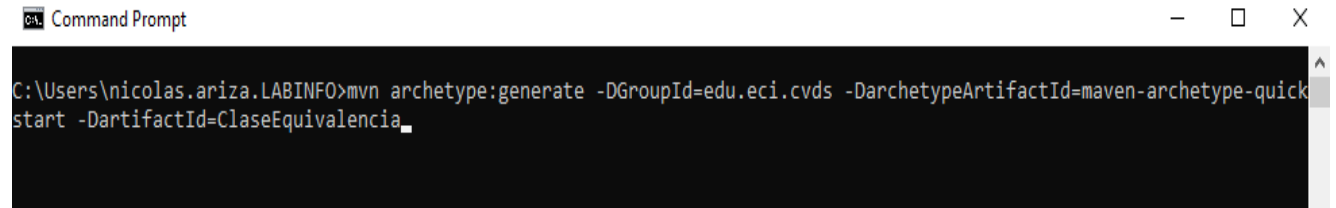


# CLASES DE EQUIVALENCIA - Documentación Laboratorio 3 CVDS

Estudiante: Nicolás Ariza Barbosa.

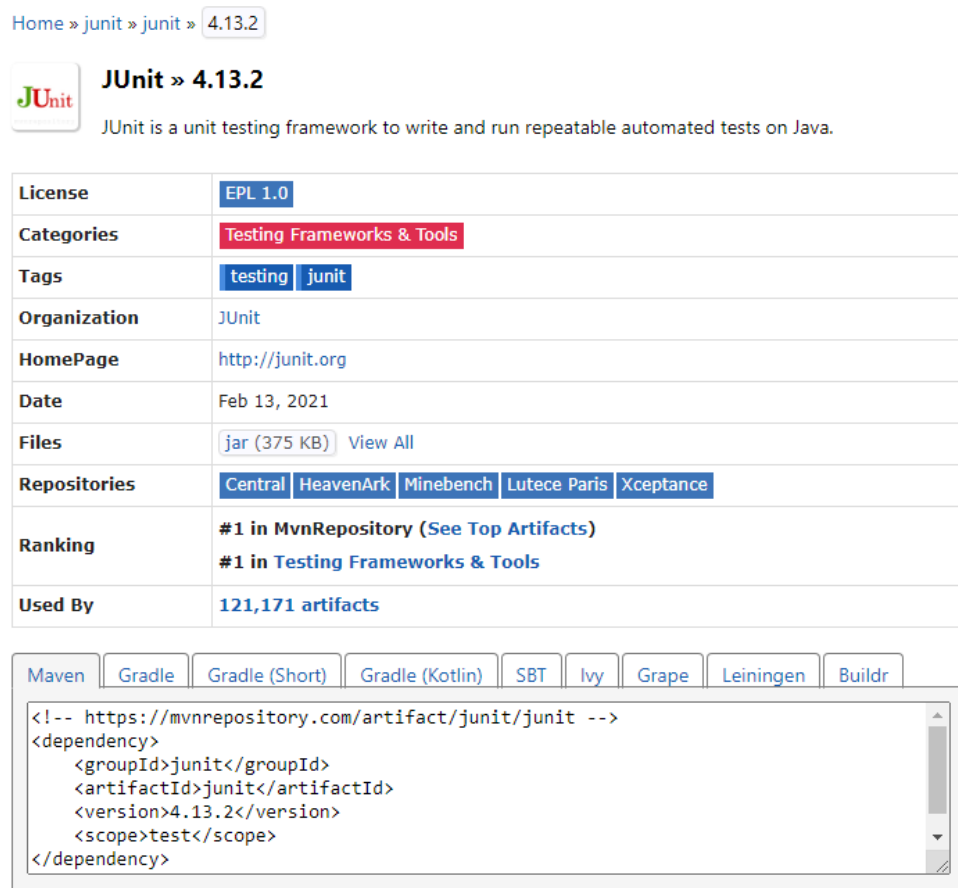
## CREAR UNPROYECTO CON MAVEN



```
Command Prompt
C:\Users\nicolas.ariza.LABINFO>mvn archetype:generate -DgroupId=edu.eci.cvds -DarchetypeArtifactId=maven-archetype-quickstart -DartifactId=ClaseEquivalencia_
```

## Actualizar y crear dependencias en el proyecto

Busque en internet el repositorio central de Maven. Busque el artefacto JUnit y entre a la versión más nueva. Ingrese a la pestaña de Maven y haga click en el texto de la dependencia para copiarlo al portapapeles.



