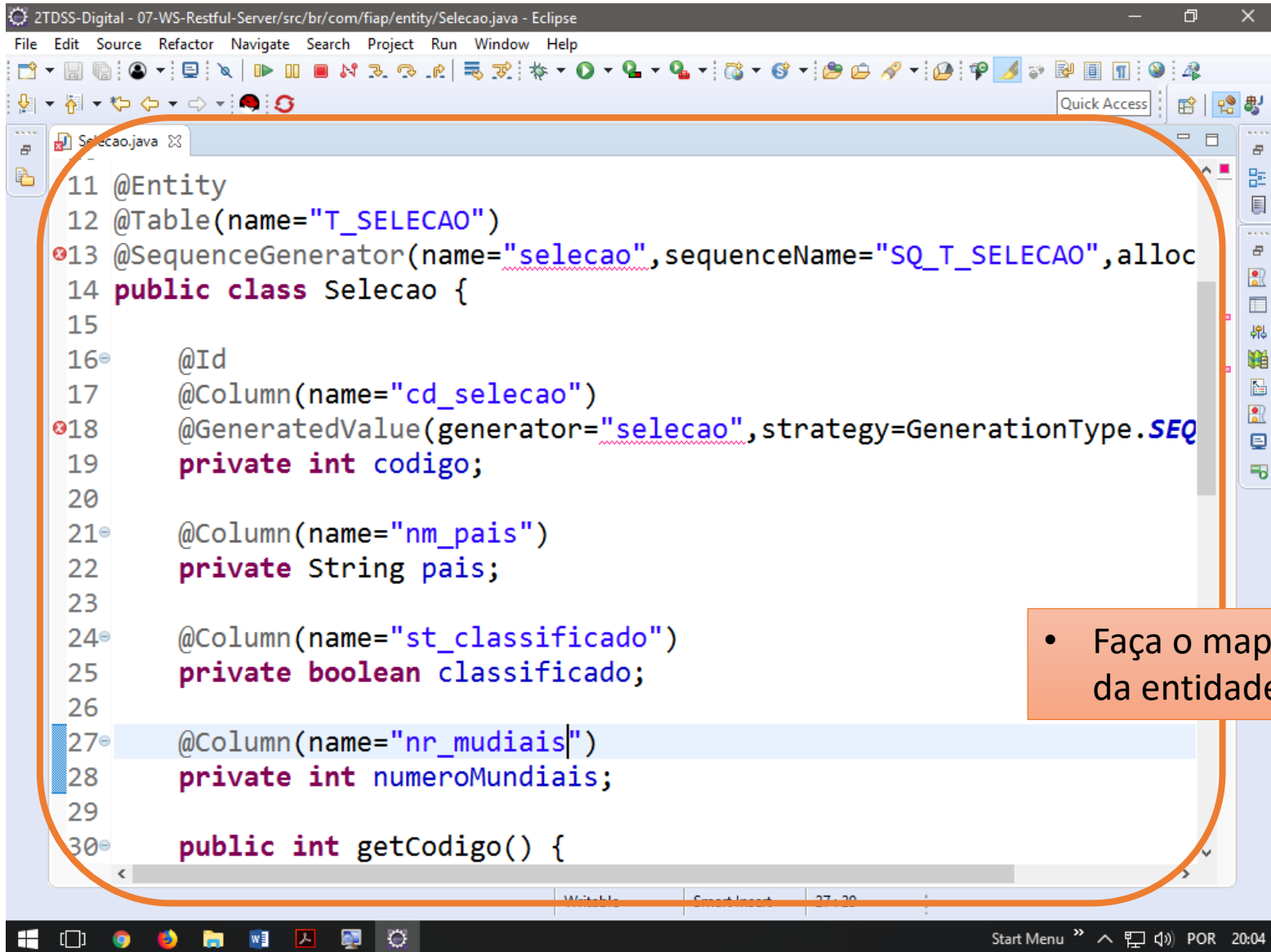
- Copie o driver do oracle no diretório **WebContext/WEB-INF/lib**



