# Engenharia de Softwares Escaláveis

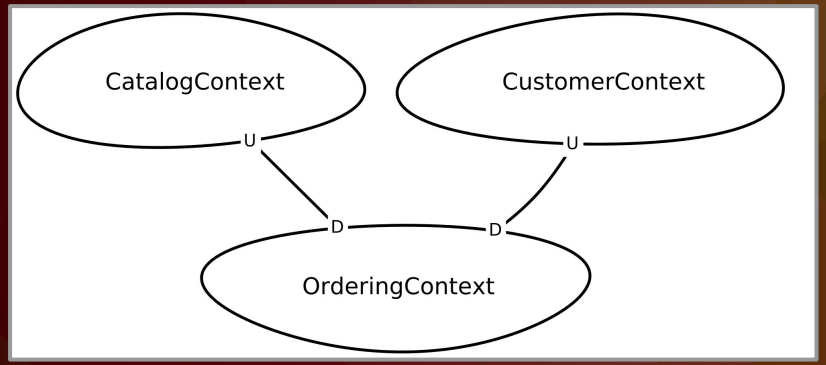
## Domain-Driven Design (DDD) e Arquitetura de Softwares Escaláveis com Java

# Agenda

**Etapa 2**: Aplicando Aggregates e Bounded Contexts - Parte 2.

- Criando um Projeto Spring Boot.
- Aplicação de Value Object em Entities.
- Construção de Aggregates.