Home » junit » junit » 4.13.2

**JUnit » 4.13.2**

JUnit is a unit testing framework to write and run repeatable automated tests on Java.

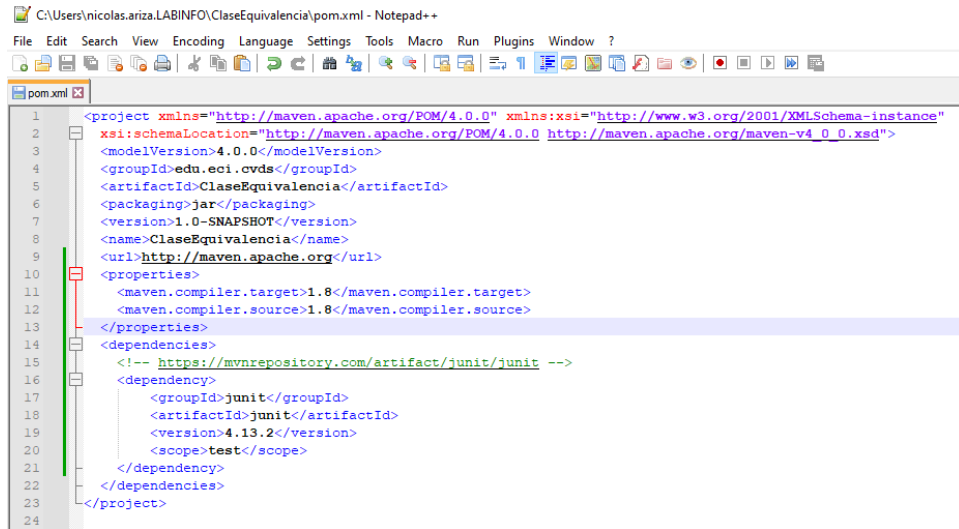
License	EPL 1.0
Categories	Testing Frameworks & Tools
Tags	testing junit
Organization	JUnit
HomePage	<a href="http://junit.org">http://junit.org</a>
Date	Feb 13, 2021
Files	<a href="#">jar (375 KB)</a> <a href="#">View All</a>
Repositories	<a href="#">Central</a> <a href="#">HeavenArk</a> <a href="#">Minebench</a> <a href="#">Lutece Paris</a> <a href="#">Xceptance</a>
Ranking	#1 in MvnRepository (See Top Artifacts) #1 in Testing Frameworks & Tools
Used By	121,171 artifacts

Maven | Gradle | Gradle (Short) | Gradle (Kotlin) | SBT | Ivy | Grape | Leiningen | Buildr

```
<!-- https://mvnrepository.com/artifact/junit/junit -->
<dependency>
  <groupId>junit</groupId>
  <artifactId>junit</artifactId>
  <version>4.13.2</version>
  <scope>test</scope>
</dependency>
```