- Crie a entidade



```
1 package br.com.fiap.entity;
2
3
4 public class Selecao {
5
6     private int codigo;
7
8     private String pais;
9
10    private boolean classificado;
11
12    private int numeroMundiais;
13
14    public int getCodigo() {
15        return codigo;
16    }
17
18    public void setCodigo(int codigo) {
```



```
11 @Entity
12 @Table(name="T_SELECAO")
13 @SequenceGenerator(name="selecao", sequenceName="SQ_T_SELECAO", allocationSize=1)
14 public class Selecao {
15
16     @Id
17     @Column(name="cd_selecao")
18     @GeneratedValue(generator="selecao", strategy=GenerationType.SEQUENCE)
19     private int codigo;
20
21     @Column(name="nm_pais")
22     private String pais;
23
24     @Column(name="st_classificado")
25     private boolean classificado;
26
27     @Column(name="nr_mundiais")
28     private int numeroMundiais;
29
30     public int getCodigo() {
```

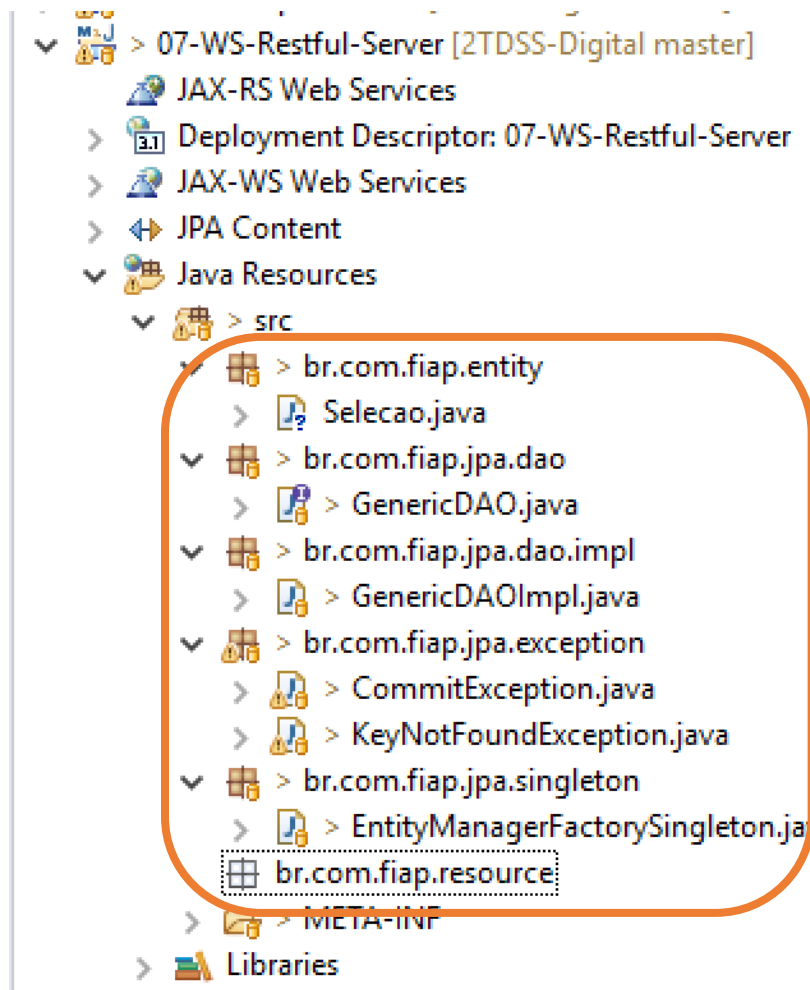
- Faça o mapeamento da entidade

The screenshot shows the Eclipse IDE interface. The 'Project' menu is open, and the 'Clean...' option is highlighted. The background code is a Java entity class named 'Selecao' with several annotations and fields. The status bar at the bottom indicates 'Writable', 'Smart Insert', and the cursor position '27 : 29'.

```

11 @Entity
12 @Table(name="T")
13 @SequenceGenerator(name="SQ_T_SELECAO", sequenceName="SQ_T_SELECAO", allocationSize=1)
14 public class Selecao {
15
16     @Id
17     @Column(name="cd_selecao")
18     @GeneratedValue(generator="selecao", strategy=GenerationType.SEQUENCE)
19     private int codigo;
20
21     @Column(name="nm_pais")
22     private String pais;
23
24     @Column(name="st_classificado")
25     private boolean classificado;
26
27     @Column(name="nr_mundiais")
28     private int numeroMundiais;
29
30     public int getCodigo() {
    
```

