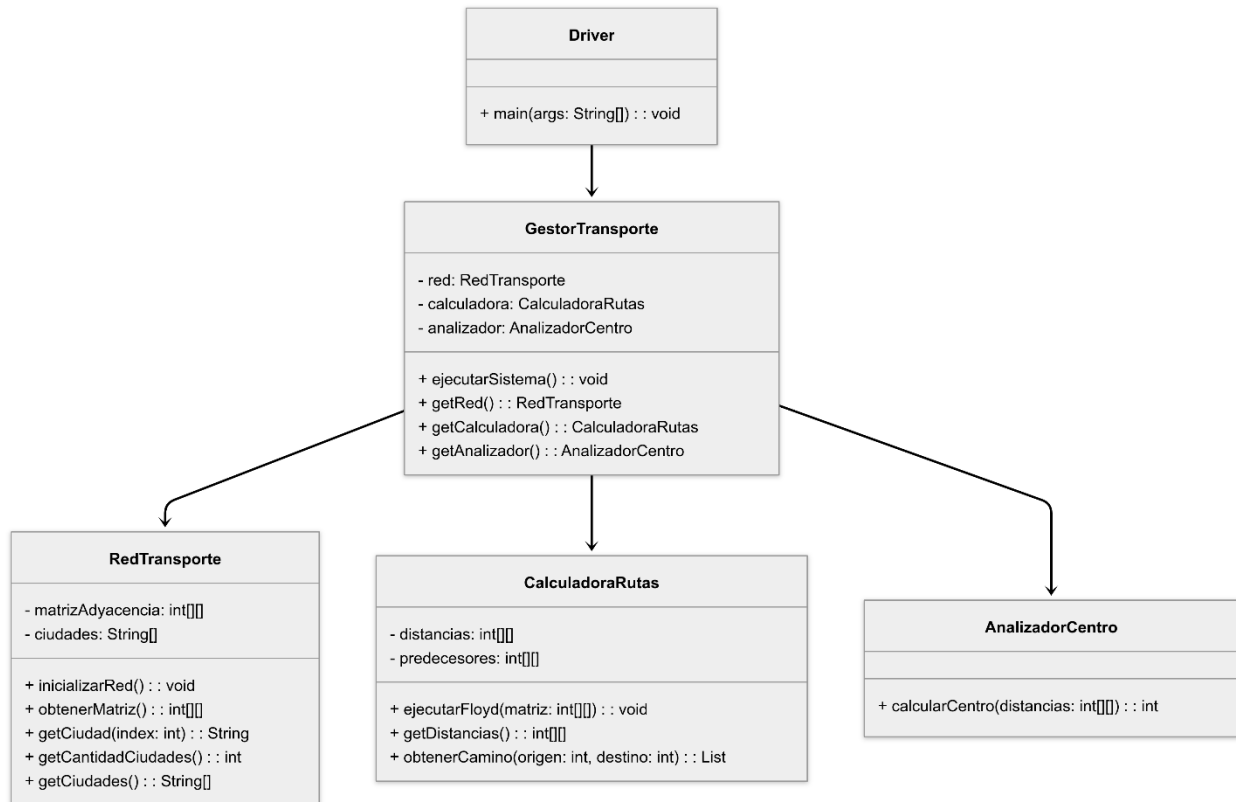


Hoja de Trabajo #10

Diagrama de clases:



Prueba de funcionamiento:

```
[INFO] Deleting C:\Users\mated\OneDrive - UVG\AÑO 2\ALG y Estru\Hoja 10\Graph-Floyd\floyd\target
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ graph-floyd ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\mated\OneDrive - UVG\AÑO 2\ALG y Estru\Hoja 10\Graph-Floyd\floyd\src\main\resources
[INFO]
[INFO] --- compiler:3.13.0:compile (default-compile) @ graph-floyd ---
[INFO] Recompiling the module because of changed source code.
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 5 source files with javac [debug target 17] to target\classes
[WARNING] location of system modules is not set in conjunction with -source 17
not setting the location of system modules may lead to class files that cannot run on JDK 17
--release 17 is recommended instead of -source 17 -target 17 because it sets the location of system modules automatically
[INFO]
[INFO] --- exec:3.1.0:java (default-cli) @ graph-floyd ---

Matriz de distancias mínimas:
Ciudad de Guatemala      Zacapa      Chiquimula      Quetzaltenango      Cobán
Ciudad de Guatemala      0            3            4            6            9
Zacapa      10            0            1            3            6
Chiquimula      9            12           0            2            5
Quetzaltenango      7            10           11           0            3
Cobán      4            7            8           10           0

Centro del grafo: Ciudad de Guatemala
Ruta de Ciudad de Guatemala a Zacapa: Ciudad de Guatemala -> Zacapa
Ruta de Ciudad de Guatemala a Chiquimula: Ciudad de Guatemala -> Zacapa -> Chiquimula
Ruta de Ciudad de Guatemala a Quetzaltenango: Ciudad de Guatemala -> Zacapa -> Chiquimula -> Quetzaltenango
Ruta de Ciudad de Guatemala a Cobán: Ciudad de Guatemala -> Zacapa -> Chiquimula -> Quetzaltenango -> Cobán
```