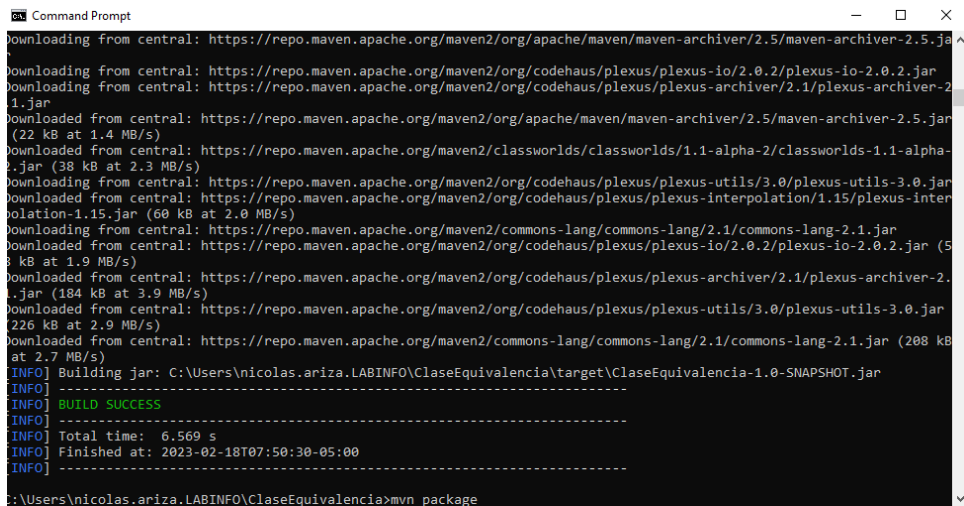
Edite el archivo pom.xml y realice las siguientes actualizaciones:

Agregue la dependencia copiada a la sección de dependencias.



## COMPILAR Y EJECUTAR

Ejecute los comandos necesarios de Maven, para compilar el proyecto y verificar que el proyecto se creó correctamente y los cambios realizados al archivo pom no generan inconvenientes.