- Utilize o **Project > Clean** para remover os erros na sequence



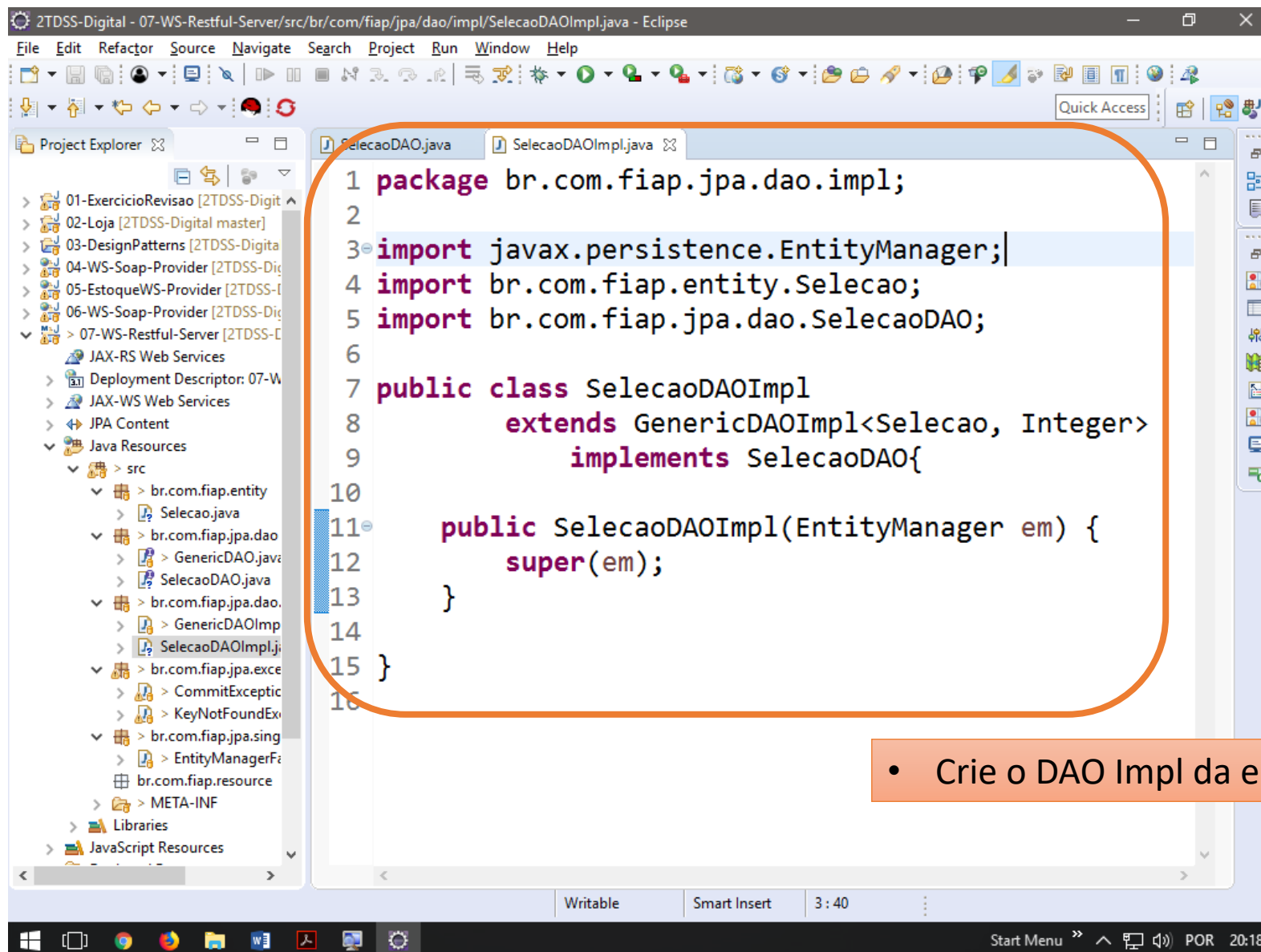
- Copie o DAO Genérico, Exceptions e Singleton

