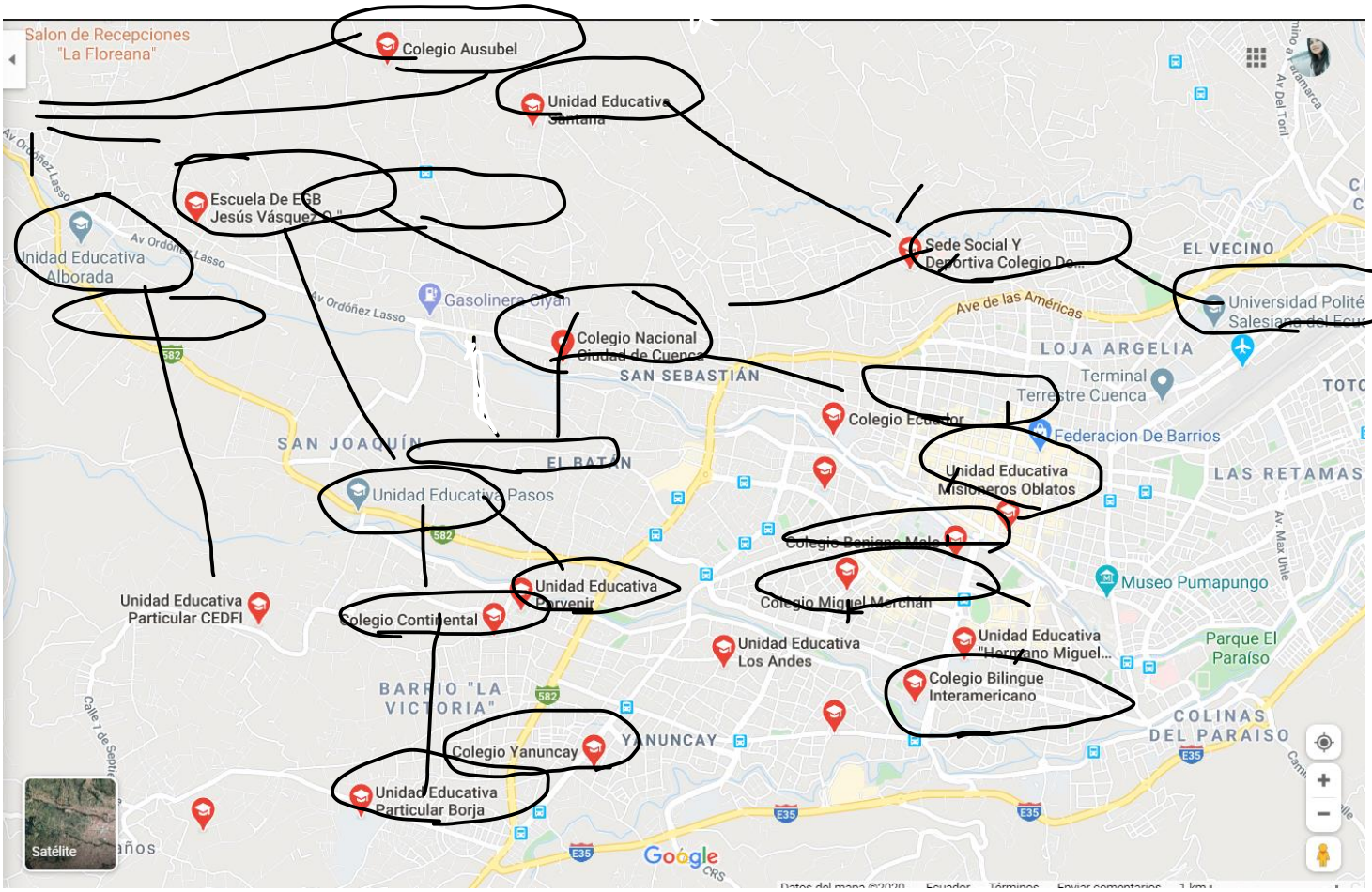
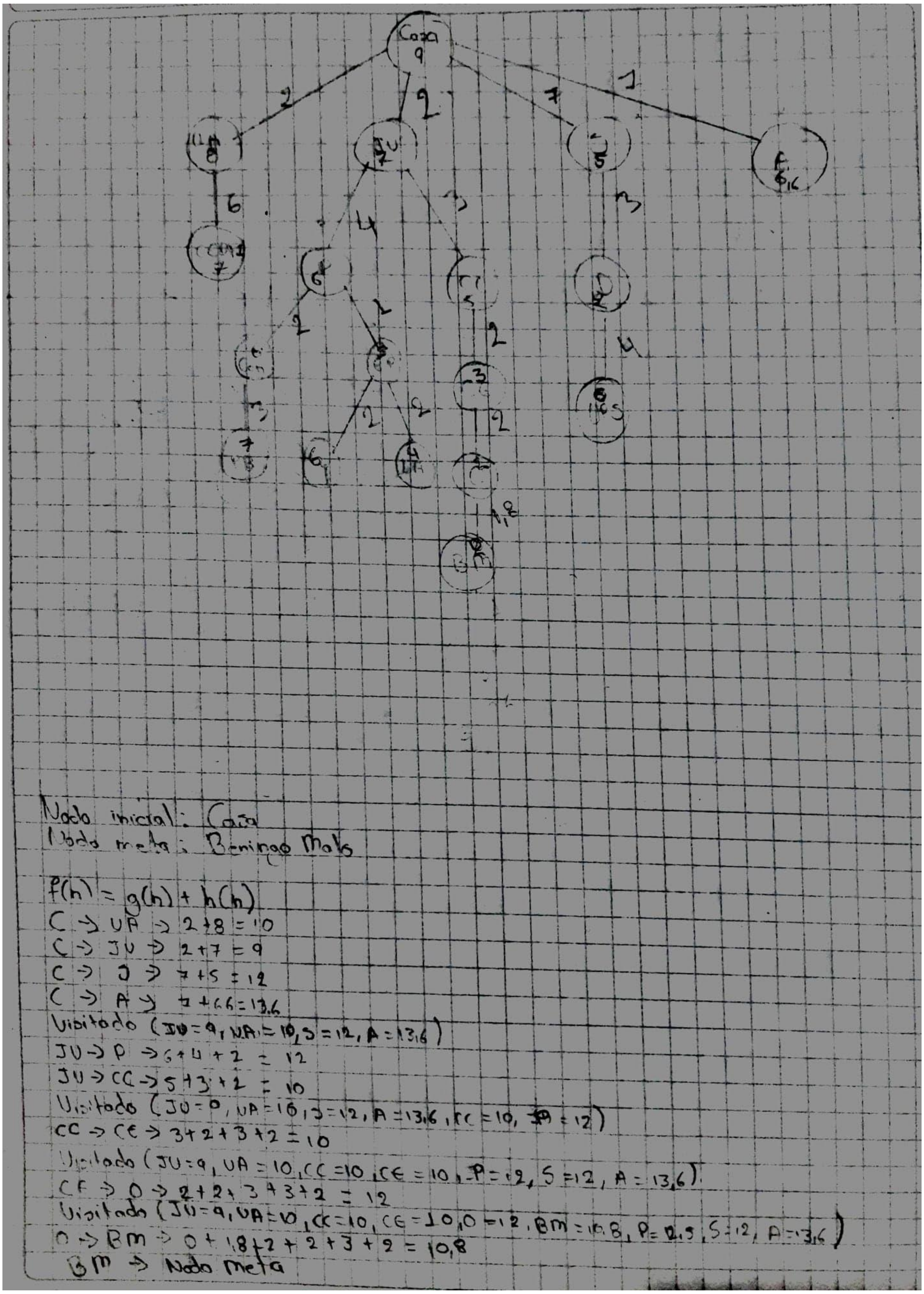
Nombre: Fanny Gutama **Tema:** Metodo de busqueda A*