# Pet Friends




**Camada Web**
**(Web Tier)**

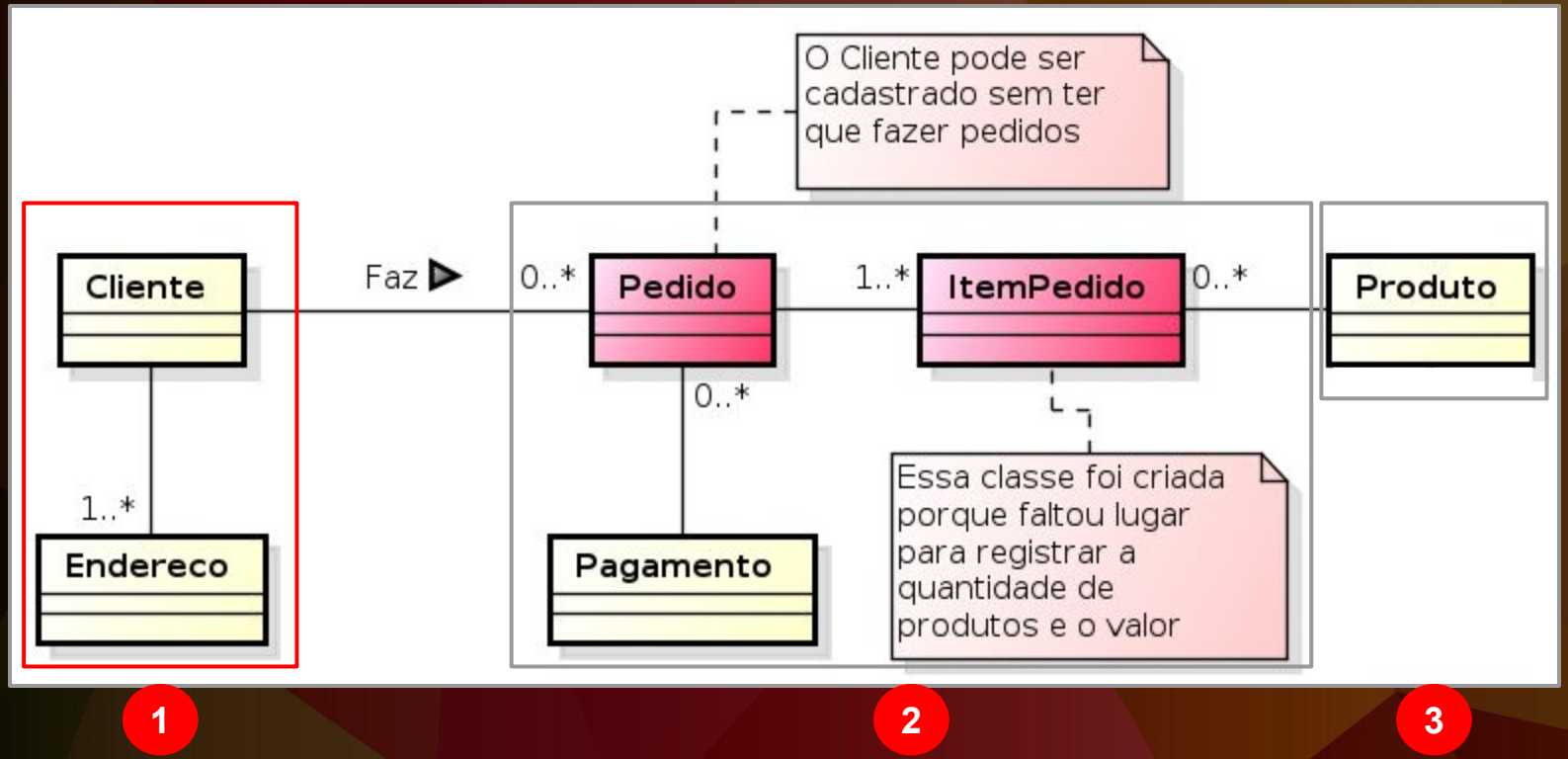
PetFriends_**Web**

**Camada Microsserviços**
**(Business Tier)**

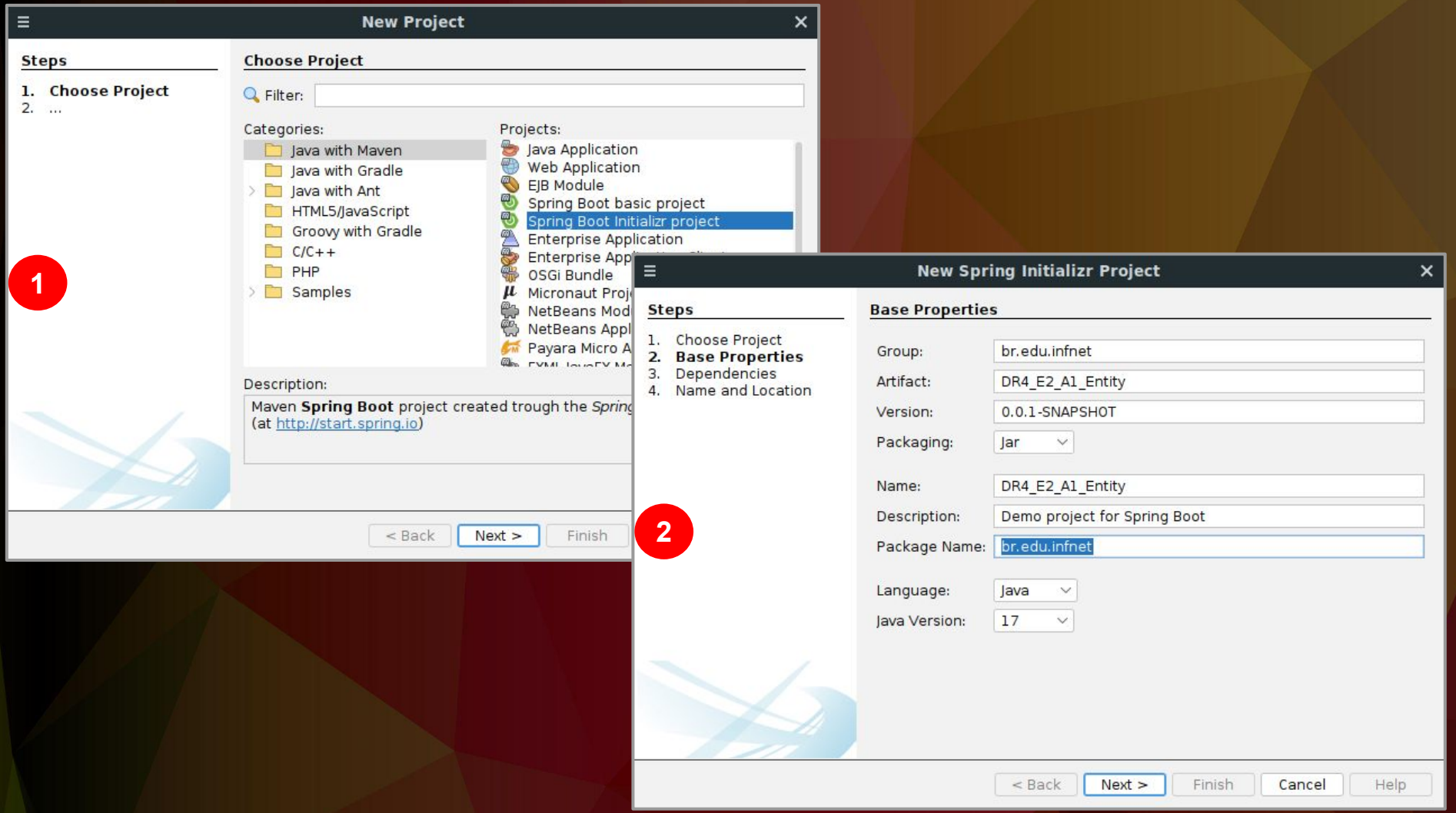
PetFriends_**Clientes**

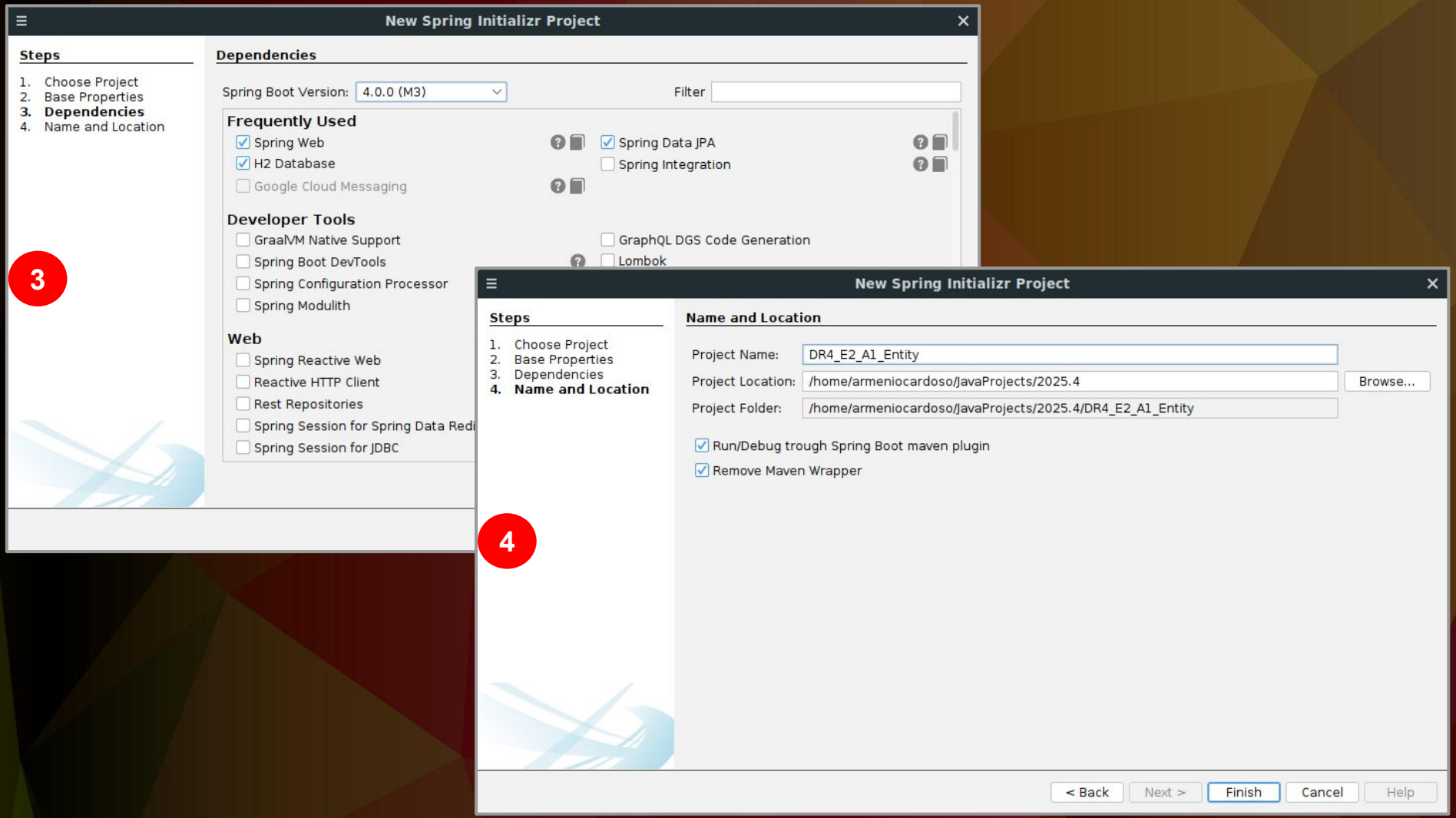
PetFriends_**Produtos**

PetFriends_**Pedidos**


O Cliente pode ser cadastrado sem ter que fazer pedidos
Cliente
Faz
0..*
Pedido
1..*
ItemPedido
0..*
Produto
0..*
1..*
Endereco
Pagamento
Essa classe foi criada porque faltou lugar para registrar a quantidade de produtos e o valor
1
2
3

# Criando um Projeto Spring Boot


New Project
Steps
1. Choose Project
2. ...
Choose Project
Filter:
Categories:
Java with Maven
Java with Gradle
Java with Ant
HTML5/JavaScript
Groovy with Gradle
C/C++
PHP
Samples
Projects:
Java Application
Web Application
EJB Module
Spring Boot basic project
Spring Boot Initializr project
Enterprise Application
OSGi Bundle
Description:
Maven Spring Boot project created trough the Spring
(at http://start.spring.io)
< Back
Next >
Finish
1
New Spring Initializr Project
Steps
1. Choose Project
2. Base Properties
3. Dependencies
4. Name and Location
Base Properties
Group: br.edu.infnet
Artifact: DR4_E2_A1_Entity
Version: 0.0.1-SNAPSHOT
Packaging: Jar
Name: DR4_E2_A1_Entity
Description: Demo project for Spring Boot
Package Name: br.edu.infnet
Language: Java
Java Version: 17
2
< Back
Next >
Finish
Cancel
Help


New Spring Initializr Project
Steps
1. Choose Project
2. Base Properties
3. Dependencies
4. Name and Location
Dependencies
Spring Boot Version: 4.0.0 (M3)
Filter
Frequently Used
Spring Web
Spring Data JPA
H2 Database
Spring Integration
Google Cloud Messaging
Developer Tools
GraalVM Native Support
GraphQL DGS Code Generation
Spring Boot DevTools
Lombok
Spring Configuration Processor
Spring Modulith
Web
Spring Reactive Web
Reactive HTTP Client
Rest Repositories
Spring Session for Spring Data Redi
Spring Session for JDBC
3
New Spring Initializr Project
Steps
1. Choose Project
2. Base Properties
3. Dependencies
4. Name and Location
Name and Location
Project Name: DR4_E2_A1_Entity
Project Location: /home/armeniocardoso/JavaProjects/2025.4
Browse...
Project Folder: /home/armeniocardoso/JavaProjects/2025.4/DR4_E2_A1_Entity
Run/Debug trough Spring Boot maven plugin
Remove Maven Wrapper
4
< Back
Next >
Finish
Cancel
Help

5

pom.xml [DR4_E2_A1_Entity]

Source | Graph | Effective | History

```
1  <?xml version="1.0" encoding="UTF-8"?>
2  <project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3           xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">
4           <modelVersion>4.0.0</modelVersion>
5           <parent>
6                   <groupId>org.springframework.boot</groupId>
7                   <artifactId>spring-boot-starter-parent</artifactId>
8                   <version>4.0.0-M2</version>
9                   <relativePath/> <!-- lookup parent from repository -->
10          </parent>
11          <groupId>br.edu.infnet</groupId>
12          <artifactId>DR4_E2_A1_Entity</artifactId>
13          <version>0.0.1-SNAPSHOT</version>
14          <name>DR4_E2_A1_Entity</name>
15          <description>Demo project for Spring Boot</description>
16          <url/>
```