The screenshot shows the Eclipse IDE interface. The title bar indicates the file path: 2TDSS-Digital - 07-WS-Restful-Server/src/br/com/fiap/jpa/dao/SelecaoDAO.java - Eclipse. The menu bar includes File, Edit, Refactor, Source, Navigate, Search, Project, Run, Window, and Help. The toolbar contains various icons for file operations, editing, and running. The Project Explorer on the left shows a project structure with several packages and files. The main editor window displays the code for SelecaoDAO.java, which is highlighted with an orange border. The code defines a package, imports a class, and declares a public interface that extends a generic DAO interface. The status bar at the bottom shows 'Writable', 'Smart Insert', and the line number '9:1'.

```
1 package br.com.fiap.jpa.dao;
2
3 import br.com.fiap.entity.Selecao;
4
5 public interface SelecaoDAO
6         extends GenericDAO<Selecao, Integer>{
7
8 }
9
```

- Crie o DAO da entidade

DAO IMPL DA ENTIDADE



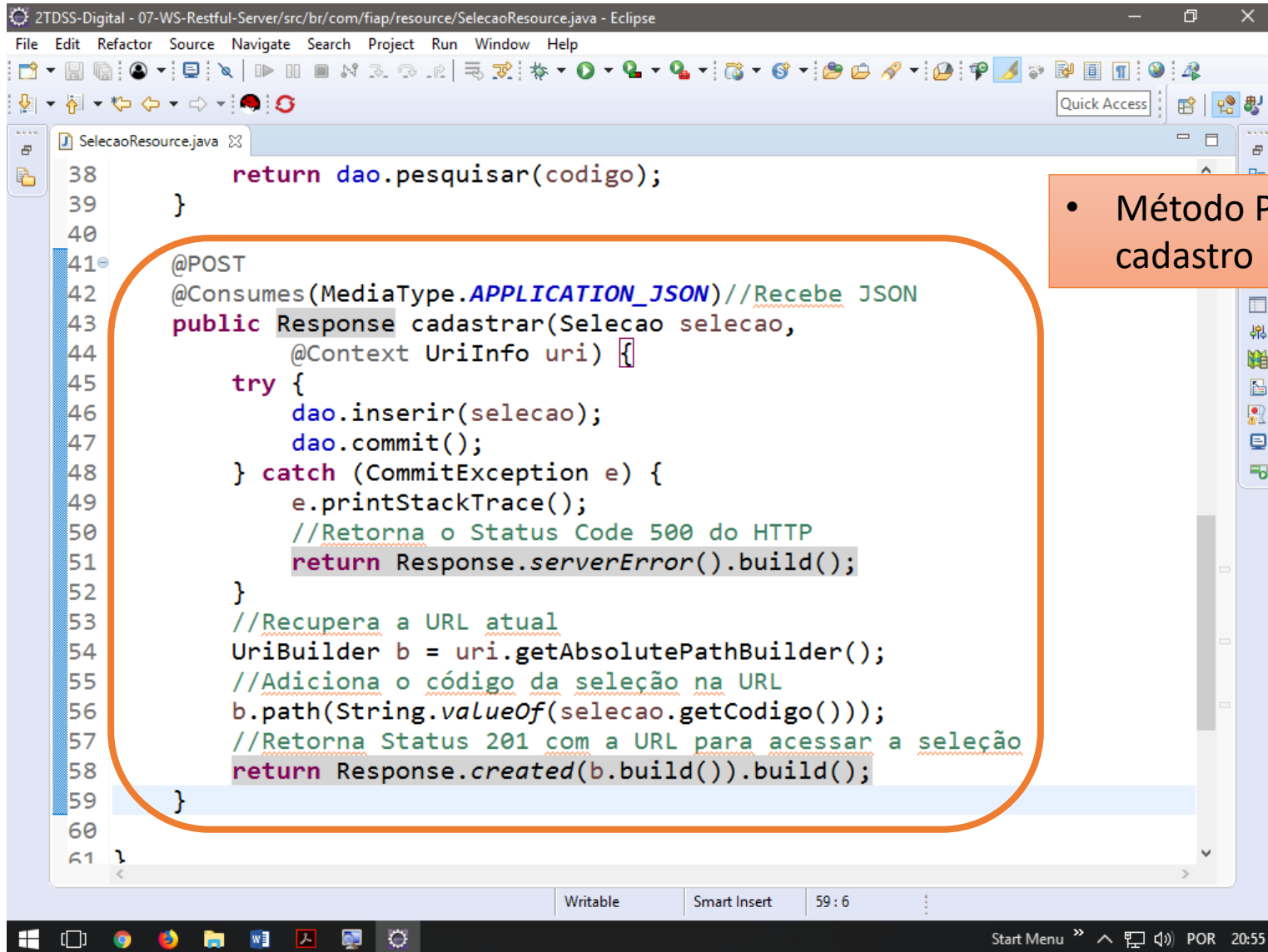
```
1 package br.com.fiap.jpa.dao.impl;
2
3 import javax.persistence.EntityManager;
4 import br.com.fiap.entity.Selecao;
5 import br.com.fiap.jpa.dao.SelecaoDAO;
6
7 public class SelecaoDAOImpl
8     extends GenericDAOImpl<Selecao, Integer>
9     implements SelecaoDAO{
10
11     public SelecaoDAOImpl(EntityManager em) {
12         super(em);
13     }
14
15 }
16
```