Busque el comando requerido para ejecutar las pruebas unitarias de un proyecto desde Maven y ejecútelo sobre el proyecto. Se debe ejecutar la clase AppTest con resultado exitoso.

```
Command Prompt

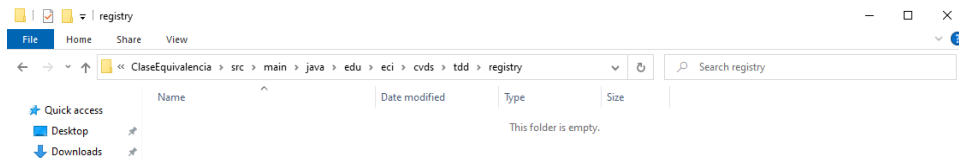
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ ClaseEquivalencia ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\src\test\resources
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ ClaseEquivalencia ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding Cp1252, i.e. build is platform dependent!
[INFO] Compiling 1 source file to C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\target\test-classes
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ ClaseEquivalencia ---
[INFO] Surefire report directory: C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\target\surefire-reports

-----
T E S T S
-----
Running edu.eci.cvds.AppTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.029 sec

Results :

Tests run: 1, Failures: 0, Errors: 0, Skipped: 0

[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.855 s
[INFO] Finished at: 2023-02-18T07:52:17-05:00
[INFO] -----
C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia>mvn clean test
```



```
C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\src\main\java\edu\eci\cvds\tdd\registry\RegisterResult.java - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

pom.xml RegisterResult.java
1 package edu.eci.cvds.tdd.registry;
2
3 public enum RegisterResult {
4     DEAD, UNDERAGE, INVALID_AGE, VALID, DUPLICATED
5 }
```

```
C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\src\main\java\edu\eci\cvds\tdd\registry\Gender.java - Notepad++

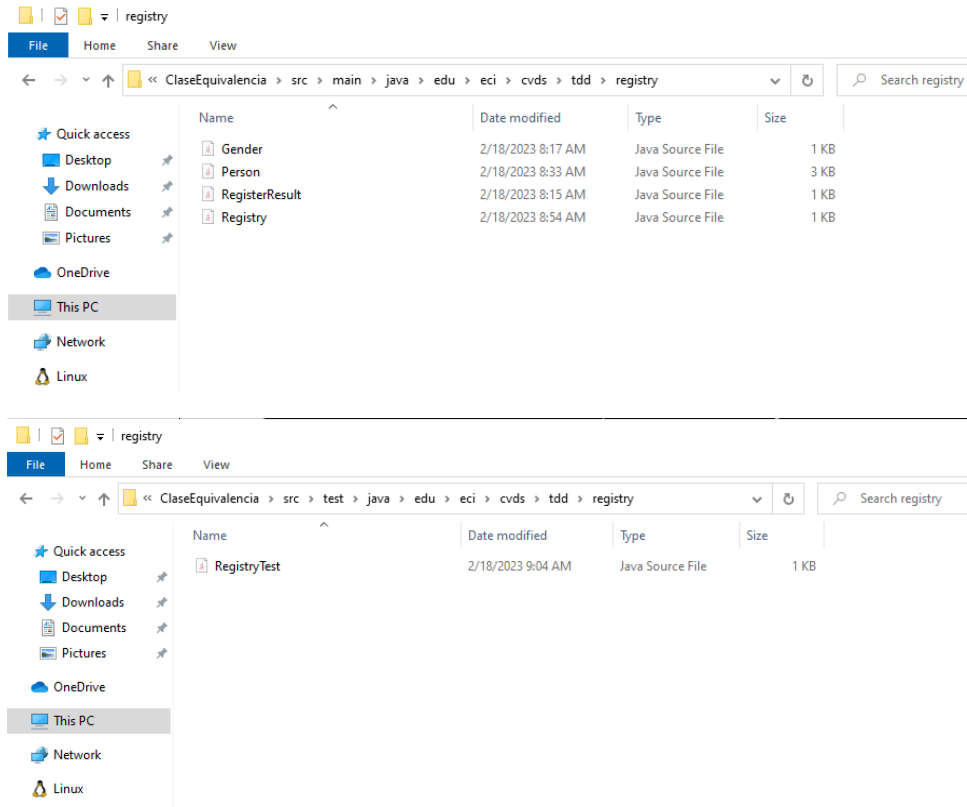
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

pom.xml RegisterResult.java Gender.java Person.java
1 package edu.eci.cvds.tdd.registry;
2 public enum Gender {
3     MALE, FEMALE, UNIDENTIFIED;
4 }
```

```
C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\src\main\java\edu\eci\cvds\tdd\registry\Person.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
pom.xml RegisterResult.java Gender.java Person.java
1 package edu.eci.cvds.tdd.registry;
2 /** Person representation Class */
3 public class Person {
4     /** Person's name */
5     private String name;
6     /** A person's identification number */
7     private int id;
8     /** Person's age */
9     private int age;
10    /** Person's gender */
11    private Gender gender;
12    /** Flag to specify if a person is alive */
13    private boolean alive;
14
15    /**
16     * The class' default constructor
17     */
18    public Person() {
19        super();
20    }
21
22    /**
23     * A person constructor with all the information
24     *
25     * @param name the name
26     * @param id the identification number
27     * @param age the age
28     * @param gender the gender
29     * @param alive if the person is alive
30     */
31    public Person(String name, int id, int age, Gender gender, boolean alive) {
32        this.name = name;
33        this.id = id;
34        this.age = age;
35        this.gender = gender;
36    }
37
38    length: 2,381 lines: 125 Ln: 125 Col: 1 Pos: 2,381 Windows (CR LF) UTF-8 INS
```

```
C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\src\main\java\edu\eci\cvds\tdd\registry\Registry.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
pom.xml RegisterResult.java Gender.java Person.java Registry.java
1 package edu.eci.cvds.tdd.registry;
2 public class Registry {
3     public RegisterResult registerVoter(Person p) {
4         // TODO Validate person and return real result.
5         return RegisterResult.VALID;
6     }
7
8
9
```

```
C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\src\test\java\edu\eci\cvds\tdd\registry\RegistryTest.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
pom.xml RegisterResult.java Gender.java Person.java Registry.java RegistryTest.java
1 package edu.eci.cvds.tdd.registry;
2 import org.junit.Assert;
3 import org.junit.Test;
4 public class RegistryTest {
5     private Registry registry = new Registry();
6     @Test
7     public void validateRegistryResult() {
8         Person person = new Person();
9         RegisterResult result = registry.registerVoter(person);
10        Assert.assertEquals(RegisterResult.VALID, result);
11    }
12    // TODO Complete with more test cases
13}
```