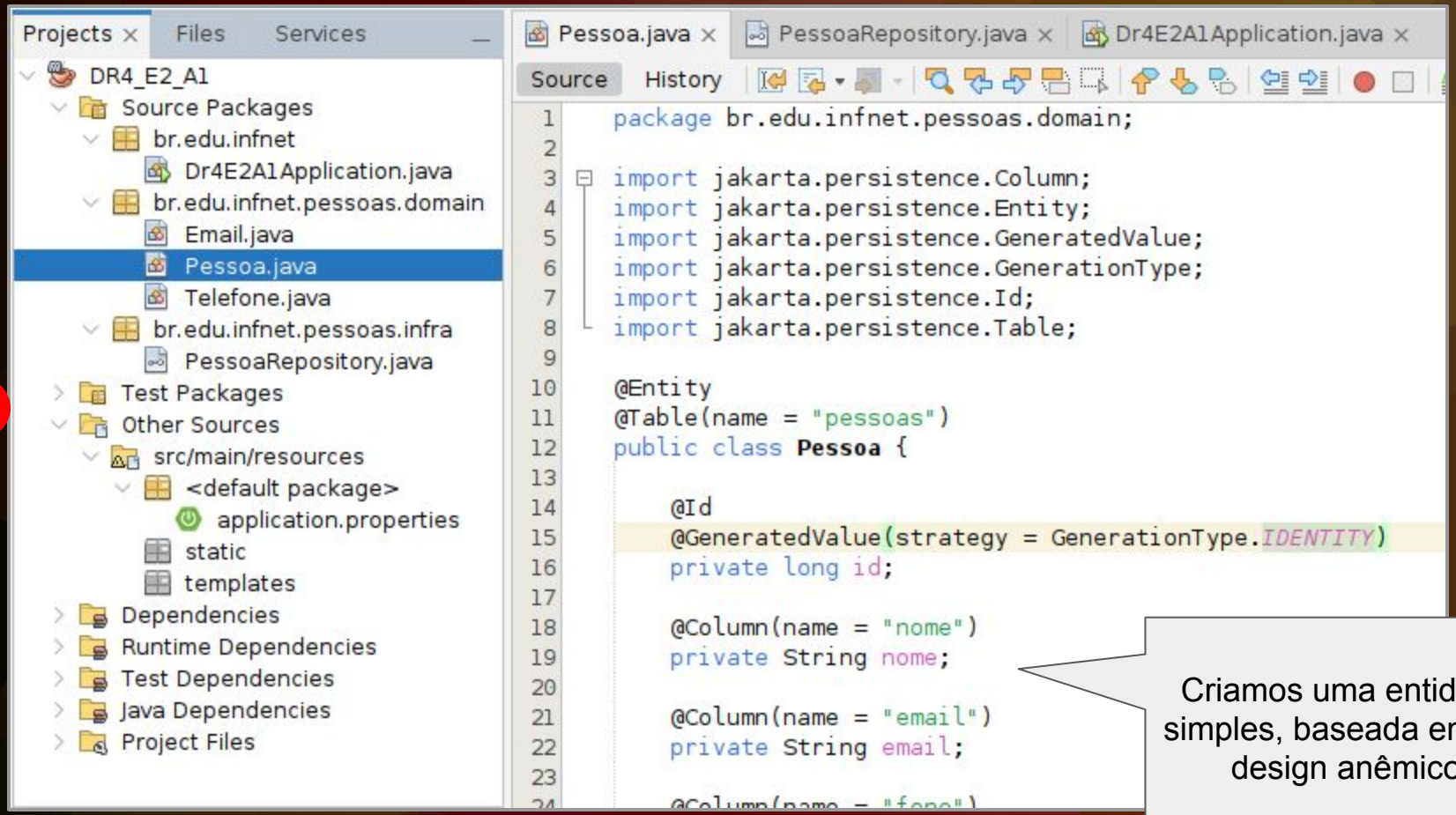
6

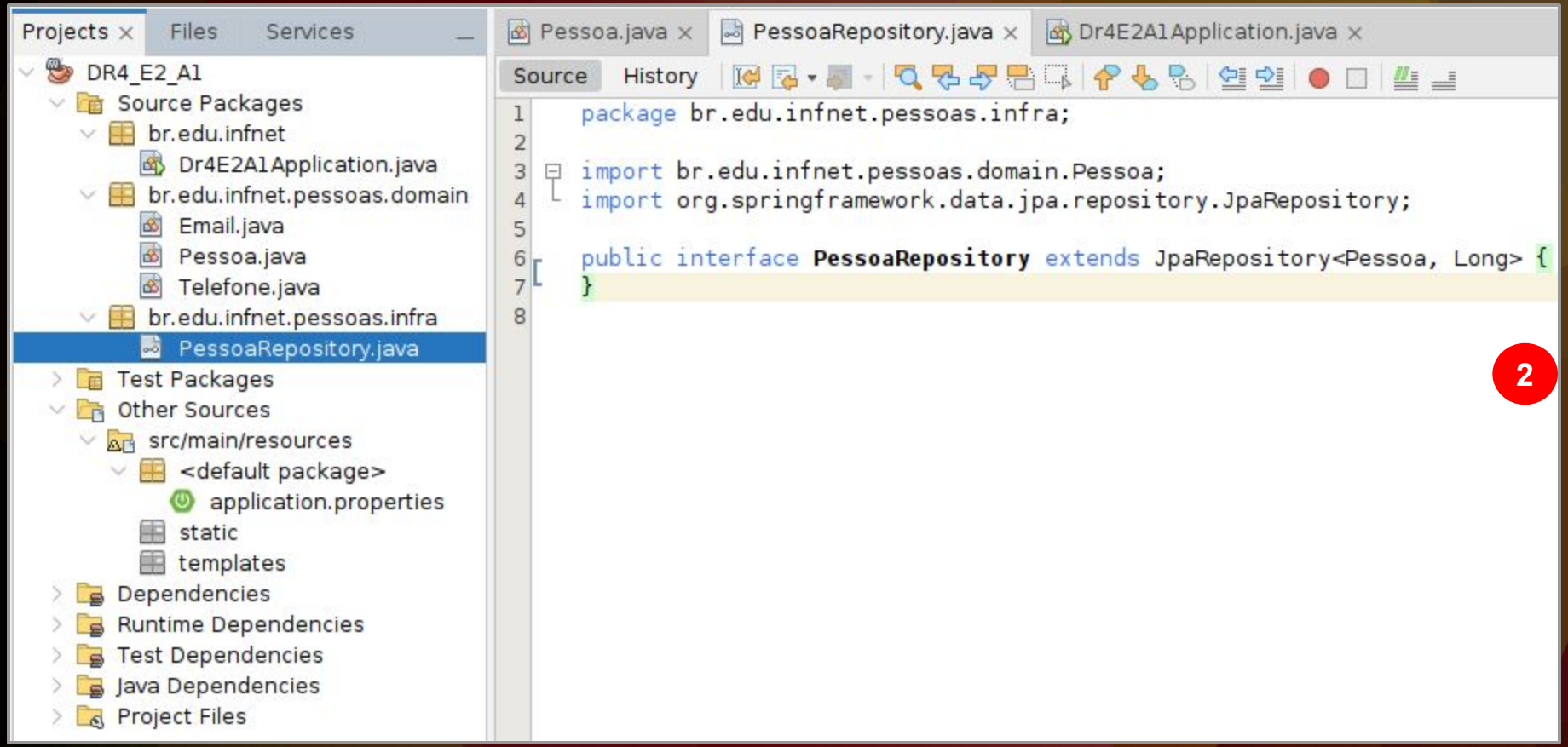
application.properties

Source | History

```
1  spring.application.name=DR4_E2_A1_Entity
2  spring.datasource.url=jdbc:h2:file:./h2_databases/DR4_1
3  spring.datasource.driverClassName=org.h2.Driver
4  spring.datasource.username=sa
5  spring.datasource.password=password
6  spring.jpa.database-platform=org.hibernate.dialect.H2Dialect
7  spring.h2.console.enabled=true
8  spring.jpa.hibernate.ddl-auto=update
```

# Aplicação de Value Object em Entities


Projects
Files
Services
DR4_E2_A1
Source Packages
br.edu.infnet
Dr4E2A1Application.java
br.edu.infnet.pessoas.domain
Email.java
Pessoa.java
Telefone.java
br.edu.infnet.pessoas.infra
PessoaRepository.java
Test Packages
Other Sources
src/main/resources
<default package>
application.properties
static
templates
Dependencies
Runtime Dependencies
Test Dependencies
Java Dependencies
Project Files
Pessoa.java
PessoaRepository.java
Dr4E2A1Application.java
Source
History
1 package br.edu.infnet.pessoas.domain;
2
3 import jakarta.persistence.Column;
4 import jakarta.persistence.Entity;
5 import jakarta.persistence.GeneratedValue;
6 import jakarta.persistence.GenerationType;
7 import jakarta.persistence.Id;
8 import jakarta.persistence.Table;
9
10 @Entity
11 @Table(name = "pessoas")
12 public class Pessoa {
13
14 @Id
15 @GeneratedValue(strategy = GenerationType.IDENTITY)
16 private long id;
17
18 @Column(name = "nome")
19 private String nome;
20
21 @Column(name = "email")
22 private String email;
23
1
Criamos uma entidade simples, baseada em um design anêmico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DR4_E2_A1
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Dr4E2A1Application.java
br.edu.infnet.pessoas.domain
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br.edu.infnet.pessoas.infra
PessoaRepository.java
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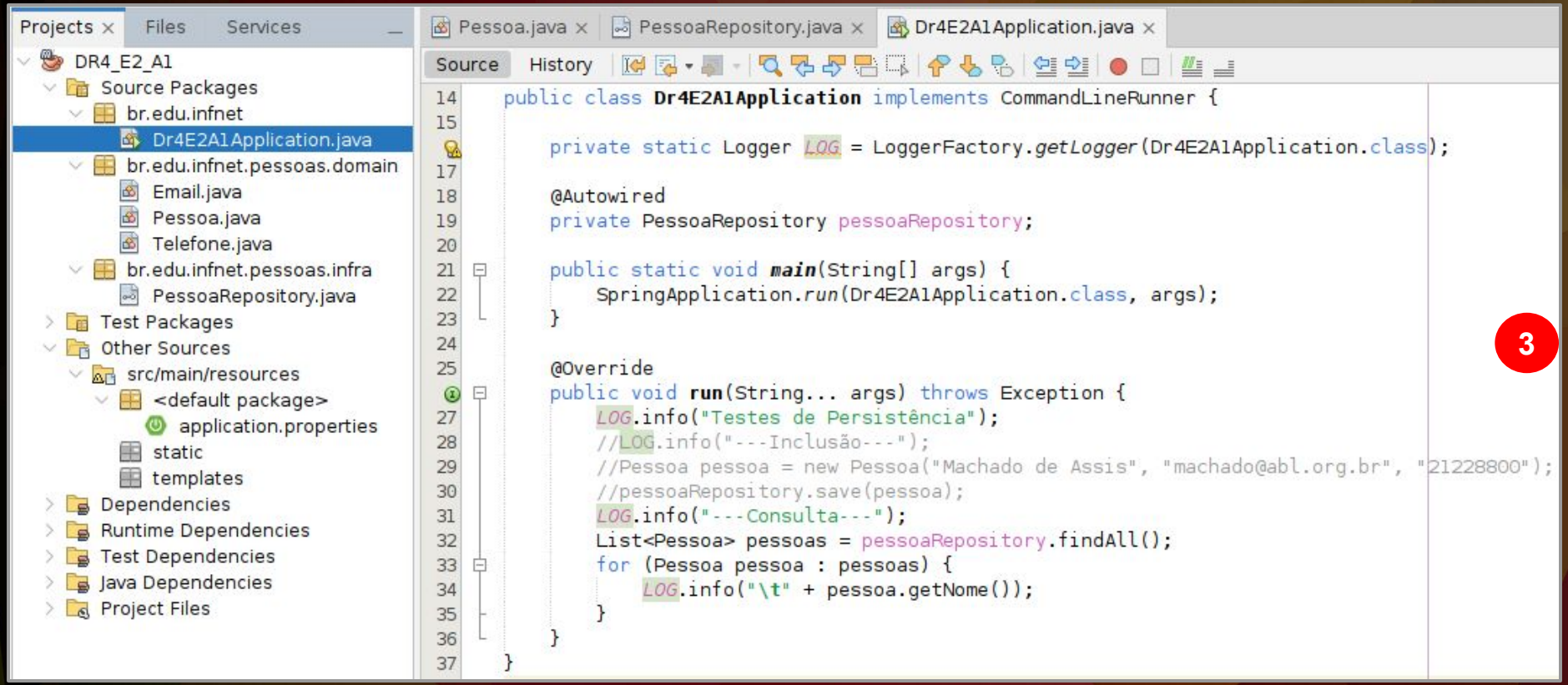
src/main/resources
<default package>
application.properties
static
templates
Dependencies
Runtime Dependencies
Test Dependencies
Java Dependencies
Project Files
Pessoa.java
PessoaRepository.java
Dr4E2A1Application.java
Source
History
1 package br.edu.infnet.pessoas.infra;
2
3 import br.edu.infnet.pessoas.domain.Pessoa;
4 import org.springframework.data.jpa.repository.JpaRepository;
5
6 public interface PessoaRepository extends JpaRepository<Pessoa, Long> {
7 }
8
2