Busqueda Estrella de colegios de Cuenca



- **Aplicación del metodo A*.**
  Nodo Inicio = Casa
  Nodo Meta = Beningno Malo



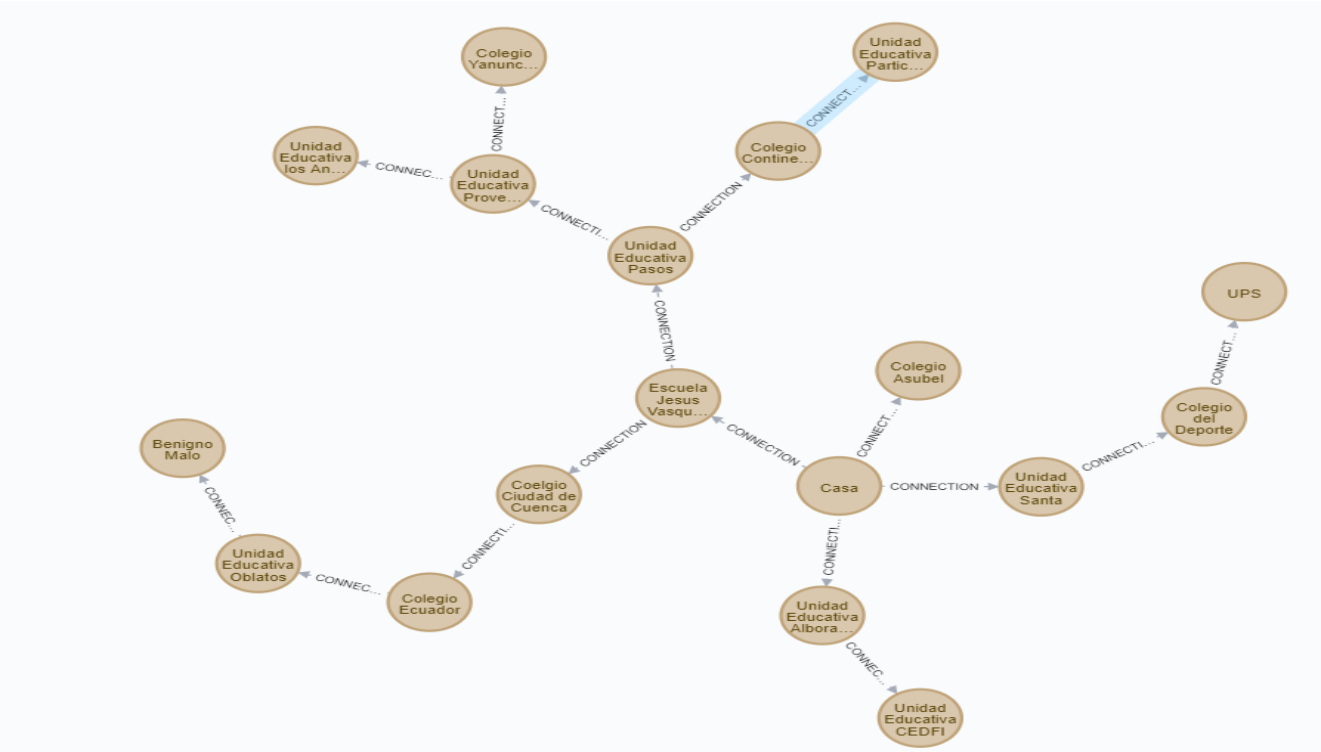
- **Creación de Nodos en NEO4j**

```
CREATE (c1:colegio {name: 'Casa', latitude: -2.862233, longitude: -79.067879}),
    (c2:colegio {name: 'Unidad Educativa Alborada',latitude: -2.862233, longitude: -79.167879}),
    (c3:colegio {name: 'Escuela Jesus Vasquez Ochoa',latitude: -2.876566, longitude: -79.061996}),
    (c4:colegio {name: 'Unidad Educativa Santa Ana',latitude: -2.872502, longitude: -79.037471}),
    (c5:colegio {name: 'Colegio Asubel',latitude: -2.868072, longitude: -79.047755}),
    (c6:colegio {name: 'Unidad Educativa CEDFI',latitude: -2.907694, longitude: -79.056893}),
    (c7:colegio {name: 'Unidad Educativa Pasos',latitude: -2.899558, longitude:-79.049911}),
    (c8:colegio {name: 'Coelgio Ciudad de Cuenca',latitude: -2.889169, longitude: -79.035447}),
    (c9:colegio {name: 'Colegio del Deporte', latitude: -2.881736, longitude: -79.011139}),
    (c10:colegio {name: 'Colegio Continental',latitude:-2.908443, longitude: -79.040258}),
    (c11:colegio {name: 'Unidad Educativa Provenir',latitude: -2.906760, longitude: -79.038340}),
    (c12:colegio {name: 'Colegio Ecuador',latitude: -2.893559, longitude: -79.016539}),
    (c13:colegio {name: 'UPS',latitude: -2.885853, longitude: -78.989428}),
    (c14:colegio {name: 'Unidad Educativa Particular Borja',latitude: -2.921317, longitude: -79.049718}),
    (c15:colegio {name: 'Colegio Yanuncay',latitude: -2.917722, longitude: -79.033162}),
    (c16:colegio {name: 'Unidad Educativa los Andes',latitude: -2.910777, longitude: -79.0239092}),
    (c17:colegio {name: 'Unidad Educativa Oblatos',latitude: -2.901196, longitude: -79.003907}),
    (c18:colegio {name: 'Benigno Malo',latitude: -2.903000, longitude: -79.007562}),
    (c1)-[:CONNECTION {distancia: 2}]->(c2),
    (c1)-[:CONNECTION {distancia: 2}]->(c3),
    (c1)-[:CONNECTION {distancia: 7}]->(c4),
    (c1)-[:CONNECTION {distancia: 7}]->(c5),

    (c2)-[:CONNECTION {distancia: 6}]->(c6),
```