- Crie o DAO Impl da entidade

```
2TDSS-Digital - 07-WS-Restful-Server/src/br/com/fiap/resource/SelecaoResource.java - Eclipse
File Edit Refactor Source Navigate Search Project Run Window Help
SelecaoResource.java
14
15 @Path("/selecao")
16 public class SelecaoResource {
17
18     private SelecaoDAO dao;
19
20     //Construtor que inicializa o SelecaoDAO
21     public SelecaoResource() {
22         EntityManager em = EntityManagerFactorySingleton
23             .getInstance().createEntityManager();
24         dao = new SelecaoDAOImpl(em);
25     }
26
27     @GET
28     @Path("{id}")
29     @Produces(MediaType.APPLICATION_JSON)
30     public Selecao pesquisar(@PathParam("id") int codigo) {
31         return dao.pesquisar(codigo);
32     }
33 }
```

• Implemente o Resource para o web service, a classe deve estar dentro do pacote configurado no web.xml

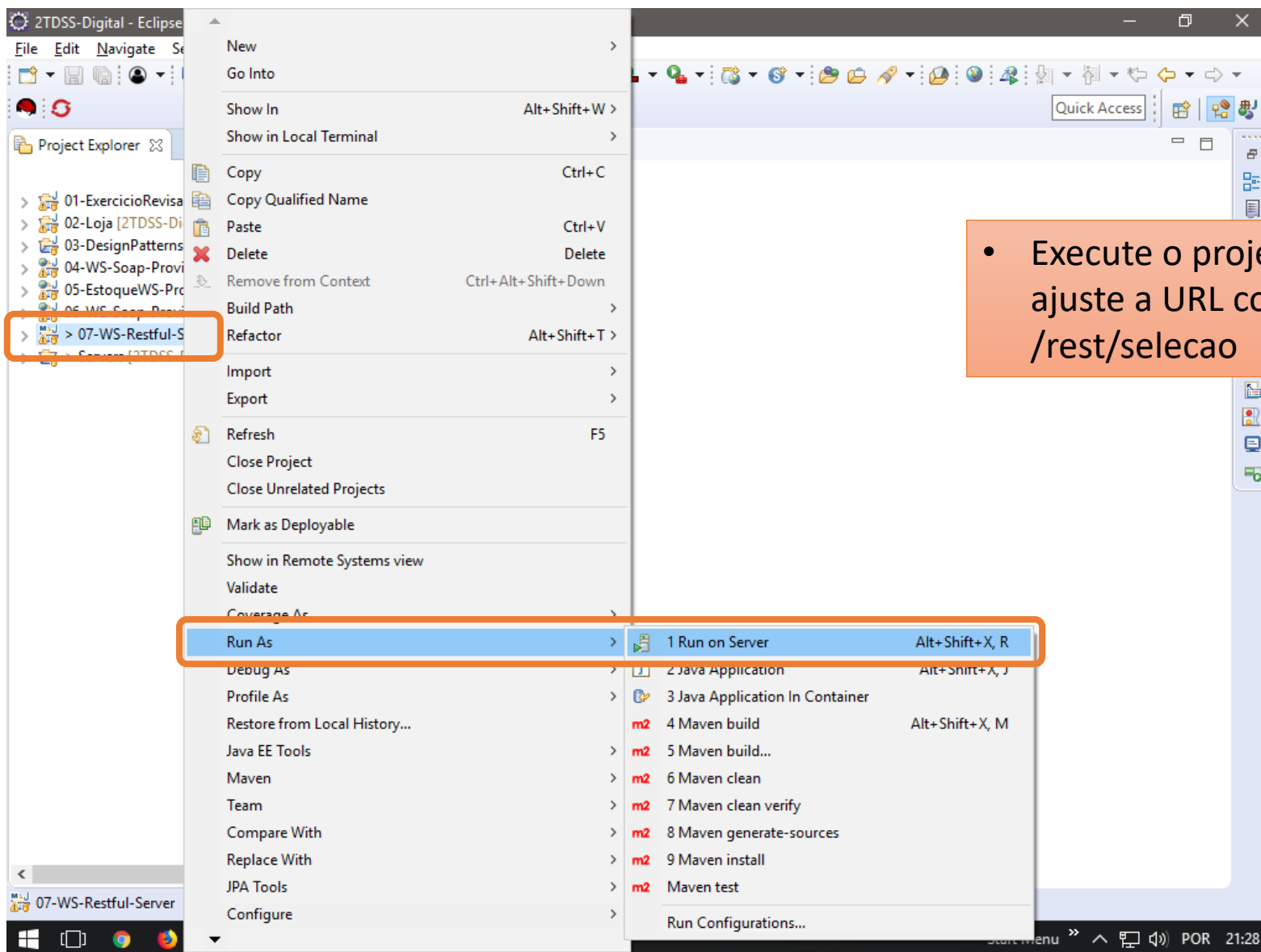
Writable Smart Insert 31 : 38 Start Menu ^ POR 20:42