Projects
Files
Services
DR4_E2_A1
Source Packages
br.edu.infnet
Dr4E2A1Application.java
br.edu.infnet.pessoas.domain
Email.java
Pessoa.java
Telefone.java
br.edu.infnet.pessoas.infra
PessoaRepository.java
Test Packages
Other Sources
src/main/resources
<default package>
application.properties
static
templates
Dependencies
Runtime Dependencies
Test Dependencies
Java Dependencies
Project Files
Pessoa.java
PessoaRepository.java
Dr4E2A1Application.java
Source
History
14 public class Dr4E2A1Application implements CommandLineRunner {
15
16 private static Logger LOG = LoggerFactory.getLogger(Dr4E2A1Application.class);
17
18 @Autowired
19 private PessoaRepository pessoaRepository;
20
21 public static void main(String[] args) {
22 SpringApplication.run(Dr4E2A1Application.class, args);
23 }
24
25 @Override
26 public void run(String... args) throws Exception {
27 LOG.info("Testes de Persistência");
28 //LOG.info("---Inclusão---");
29 //Pessoa pessoa = new Pessoa("Machado de Assis", "machado@abl.org.br", "21228800");
30 //pessoaRepository.save(pessoa);
31 LOG.info("---Consulta---");
32 List<Pessoa> pessoas = pessoaRepository.findAll();
33 for (Pessoa pessoa : pessoas) {
34 LOG.info("\t" + pessoa.getNome());
35 }
36 }
37 }
3

Output

Retriever Output × | Run (DR4_E2_A1) ×

```
2024-07-31T14:28:03.621-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with po
2024-07-31T14:28:03.637-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2024-07-31T14:28:03.637-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.apache.catalina.core.StandardEngine    : Starting Servlet engine: [
2024-07-31T14:28:03.694-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedd
t
2024-07-31T14:28:03.695-03:00  INFO 348052 --- [DR4_E2_A1] [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplicationContext
ted in 1299 ms
2024-07-31T14:28:03.731-03:00  INFO 348052 --- [DR4_E2_A1] [           main] com.zaxxer.hikari.HikariDataSource       : HikariPool-1 - Starting...
2024-07-31T14:28:03.977-03:00  INFO 348052 --- [DR4_E2_A1] [           main] com.zaxxer.hikari.pool.HikariPool        : HikariPool-1 - Added connection conn0: url=jdbc:h
2:file:/home/armeniocardoso/JavaProjects/h2_databases/DR4_1 user=SA
2024-07-31T14:28:03.978-03:00  INFO 348052 --- [DR4_E2_A1] [           main] com.zaxxer.hikari.HikariDataSource       : HikariPool-1 - Start completed.
2024-07-31T14:28:03.992-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.s.b.a.h2.H2ConsoleAutoConfiguration    : H2 console available at '/h2-console'. Database a
vailable at 'jdbc:h2:file:/home/armeniocardoso/JavaProjects/h2_databases/DR4_1'
2024-07-31T14:28:04.141-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.hibernate.jpa.internal.util.LogHelper  : HHH000204: Processing PersistenceUnitInfo [name:
default]
2024-07-31T14:28:04.209-03:00  INFO 348052 --- [DR4_E2_A1] [           main] org.hibernate.Version                    : HHH000412: Hibernate ORM core version 6.5.2.Final
2024-07-31T14:28:04.255-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.h.c.internal.RegionFactoryInitiator    : HHH000026: Second-level cache disabled
2024-07-31T14:28:04.653-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.s.o.j.p.SpringPersistenceUnitInfo      : No LoadTimeWeaver setup: ignoring JPA class trans
former
2024-07-31T14:28:04.711-03:00  WARN 348052 --- [DR4_E2_A1] [           main] org.hibernate.orm.deprecation            : HHH90000025: H2Dialect does not need to be specif
ied explicitly using 'hibernate.dialect' (remove the property setting and it will be selected by default)
2024-07-31T14:28:05.526-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.h.e.t.j.p.i.JtaPlatformInitiator       : HHH000489: No JTA platform available (set 'hibern
ate.transaction.jta.platform' to enable JTA platform integration)
2024-07-31T14:28:05.578-03:00  INFO 348052 --- [DR4_E2_A1] [           main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persiste
nce unit 'default'
2024-07-31T14:28:05.854-03:00  WARN 348052 --- [DR4_E2_A1] [           main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by default. Th
erefore, database queries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2024-07-31T14:28:06.219-03:00  INFO 348052 --- [DR4_E2_A1] [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port 8080 (http) with context p
ath '/'
2024-07-31T14:28:06.230-03:00  INFO 348052 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : Started Dr4E2A1Application in 4.291 seconds (proc
ess running for 4.667)
2024-07-31T14:28:06.233-03:00  INFO 348052 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : Testes de Persistência
2024-07-31T14:28:06.233-03:00  INFO 348052 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : ---Inclusão---
2024-07-31T14:28:06.233-03:00  INFO 348052 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : ---Consulta---
2024-07-31T14:28:06.356-03:00  INFO 348052 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         :         Machado de Assis
```