(c3)-[:CONNECTION {distancia: 4}]->(c7),
(c3)-[:CONNECTION {distancia: 3}]->(c8),

(c4)-[:CONNECTION {distancia: 3}]->(c9),
(c7)-[:CONNECTION {distancia: 2}]->(c10),
(c7)-[:CONNECTION {distancia: 1}]->(c11),
(c8)-[:CONNECTION {distancia: 2}]->(c12),
(c9)-[:CONNECTION {distancia: 4}]->(c12),
(c10)-[:CONNECTION {distancia: 3}]->(c14),
(c11)-[:CONNECTION {distancia: 2}]->(c15),
(c11)-[:CONNECTION {distancia: 2}]->(c16),
(c12)-[:CONNECTION {distancia: 2}]->(c17),
(c17)-[:CONNECTION {distancia: 1.8}]->(c18)



- **Aplicación del método en NEO4J**

MATCH (start:colegio {name: "Casa"}), (end:colegio {name: "Benigno Malo"})
CALL gds.alpha.shortestPath.astar.stream({
  nodeQuery: 'MATCH (c:colegio) RETURN id(c) AS id',
  relationshipQuery: 'MATCH (c1:colegio)-[r:CONNECTION]->(c2:colegio) RETURN id(c1) AS source, id(c

```
2) AS target, r.distancia AS distancia',
  startNode: start,
  endNode: end,
  relationshipWeightProperty: 'distancia',
  propertyKeyLat: 'latitude',
  propertyKeyLat: 'longitude'
})
YIELD nodeId, cost
RETURN gds.util.asNode(nodeId).name AS station, cost
```