Pruebas de Ant Colony con algunos parámetros

root@jupyterlab-opt-0-1-h × aco_prueba_minikube.ipynb ●

Code Python 3

imports

[19]:
```
import ant_colony
import tsplib95
import networkx as nx
from ant_colony.aco_tsp import *
#from ant_colony.aco_tsp import create_dic_dist_from_graph
```

step: load_data

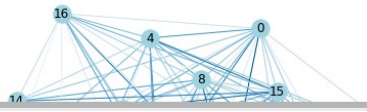
[20]:
```
problem = tsplib95.load('gr17.tsp')
```

step: create_graph *depends on:* ●

[21]:
```
G = problem.get_graph()
# matrix numerica para diccionario de distancias
G_num = nx.to_numpy_matrix(G)
# diccionario de distancias
dic_dists = create_dic_dist_from_graph(G)

# inicializacion de atraccion y feromonas
tau = init_ferom(G)
eta = init_atrac(G,dic_dists)
A = atraccion_nodos(G, tau, eta, alpha=1, beta=5)
```

[22]:
```
plot_graph(G, m_plot='graph')
```



step: entrenamiento_best_route *depends on:* ●

[24]:
```
# antcolony
ruta, dist = ant_colony(G, dic_dists, init=0, ants=3, max_iter=500, verbose=20)
```

```
iter: 1 / 500 - dist: 4671.0
iter: 20 / 500 - dist: 4671.0
iter: 40 / 500 - dist: 4671.0
iter: 60 / 500 - dist: 4671.0
iter: 80 / 500 - dist: 4671.0
iter: 100 / 500 - dist: 4671.0
iter: 120 / 500 - dist: 4671.0
iter: 140 / 500 - dist: 4671.0
iter: 160 / 500 - dist: 4671.0
iter: 180 / 500 - dist: 4671.0
iter: 200 / 500 - dist: 4671.0
iter: 220 / 500 - dist: 4671.0
iter: 240 / 500 - dist: 4671.0
iter: 260 / 500 - dist: 4671.0
iter: 280 / 500 - dist: 4671.0
iter: 300 / 500 - dist: 4671.0
iter: 320 / 500 - dist: 4671.0
iter: 340 / 500 - dist: 4671.0
iter: 360 / 500 - dist: 4671.0
iter: 380 / 500 - dist: 4671.0
iter: 400 / 500 - dist: 4671.0
iter: 420 / 500 - dist: 4671.0
iter: 440 / 500 - dist: 4671.0
iter: 460 / 500 - dist: 4671.0
iter: 480 / 500 - dist: 4671.0
iter: 500 / 500 - dist: 4671.0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Resumen:
        Nro. de hormigas: 3
        Iteraciones: 500
        Distancia: 4671.0
        Nodo inicial: 0
        Ruta: [0, 9, 6, 16, 2, 10, 5, 4, 15, 7, 13, 14, 1, 8, 11, 3, 12, 0]
```

```
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Resumen:
        Nro. de hormigas: 3
        Iteraciones: 500
        Distancia: 4671.0
        Nodo inicial: 0
        Ruta: [0, 9, 6, 16, 2, 10, 5, 4, 15, 7, 13, 14, 1, 8, 11, 3, 12, 0]
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```
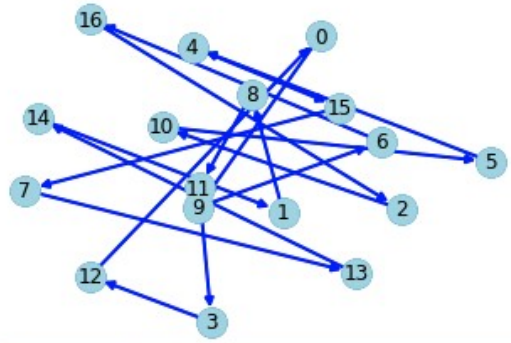



Distancia: 4671.0
Ruta: [0, 9, 6, 16, 2, 10, 5, 4, 15, 7, 13, 14, 1, 8, 11, 3, 12, 0]

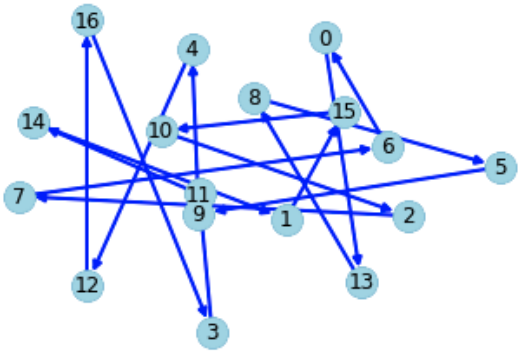
Segunda prueba con 10 hormigas y 400 iteraciones

step: entrenamiento_otros_parametros

[25]:
```
# antcolony
ruta, dist = ant_colony(G, dic_dists, init=0, ants=10, max_iter=400, verbose=20)
```

```
iter: 1 / 400 - dist: 4681.0
iter: 20 / 400 - dist: 4681.0
iter: 40 / 400 - dist: 4681.0
iter: 60 / 400 - dist: 4681.0
iter: 80 / 400 - dist: 4681.0
iter: 100 / 400 - dist: 4681.0
iter: 120 / 400 - dist: 4681.0
iter: 140 / 400 - dist: 4681.0
iter: 160 / 400 - dist: 4681.0
iter: 180 / 400 - dist: 4681.0
iter: 200 / 400 - dist: 4681.0
iter: 220 / 400 - dist: 4681.0
iter: 240 / 400 - dist: 4681.0
iter: 260 / 400 - dist: 4681.0
iter: 280 / 400 - dist: 4681.0
iter: 300 / 400 - dist: 4681.0
iter: 320 / 400 - dist: 4681.0
iter: 340 / 400 - dist: 4681.0
iter: 360 / 400 - dist: 4681.0
iter: 380 / 400 - dist: 4681.0
iter: 400 / 400 - dist: 4681.0
```

```
------------------------------
Resumen:
        Nro. de hormigas: 10
        Iteraciones: 400
        Distancia: 4681.0
        Nodo inicial: 0
        Ruta: [0, 13, 8, 5, 9, 4, 12, 16, 3, 11, 14, 1, 15, 10, 2, 7, 6, 0]
------------------------------
```



Distancia: 4681.0
Ruta: [0, 13, 8, 5, 9, 4, 12, 16, 3, 11, 14, 1, 15, 10, 2, 7, 6, 0]