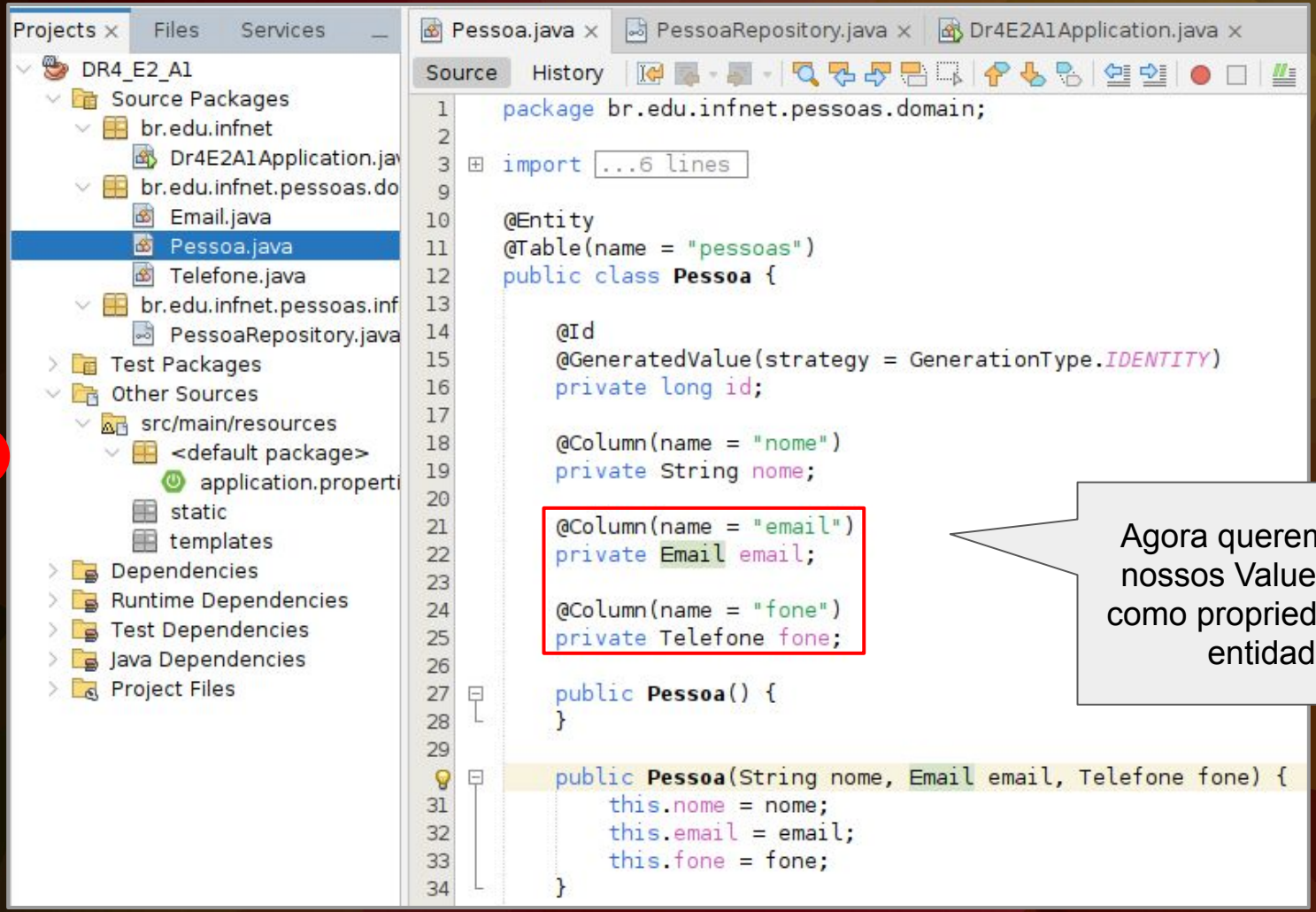
Email.java

Source | History

```java
package br.edu.infnet.valueObject;

import java.util.Objects;
import org.apache.commons.validator.routines.EmailValidator;

public class Email {

    private static final EmailValidator validador = EmailValidator.getInstance();
    private final String email;

    public Email(String email) {
        if (!validador.isValid(email)) {
            throw new IllegalArgumentException("Endereço de email inválido");
        }
        this.email = email;
    }

    public Email alterar(String value) {
        return new Email(value);
    }

    @Override
    public boolean equals(Object o) {
        Email that = (Email) o;
        return Objects.equals(email, that.email);
    }
}
```

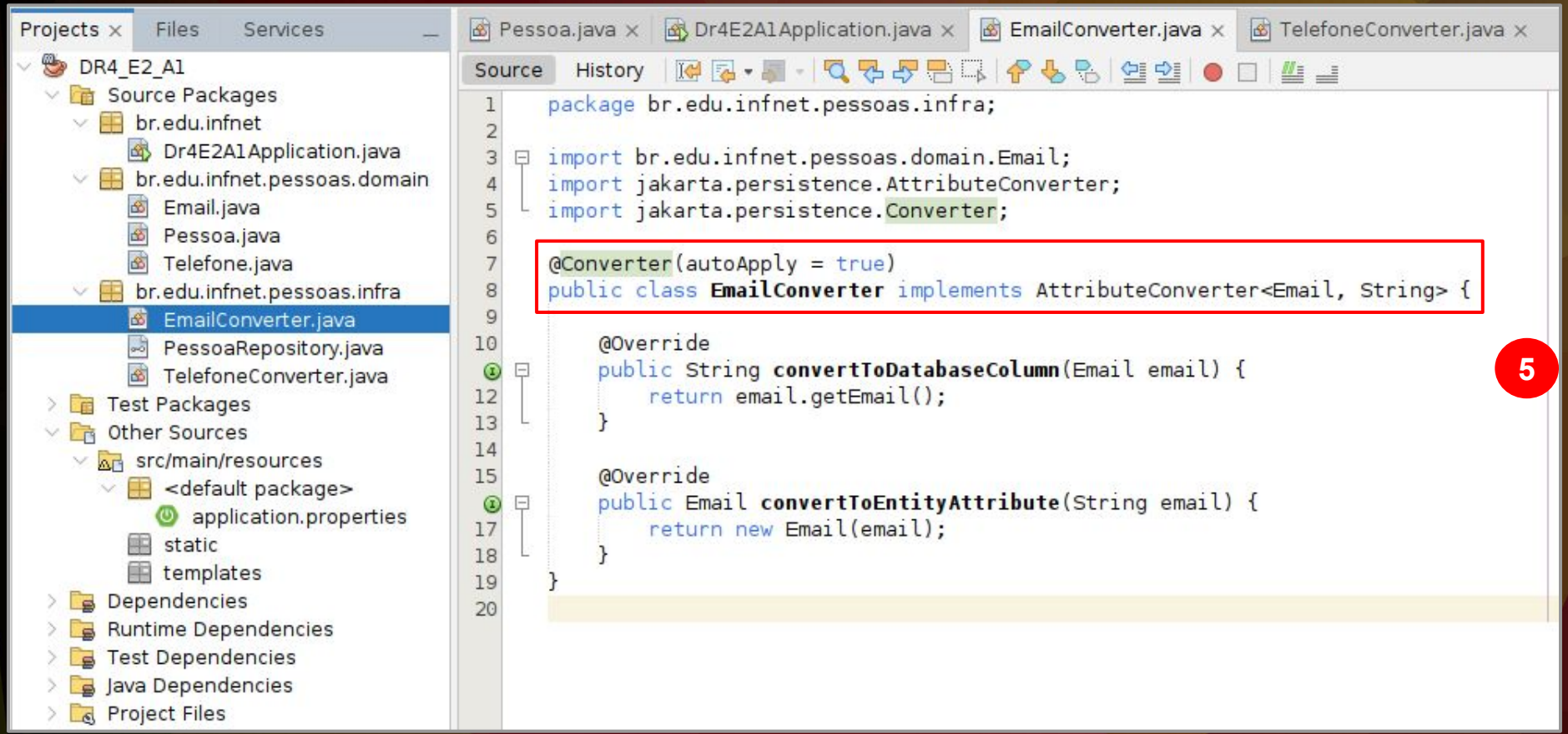
Na aula passada, vimos como é interessante a criação de Value Objects

Telefone.java
Source
History
1 package br.edu.infnet.valueObject;
2
3 public class Telefone {
4
5 private int ddd;
6 private int numero;
7 private TipoFone tipo;
8
9 private Telefone() {
10 }
11
12 public int getDdd() {
13 return ddd;
14 }
15
16 public int getNumero() {
17 return numero;
18 }
19
20 public TipoFone getTipo() {
21 return tipo;
22 }
23
24 public enum TipoFone {
25 RESIDENCIAL, CELULAR, COMERCIAL
26 }


Projects
Files
Services
DR4_E2_A1
Source Packages
br.edu.infnet
Dr4E2A1Application.jav
br.edu.infnet.pessoas.do
Email.java
Pessoa.java
Telefone.java
br.edu.infnet.pessoas.inf
PessoaRepository.java
Test Packages
Other Sources
src/main/resources
<default package>
application.properti
static
templates
Dependencies
Runtime Dependencies
Test Dependencies
Java Dependencies
Project Files
Pessoa.java
PessoaRepository.java
Dr4E2A1Application.java
Source
History
1 package br.edu.infnet.pessoas.domain;
2
3 import ...6 lines
9
10 @Entity
11 @Table(name = "pessoas")
12 public class Pessoa {
13
14 @Id
15 @GeneratedValue(strategy = GenerationType.IDENTITY)
16 private long id;
17
18 @Column(name = "nome")
19 private String nome;
20
21 @Column(name = "email")
22 private Email email;
23
24 @Column(name = "fone")
25 private Telefone fone;
26
27 public Pessoa() {
28 }
29
31 public Pessoa(String nome, Email email, Telefone fone) {
32 this.nome = nome;
33 this.email = email;
34 this.fone = fone;
}
4
Agora queremos usar nossos Value Objects como propriedades das entidades