## EJECUTAR LAS PRUEBAS

```
Command Prompt

[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding Cp1252, i.e. build is platform dependent!
[INFO] Compiling 2 source files to C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\target\test-classes
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ ClaseEquivalencia ---
[INFO] Surefire report directory: C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\target\surefire-reports

-----
T E S T S
-----
Running edu.eci.cvds.AppTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.023 sec
Running edu.eci.cvds.tdd.registry.RegistryTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.042 sec

Results :

Tests run: 2, Failures: 0, Errors: 0, Skipped: 0

[INFO] --- maven-jar-plugin:2.4:jar (default-jar) @ ClaseEquivalencia ---
[INFO] Building jar: C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\target\ClaseEquivalencia-1.0-SNAPSHOT.jar
[INFO] BUILD SUCCESS
[INFO] Total time: 2.157 s
[INFO] Finished at: 2023-02-18T09:07:26-05:00
[INFO]

C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia>mvn package
```

```
Command Prompt
[INFO] skip non existing resourceDirectory C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\src\test\resources
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ ClaseEquivalencia ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding Cp1252, i.e. build is platform dependent!
[INFO] Compiling 2 source files to C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\target\test-classes
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ ClaseEquivalencia ---
[INFO] Surefire report directory: C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia\target\surefire-reports

-----
T E S T S
-----
Running edu.eci.cvds.AppTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.025 sec
Running edu.eci.cvds.tdd.registry.RegistryTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.029 sec

Results :

Tests run: 2, Failures: 0, Errors: 0, Skipped: 0

[INFO] --- BUILD SUCCESS ---
[INFO] Total time: 1.960 s
[INFO] Finished at: 2023-02-18T09:08:17-05:00
[INFO] -----
C:\Users\nicolas.ariza.LABINFO\ClaseEquivalencia>mvn test_
```

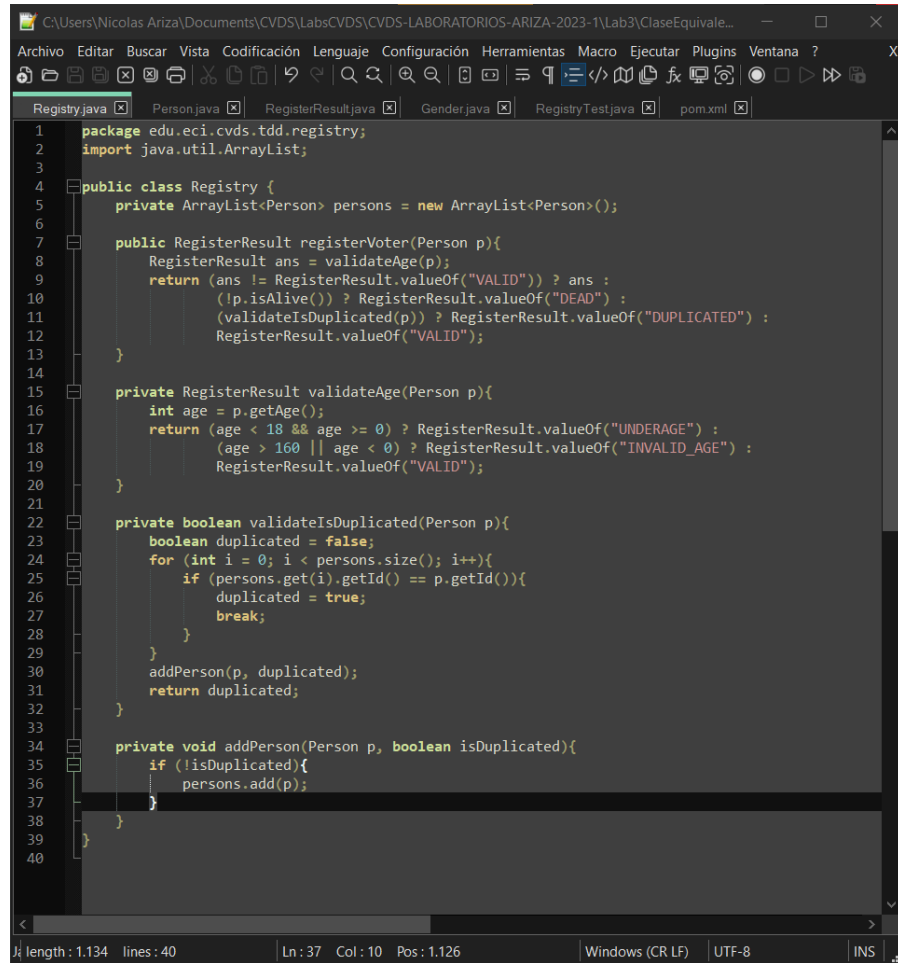
## FINALIZAR EL EJERCICIO

Complete la implementación de la clase RegistryTest.java con (al menos) un método por cada clase de equivalencia, creando diferentes personas y validando que el resultado sea el esperado.