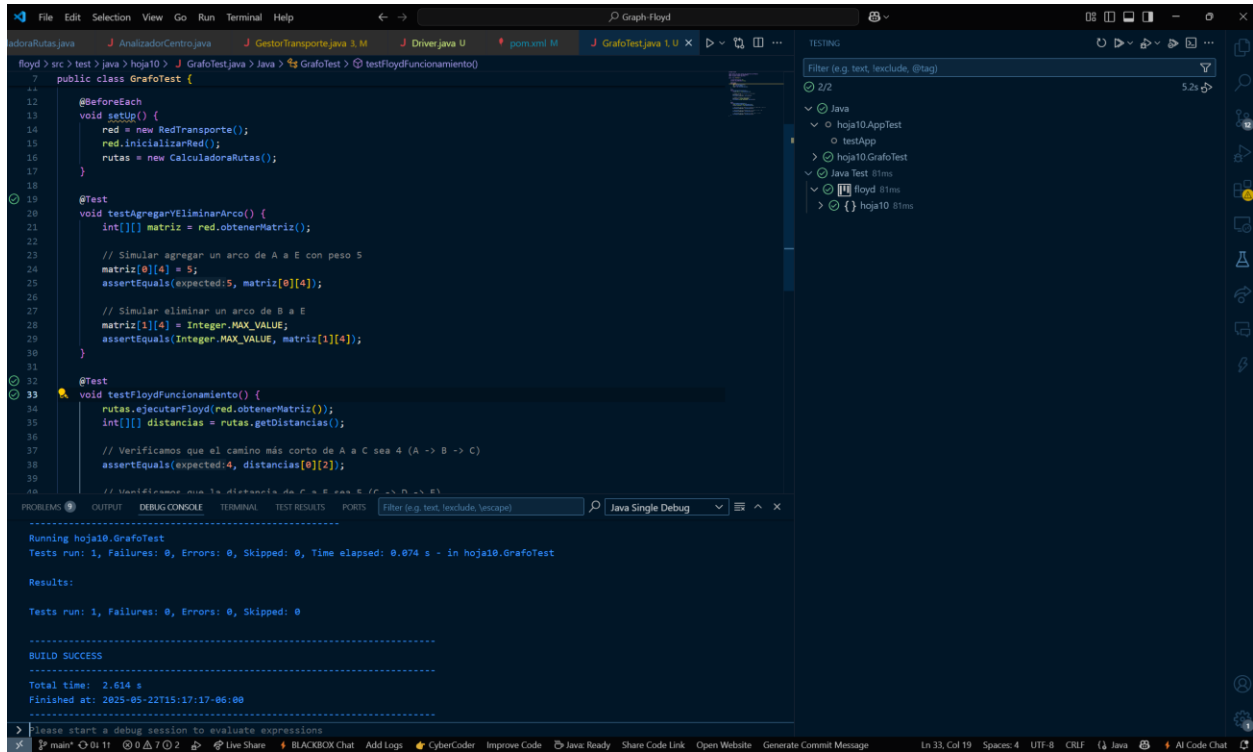
Link del repositorio de GIT:

<https://github.com/Pablownski/Graph-Floyd>

Link explicación:

<https://youtu.be/B97PZWKB6HU>

Prueba Unitaria JUnit:



```
12 public class GrafoTest {
13     @BeforeEach
14     void setUp() {
15         red = new RedTransporte();
16         red.inicializarRed();
17         rutas = new CalculadoraRutas();
18     }
19
20     @Test
21     void testAgregarYEliminarArco() {
22         int[][] matriz = red.obtenerMatriz();
23
24         // Simular agregar un arco de A a E con peso 5
25         matriz[0][4] = 5;
26         assertEquals(expected:5, matriz[0][4]);
27
28         // Simular eliminar un arco de B a E
29         matriz[1][4] = Integer.MAX_VALUE;
30         assertEquals(Integer.MAX_VALUE, matriz[1][4]);
31     }
32
33     @Test
34     void testFloydFuncionamiento() {
35         rutas.ejecutarFloyd(red.obtenerMatriz());
36         int[][] distancias = rutas.getDistancias();
37
38         // Verificamos que el camino más corto de A a C sea 4 (A -> B -> C)
39         assertEquals(expected:4, distancias[0][2]);
40
41         // Verificamos que la distancia de C a E sea 5 (C -> D -> E)
42     }
43 }
```

Running hoja10.GrafoTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.074 s - in hoja10.GrafoTest

Results:

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

BUILD SUCCESS

Total time: 2.614 s
Finished at: 2025-05-22T15:17:06:00