Output - Run (DR4_E2_A1)

```
2024-07-31T15:14:05.937-03:00  INFO 382868 --- [DR4_E2_A1] [           main] o.apache.catalina.core.StandardService   : Stopping service [Tomcat]
2024-07-31T15:14:05.960-03:00  INFO 382868 --- [DR4_E2_A1] [           main] .s.b.a.l.ConditionEvaluationReportLogger :

Error starting ApplicationContext. To display the condition evaluation report re-run your application with 'debug' enabled.
2024-07-31T15:14:05.984-03:00 ERROR 382868 --- [DR4_E2_A1] [           main] o.s.boot.SpringApplication               : Application run failed

org.springframework.beans.factory.BeanCreationException: Error creating bean with name 'entityManagerFactory' defined in class path resource [org/springframework/boot/autoconfigure/orm/jpa/HibernateJpaConfiguration.class]: Could not determine recommended JdbcType for Java type 'br.edu.infnet.pessoas.domain.Email'
        at org.springframework.beans.factory.support.AbstractAutowireCapableBeanFactory.initializeBean(AbstractAutowireCapableBeanFactory.java:1806) ~[spring-beans-6.1.11.jar:6.1.11]
        at org.springframework.beans.factory.support.AbstractAutowireCapableBeanFactory.doCreateBean(AbstractAutowireCapableBeanFactory.java:600) ~[spring-beans-6.1.11.jar:6.1.11]
        at org.springframework.beans.factory.support.AbstractAutowireCapableBeanFactory.createBean(AbstractAutowireCapableBeanFactory.java:522) ~[spring-beans-6.1.11.jar:6.1.11]
        at org.springframework.beans.factory.support.AbstractBeanFactory.lambda$doGetBean$0(AbstractBeanFactory.java:337) ~[spring-beans-6.1.11.jar:6.1.11]
        at org.springframework.beans.factory.support.DefaultSingletonBeanRegistry.getSingleton(DefaultSingletonBeanRegistry.java:234) ~[spring-beans-6.1.11.jar:6.1.11]
        at org.springframework.beans.factory.support.AbstractBeanFactory.doGetBean(AbstractBeanFactory.java:335) ~[spring-beans-6.1.11.jar:6.1.11]
        at org.springframework.beans.factory.support.AbstractBeanFactory.getBean(AbstractBeanFactory.java:205) ~[spring-beans-6.1.11.jar:6.1.11]
        at org.springframework.context.support.AbstractApplicationContext.finishBeanFactoryInitialization(AbstractApplicationContext.java:954) ~[spring-context-6.1.11.jar:6.1.11]
        at org.springframework.context.support.AbstractApplicationContext.refresh(AbstractApplicationContext.java:625) ~[spring-context-6.1.11.jar:6.1.11]
        at org.springframework.boot.web.servlet.context.ServletWebServerApplicationContext.refresh(ServletWebServerApplicationContext.java:146) ~[spring-boot-3.3.2.jar:3.3.2]
        at org.springframework.boot.SpringApplication.refresh(SpringApplication.java:754) ~[spring-boot-3.3.2.jar:3.3.2]
        at org.springframework.boot.SpringApplication.refreshContext(SpringApplication.java:456) ~[spring-boot-3.3.2.jar:3.3.2]
        at org.springframework.boot.SpringApplication.run(SpringApplication.java:335) ~[spring-boot-3.3.2.jar:3.3.2]
        at org.springframework.boot.SpringApplication.run(SpringApplication.java:1363) ~[spring-boot-3.3.2.jar:3.3.2]
        at org.springframework.boot.SpringApplication.run(SpringApplication.java:1352) ~[spring-boot-3.3.2.jar:3.3.2]
        at br.edu.infnet.Dr4E2A1Application.main(Dr4E2A1Application.java:24) ~[classes/:na]
Caused by: org.hibernate.type.descriptor.java.spi.JdbcTypeRecommendationException: Could not determine recommended JdbcType for Java type 'br.edu.infnet.pessoas.domain.Email'
        at org.hibernate.type.descriptor.java.spi.UnknownBasicJavaType.getRecommendedJdbcType(UnknownBasicJavaType.java:50) ~[hibernate-core-6.5.2.Final.jar:6.5.2.Final]
```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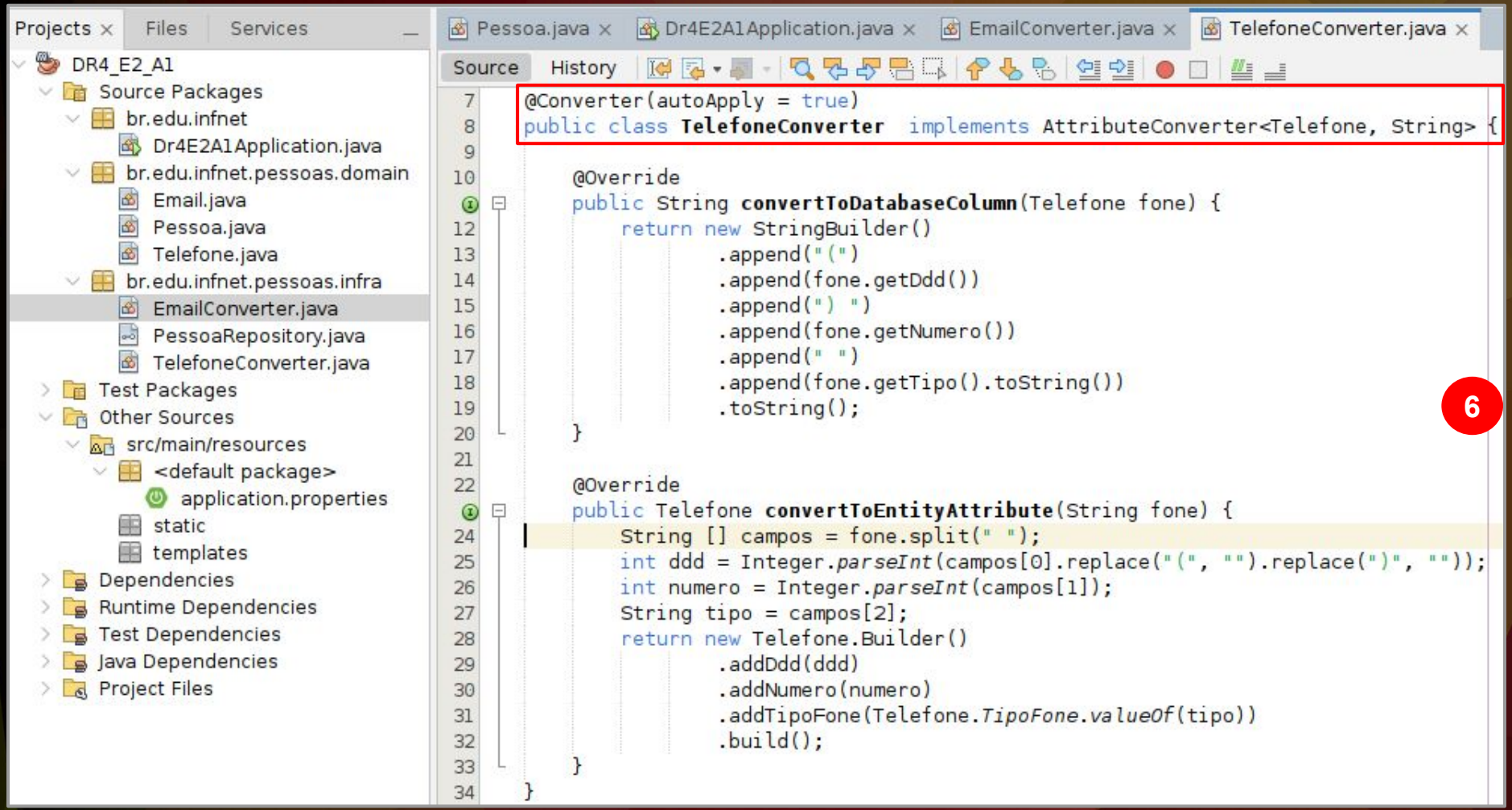
Pessoa.java
Dr4E2A1Application.java
EmailConverter.java
TelefoneConverter.java
Source
History
1 package br.edu.infnet.pessoas.infra;
2
3 import br.edu.infnet.pessoas.domain.Email;
4 import jakarta.persistence.AttributeConverter;
5 import jakarta.persistence.Converter;
6
7 @Converter(autoApply = true)
8 public class EmailConverter implements AttributeConverter<Email, String> {
9
10 @Override
11 public String convertToDatabaseColumn(Email email) {
12 return email.getEmail();
13 }
14
15 @Override
16 public Email convertToEntityAttribute(String email) {
17 return new Email(email);
18 }
19 }
20
5