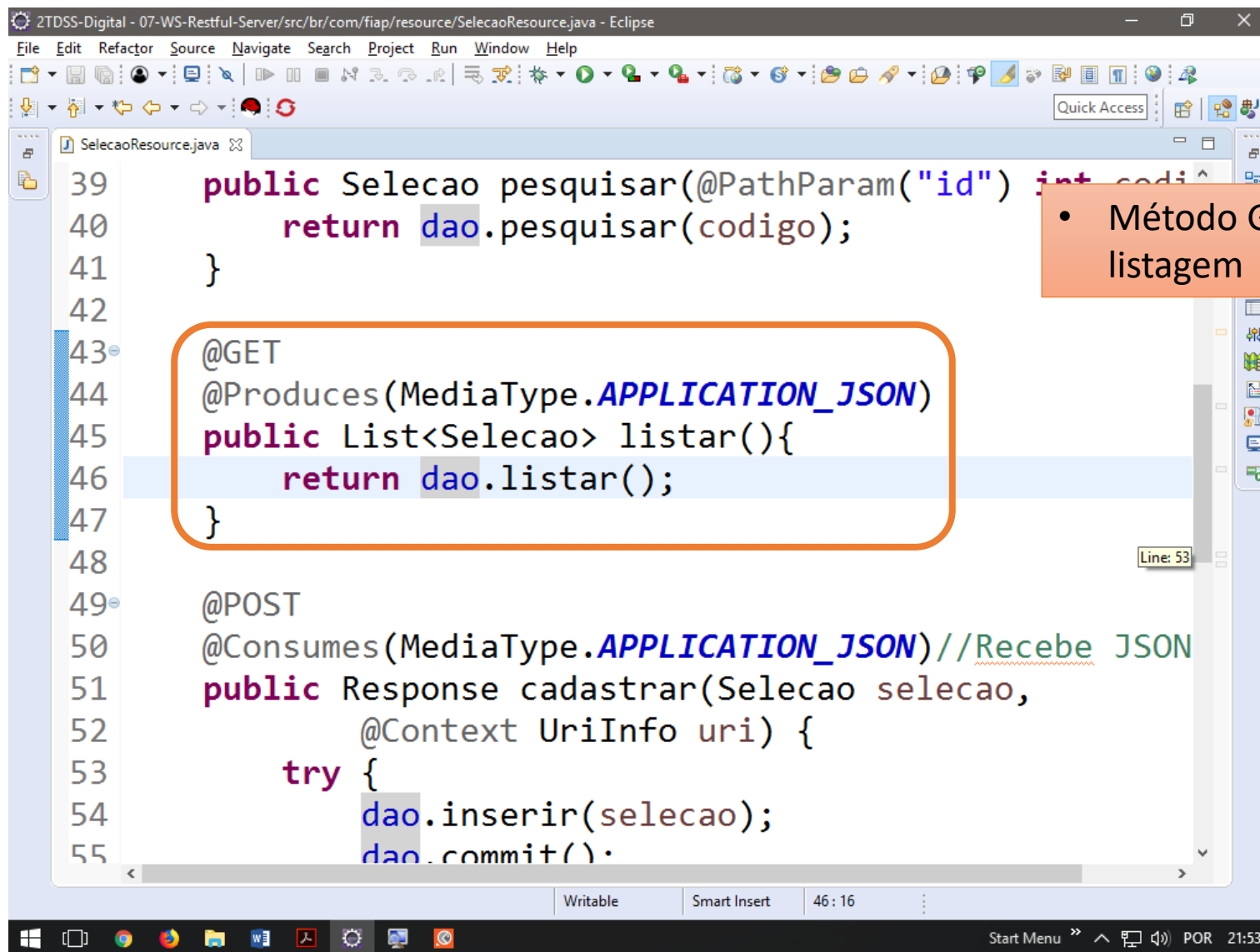
```
38     return dao.pesquisar(codigo);
39 }
40
41 @POST
42 @Consumes(MediaType.APPLICATION_JSON)//Recebe JSON
43 public Response cadastrar(Selecao selecao,
44     @Context UriInfo uri) {
45     try {
46         dao.inserir(selecao);
47         dao.commit();
48     } catch (CommitException e) {
49         e.printStackTrace();
50         //Retorna o Status Code 500 do HTTP
51         return Response.serverError().build();
52     }
53     //Recupera a URL atual
54     UriBuilder b = uri.getAbsolutePathBuilder();
55     //Adiciona o código da seleção na URL
56     b.path(String.valueOf(selecao.getCodigo()));
57     //Retorna Status 201 com a URL para acessar a seleção
58     return Response.created(b.build()).build();
59 }
60
61 }
```