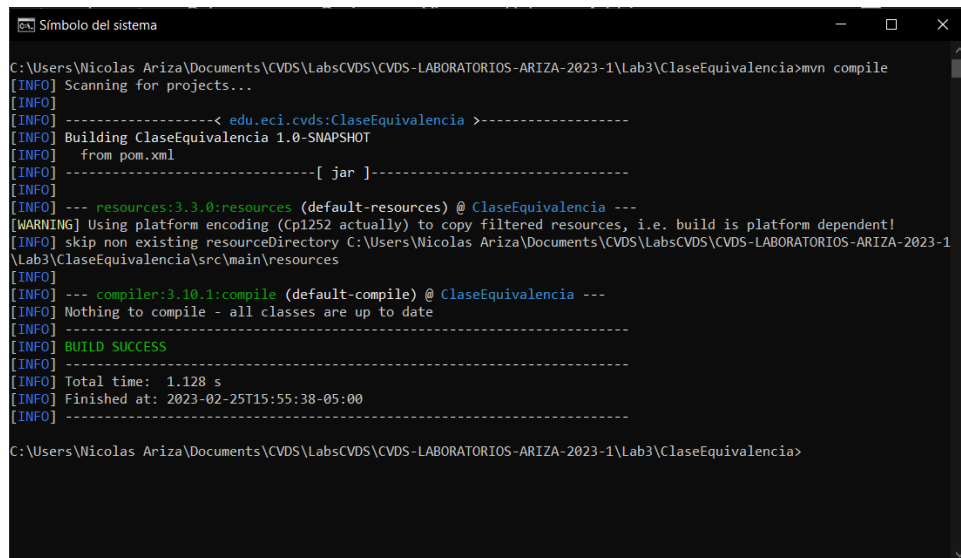
```
CVUsers\Nicolas Ariza\Documents\CVDS\LabsCVDS\CVDS-LABORATORIOS-ARIZA-2023-1\Lab3\ClaseEquivale...
Archivo  Editar  Buscar  Vista  Codificación  Lenguaje  Configuración  Herramientas  Macro  Ejecutar  Plugins  Ventana  ?
Registry.java  Person.java  RegisterResult.java  Gender.java  RegistryTest.java  pom.xml

1  package edu.eci.cvds.tdd.registry;
2  import org.junit.Assert;
3  import org.junit.Test;
4
5  public class RegistryTest {
6      private Registry registry = new Registry();
7      private RegisterResult expected;
8
9
10     @Test
11     public void Should_Allow_People_With_18() {
12         // Arrange
13         Person person = new Person("Nick", 1001, 21, Gender.MALE, true);
14         person.setAge(18);
15         expected = RegisterResult.VALID;
16         // Act
17         RegisterResult result = registry.registerVoter(person);
18         // Assert
19         Assert.assertEquals(expected, result);
20     }
21
22     @Test
23     public void Should_Not_Allow_LessThan_18() {
24         // Arrange
25         Person person = new Person("Nick", 1002, 21, Gender.MALE, true);
26         person.setAge(17);
27         expected = RegisterResult.UNDERAGE;
28         // Act
29         RegisterResult result = registry.registerVoter(person);
30         // Assert
31         Assert.assertEquals(expected, result);
32     }
33
34     @Test
35     public void Should_Not_Allow_No_Sense_Ages() {
36         // Arrange
37         Person person = new Person("Nick", 1003, 21, Gender.MALE, true);
38         person.setAge(-10);
39         expected = RegisterResult.INVALID_AGE;
40         // Act
41         RegisterResult result = registry.registerVoter(person);
42         // Assert
43         Assert.assertEquals(expected, result);
44     }
45
46     @Test
47
length: 2.193  lines: 80  Ln: 25  Col: 27  Pos: 685  Windows (CR LF)  UTF-8  INS
```