Projects
Files
Services
DR4_E2_A1
Source Packages
br.edu.infnet
Dr4E2A1Application.java
br.edu.infnet.pessoas.domain
Email.java
Pessoa.java
Telefone.java
br.edu.infnet.pessoas.infra
EmailConverter.java
PessoaRepository.java
TelefoneConverter.java
Test Packages
Other Sources
src/main/resources
<default package>
application.properties
static
templates
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Runtime Dependencies
Test Dependencies
Java Dependencies
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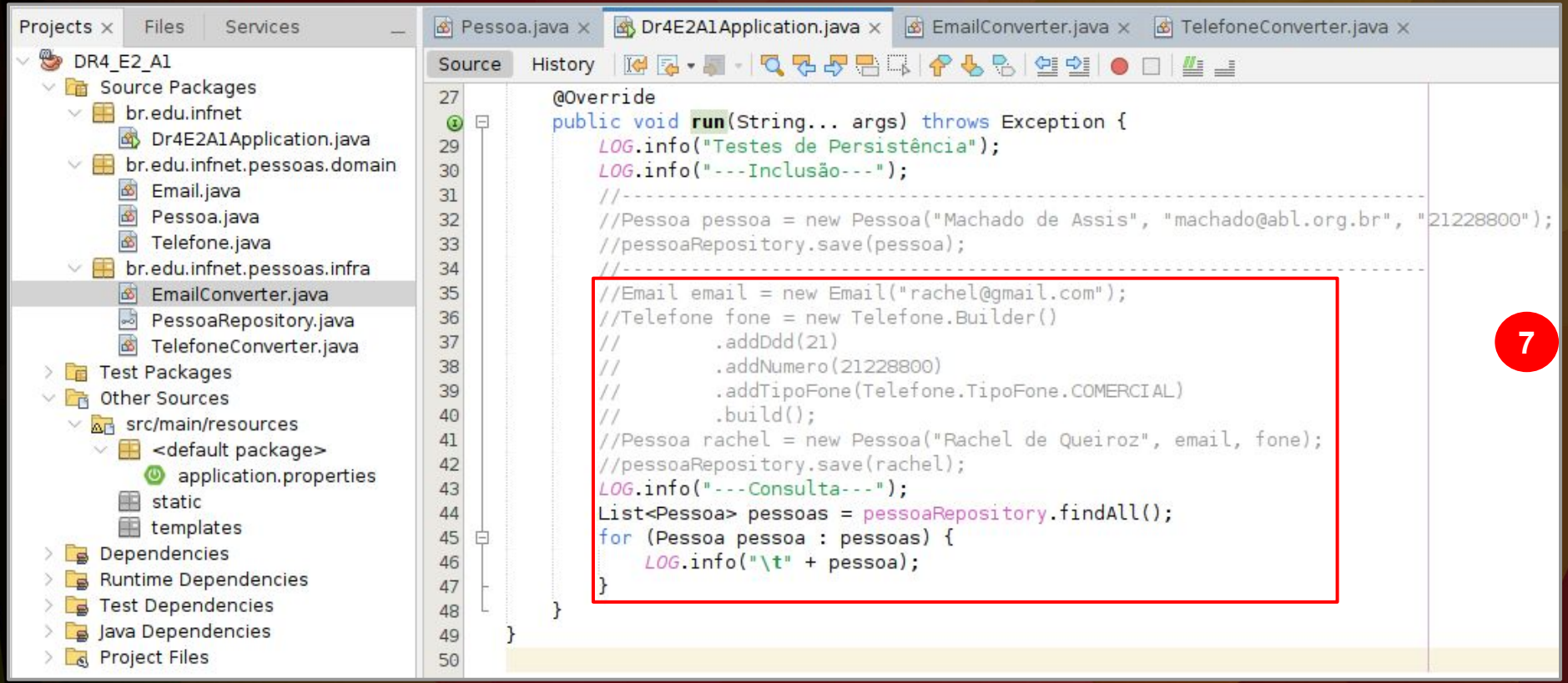
EmailConverter.java
TelefoneConverter.java
Source
History
@Converter(autoApply = true)
public class TelefoneConverter implements AttributeConverter<Telefone, String> {
@Override
public String convertToDatabaseColumn(Telefone fone) {
return new StringBuilder()
.append("(")
.append(fone.getDdd())
.append(") ")
.append(fone.getNumero())
.append(" ")
.append(fone.getTipo().toString())
.toString();
}
@Override
public Telefone convertToEntityAttribute(String fone) {
String [] campos = fone.split(" ");
int ddd = Integer.parseInt(campos[0].replace("(", "").replace(")", ""));
int numero = Integer.parseInt(campos[1]);
String tipo = campos[2];
return new Telefone.Builder()
.addDdd(ddd)
.addNumero(numero)
.addTipoFone(Telefone.TipoFone.valueOf(tipo))
.build();
}
}
6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TelefoneConverter.java
Source
History
@Override
public void run(String... args) throws Exception {
LOG.info("Testes de Persistência");
LOG.info("---Inclusão---");
//----------
//Pessoa pessoa = new Pessoa("Machado de Assis", "machado@abl.org.br", "21228800");
//pessoaRepository.save(pessoa);
//----------
//Email email = new Email("rachel@gmail.com");
//Telefone fone = new Telefone.Builder()
//.addDdd(21)
//.addNumero(21228800)
//.addTipoFone(Telefone.TipoFone.COMERCIAL)
//.build();
//Pessoa rachel = new Pessoa("Rachel de Queiroz", email, fone);
//pessoaRepository.save(rachel);
LOG.info("---Consulta---");
List<Pessoa> pessoas = pessoaRepository.findAll();
for (Pessoa pessoa : pessoas) {
LOG.info("\t" + pessoa);
}
}
}
7

Output

Debugger Console × | Run (DR4_E2_A1) ×

```
2024-07-31T15:56:30.418-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.apache.catalina.core.StandardService   : Starting service [T
2024-07-31T15:56:30.418-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.apache.catalina.core.StandardEngine    : Starting Servlet en
2024-07-31T15:56:30.474-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring
t
2024-07-31T15:56:30.475-03:00  INFO 414864 --- [DR4_E2_A1] [           main] w.s.c.ServletWebServerApplicationContext : Root WebApplication
ted in 1390 ms
2024-07-31T15:56:30.508-03:00  INFO 414864 --- [DR4_E2_A1] [           main] com.zaxxer.hikari.HikariDataSource       : HikariPool-1 - Star
2024-07-31T15:56:30.717-03:00  INFO 414864 --- [DR4_E2_A1] [           main] com.zaxxer.hikari.pool.HikariPool        : HikariPool-1 - Added connection conn0: url=jdbc:h
2:file:/home/armeniocardoso/JavaProjects/h2_databases/DR4_1 user=SA
2024-07-31T15:56:30.731-03:00  INFO 414864 --- [DR4_E2_A1] [           main] com.zaxxer.hikari.HikariDataSource       : HikariPool-1 - Start completed.
2024-07-31T15:56:30.742-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.s.b.a.h2.H2ConsoleAutoConfiguration    : H2 console available at '/h2-console'. Database a
vailable at 'jdbc:h2:file:/home/armeniocardoso/JavaProjects/h2_databases/DR4_1'
2024-07-31T15:56:30.853-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.hibernate.jpa.internal.util.LogHelper  : HHH000204: Processing PersistenceUnitInfo [name:
default]
2024-07-31T15:56:30.899-03:00  INFO 414864 --- [DR4_E2_A1] [           main] org.hibernate.Version                    : HHH000412: Hibernate ORM core version 6.5.2.Final
2024-07-31T15:56:30.926-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.h.c.internal.RegionFactoryInitiator    : HHH000026: Second-level cache disabled
2024-07-31T15:56:31.208-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.s.o.j.p.SpringPersistenceUnitInfo      : No LoadTimeWeaver setup: ignoring JPA class trans
former
2024-07-31T15:56:31.240-03:00  WARN 414864 --- [DR4_E2_A1] [           main] org.hibernate.orm.deprecation            : HHH90000025: H2Dialect does not need to be specif
ied explicitly using 'hibernate.dialect' (remove the property setting and it will be selected by default)
2024-07-31T15:56:31.847-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.h.e.t.j.p.i.JtaPlatformInitiator       : HHH000489: No JTA platform available (set 'hibern
ate.transaction.jta.platform' to enable JTA platform integration)
2024-07-31T15:56:31.892-03:00  INFO 414864 --- [DR4_E2_A1] [           main] j.LocalContainerEntityManagerFactoryBean : Initialized JPA EntityManagerFactory for persiste
nce unit 'default'
2024-07-31T15:56:32.113-03:00  WARN 414864 --- [DR4_E2_A1] [           main] JpaBaseConfiguration$JpaWebConfiguration : spring.jpa.open-in-view is enabled by default. Th
erefore, database queries may be performed during view rendering. Explicitly configure spring.jpa.open-in-view to disable this warning
2024-07-31T15:56:32.415-03:00  INFO 414864 --- [DR4_E2_A1] [           main] o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port 8080 (http) with context p
ath '/'
2024-07-31T15:56:32.423-03:00  INFO 414864 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : Started Dr4E2A1Application in 3.775 seconds (proc
ess running for 4.267)
2024-07-31T15:56:32.426-03:00  INFO 414864 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : Testes de Persistência
2024-07-31T15:56:32.426-03:00  INFO 414864 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : ---Inclusão---
2024-07-31T15:56:32.426-03:00  INFO 414864 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         : ---Consulta---
2024-07-31T15:56:32.546-03:00  INFO 414864 --- [DR4_E2_A1] [           main] br.edu.infnet.Dr4E2A1Application         :         Pessoa{id=1, nome=Rachel de Queiroz, email
mail{email=rachel@gmail.com}, fone=Telefone{ddd=21, numero=21228800, tipo=COMERCIAL}}
```

# Construção de Aggregates

**Agregado** é um padrão em DDD que define um grupo de objetos de domínio que pertencem ao mesmo contexto delimitado e mudam juntos.

Ele tem uma **entidade raiz**, que é o principal ponto de entrada para acessar o **Agregado**.

A entidade raiz é responsável por impor as regras de negócios e invariantes do **Agregado**.

Ele tem uma ou mais **Entidades** e **Objetos de Valor** que representam os conceitos e comportamentos do domínio.

Ele tem um limite, que define o que está dentro e fora do **Agregado**. O limite também determina o escopo de consistência e transações para o **Agregado**.

Ele tem uma identidade, que geralmente é derivada da entidade raiz. A identidade permite que o **Agregado** seja referenciado e manipulado por outros agregados ou serviços.

Um exemplo de agregado é um **Pedido** e seus itens de linha.