- Método POST para cadastro

EXECUTANDO O PROJETO



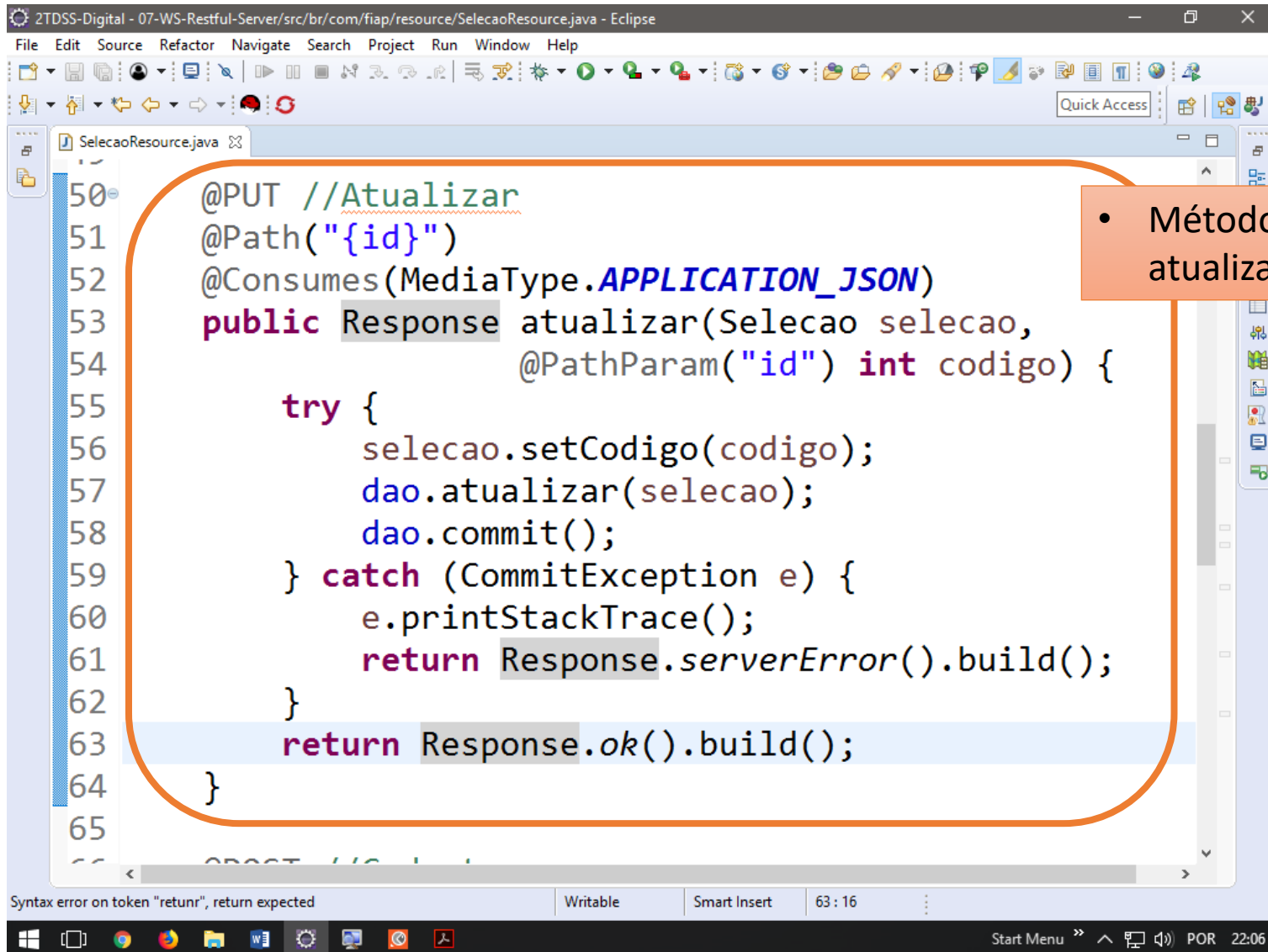
- Execute o projeto e ajuste a URL com /rest/selecao



```
39     public Selecao pesquisar(@PathParam("id") int codigo) {
40         return dao.pesquisar(codigo);
41     }
42
43     @GET
44     @Produces(MediaType.APPLICATION_JSON)
45     public List<Selecao> listar(){
46         return dao.listar();
47     }
48
49     @POST
50     @Consumes(MediaType.APPLICATION_JSON)//Recebe JSON
51     public Response cadastrar(Selecao selecao,
52         @Context UriInfo uri) {
53         try {
54             dao.inserir(selecao);
55             dao.commit();
56         } catch (Exception e) {
57             return Response.status(500).entity(e.getMessage()).build();
58         }
59         return Response.status(201).build();
60     }
61 }
```

- Método GET para listagem

PUT - ATUALIZAÇÃO



```
2TDSS-Digital - 07-WS-Restful-Server/src/br/com/fiap/resource/SelecaoResource.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
SelecaoResource.java
50 @PUT //Atualizar
51 @Path("{id}")
52 @Consumes(MediaType.APPLICATION_JSON)
53 public Response atualizar(Selecao selecao,
54                           @PathParam("id") int codigo) {
55     try {
56         selecao.setCodigo(codigo);
57         dao.atualizar(selecao);
58         dao.commit();
59     } catch (CommitException e) {
60         e.printStackTrace();
61         return Response.serverError().build();
62     }
63     return Response.ok().build();
64 }
65
Syntax error on token "return", return expected
Writable Smart Insert 63 : 16
Start Menu POR 22:06
```

- Método PUT para atualização

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*“Aquele que não luta pelo futuro que quer, deve
aceitar o futuro que vier”*