Complete la implementación del método registerVoter en la clase Registry.java para retornar el resultado esperado según la entrada.



```
1 package edu.eci.cvds.tdd.registry;
2 import java.util.ArrayList;
3
4 public class Registry {
5     private ArrayList<Person> persons = new ArrayList<Person>();
6
7     public RegisterResult registerVoter(Person p){
8         RegisterResult ans = validateAge(p);
9         return (ans != RegisterResult.valueOf("VALID")) ? ans :
10             (p.isAlive()) ? RegisterResult.valueOf("DEAD") :
11             (validateIsDuplicated(p)) ? RegisterResult.valueOf("DUPLICATED") :
12             RegisterResult.valueOf("VALID");
13     }
14
15     private RegisterResult validateAge(Person p){
16         int age = p.getAge();
17         return (age < 18 && age >= 0) ? RegisterResult.valueOf("UNDERAGE") :
18             (age > 160 || age < 0) ? RegisterResult.valueOf("INVALID_AGE") :
19             RegisterResult.valueOf("VALID");
20     }
21
22     private boolean validateIsDuplicated(Person p){
23         boolean duplicated = false;
24         for (int i = 0; i < persons.size(); i++){
25             if (persons.get(i).getId() == p.getId()){
26                 duplicated = true;
27                 break;
28             }
29         }
30         addPerson(p, duplicated);
31         return duplicated;
32     }
33
34     private void addPerson(Person p, boolean isDuplicated){
35         if (!isDuplicated){
36             persons.add(p);
37         }
38     }
39 }
40
```



```
Símbolo del sistema
C:\Users\Nicolas Ariza\Documents\CVDS\ LabsCVDS\CVDS-LABORATORIOS-ARIZA-2023-1\Lab3\ClaseEquivalencia>mvn compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----< edu.eci.cvds:ClaseEquivalencia >-----
[INFO] Building ClaseEquivalencia 1.0-SNAPSHOT
[INFO] from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- resources:3.3.0:resources (default-resources) @ ClaseEquivalencia ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\Nicolas Ariza\Documents\CVDS\ LabsCVDS\CVDS-LABORATORIOS-ARIZA-2023-1\Lab3\ClaseEquivalencia\src\main\resources
[INFO]
[INFO] --- compiler:3.10.1:compile (default-compile) @ ClaseEquivalencia ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] -----
[INFO] Total time: 1.128 s
[INFO] Finished at: 2023-02-25T15:55:38-05:00
[INFO]
C:\Users\Nicolas Ariza\Documents\CVDS\ LabsCVDS\CVDS-LABORATORIOS-ARIZA-2023-1\Lab3\ClaseEquivalencia>
```

```
Símbolo del sistema
[INFO] skip non existing resourceDirectory C:\Users\Nicolas Ariza\Documents\CVDS\LabsCVDS\CVDS-LABORATORIOS-ARIZA-2023-1\Lab3\ClaseEquivalencia\src\test\resources
[INFO]
[INFO] --- compiler:3.10.1:testCompile (default-testCompile) @ ClaseEquivalencia ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- surefire:3.0.0-M8:test (default-test) @ ClaseEquivalencia ---
[INFO] Using auto detected provider org.apache.maven.surefire.junit4.JUnit4Provider
[INFO]
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running edu.eci.cvds.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.067 s - in edu.eci.cvds.AppTest
[INFO] Running edu.eci.cvds.tdd.registry.RegistryTest
[INFO] Tests run: 6, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.045 s - in edu.eci.cvds.tdd.registry.RegistryTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 7, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 3.249 s
[INFO] Finished at: 2023-02-25T15:43:21-05:00
[INFO]
[INFO] -----
C:\Users\Nicolas Ariza\Documents\CVDS\LabsCVDS\CVDS-LABORATORIOS-ARIZA-2023-1\Lab3\ClaseEquivalencia>mvn test
```