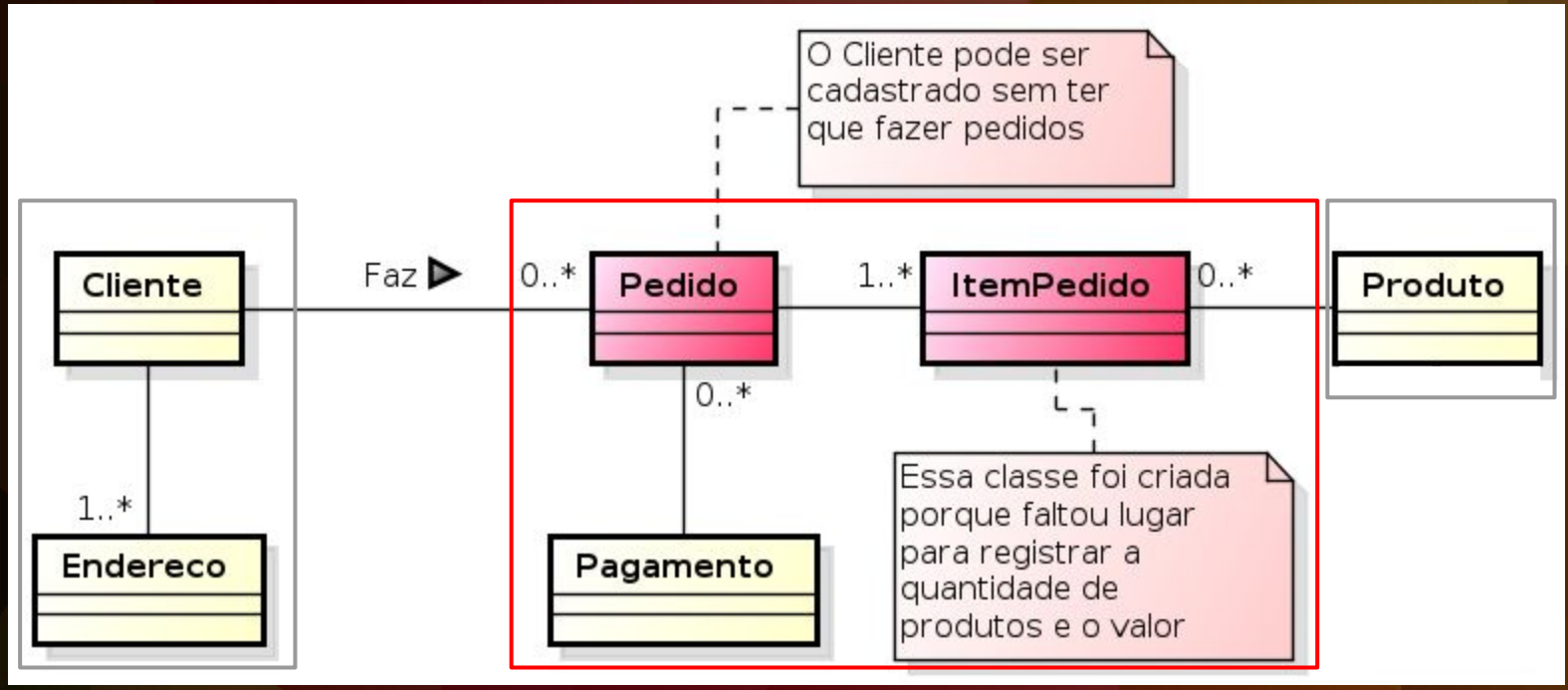
**Pedido** é a entidade raiz, que tem uma identidade (número do pedido), um estado (status, valor total, etc.) e um comportamento (colocar, cancelar, enviar, etc.).

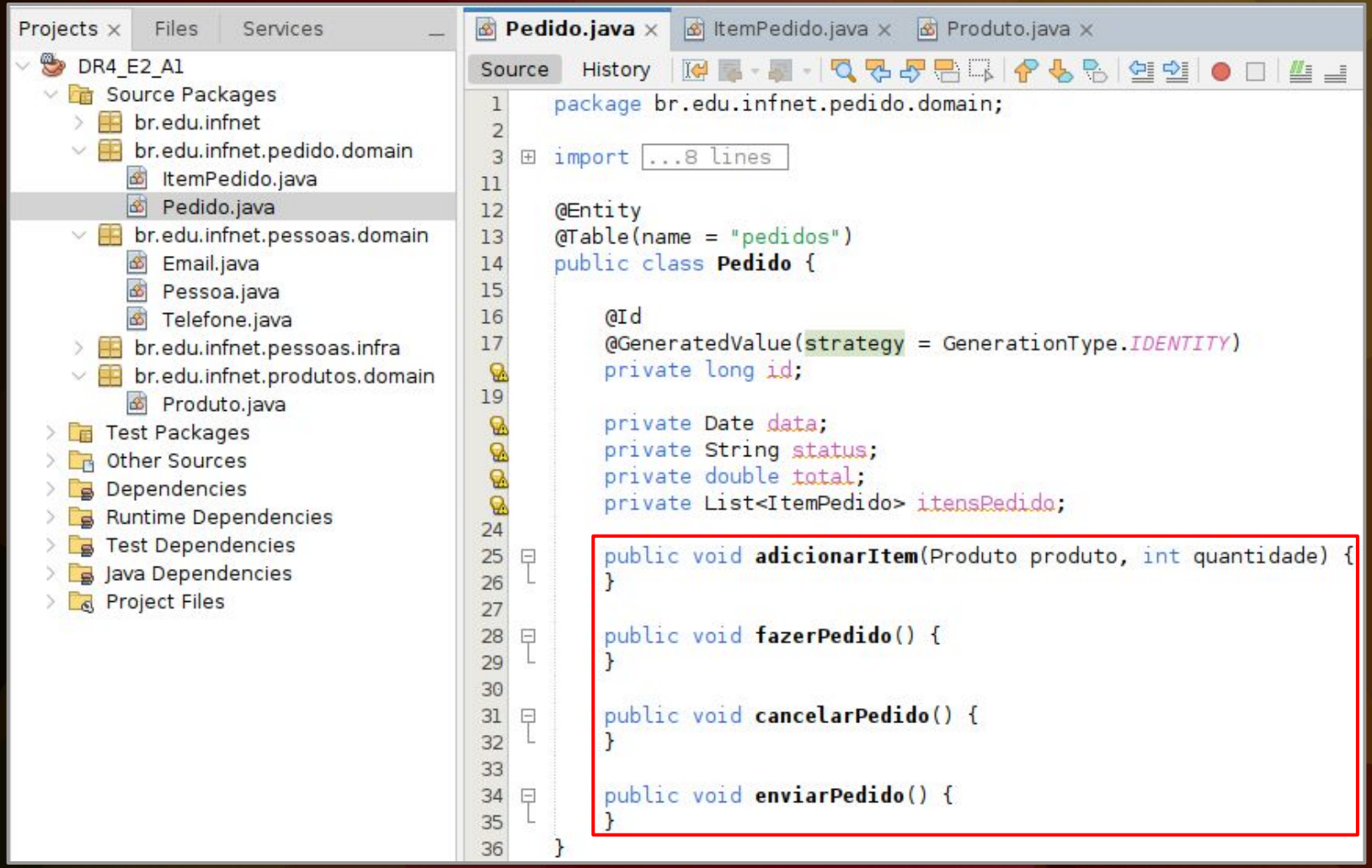
Os itens de linha são objetos de valor, que representam os produtos e quantidades pedidos.

**Pedido** e seus itens de linha formam um agregado, que tem um limite que o separa de outros agregados (como clientes ou produtos).

O agregado do **Pedido** garante que as regras de negócios e invariantes sejam satisfeitas, como por exemplo:

- Um pedido não pode ter itens de linha zero ou negativos.
- Um pedido não pode ser enviado se for cancelado ou não pago.
- Um pedido não pode ser modificado depois de enviado.


O Cliente pode ser cadastrado sem ter que fazer pedidos
Cliente
Faz
0..*
Pedido
1..*
ItemPedido
0..*
Produto
0..*
1..*
Endereco
Pagamento
Essa classe foi criada porque faltou lugar para registrar a quantidade de produtos e o valor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br.edu.infnet
br.edu.infnet.pedido.domain
ItemPedido.java
Pedido.java
br.edu.infnet.pessoas.domain
Email.java
Pessoa.java
Telefone.java
br.edu.infnet.pessoas.infra
br.edu.infnet.produtos.domain
Produto.java
Test Packages
Other Sources
Dependencies
Runtime Dependencies
Test Dependencies
Java Dependencies
Project Files
Pedido.java
ItemPedido.java
Produto.java
Source
History
1 package br.edu.infnet.pedido.domain;
2
3 import ...8 lines
11
12 @Entity
13 @Table(name = "pedidos")
14 public class Pedido {
15
16 @Id
17 @GeneratedValue(strategy = GenerationType.IDENTITY)
private long id;
19
private Date data;
private String status;
private double total;
private List<ItemPedido> itensPedido;
24
25 public void adicionarItem(Produto produto, int quantidade) {
26 }
27
28 public void fazerPedido() {
29 }
30
31 public void cancelarPedido() {
32 }
33
34 public void enviarPedido() {
35 }
36 }