

Floyd

Algorisme de Floyd

- λ_{ij} representa el cost de l'aresta (v_i, v_j) .
Si no existeix llavors $\lambda_{ij} = \infty$
- $\lambda_{ii} = 0$
- λ_{ij}^m representa el cost del camí de m vèrtexs entre v_i i v_j ; v_1, v_2, \dots, v_m amb cap v_t on $t > m$

Floyd

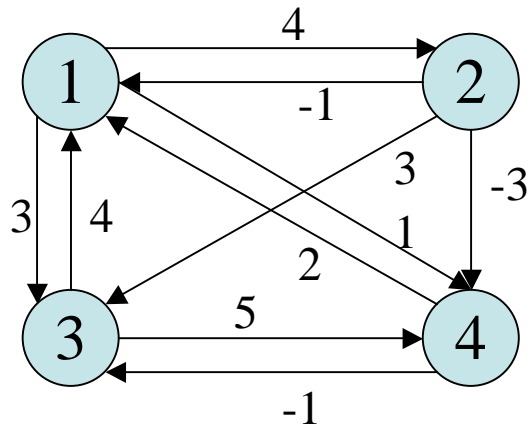
1) $m := 1$

2) Per tota parella v_i, v_j calculem

$$\lambda_{ij}^m := \min \{ \lambda_{ij}^{m-1}, \lambda_{im}^{m-1} + \lambda_{mj}^{m-1} \}$$

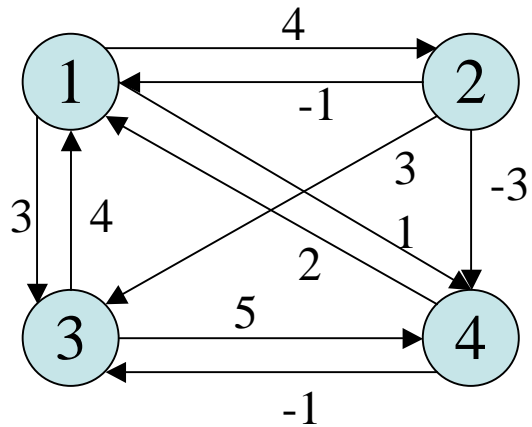
3) Si $m = n$ acabem

Si no anem a (2)



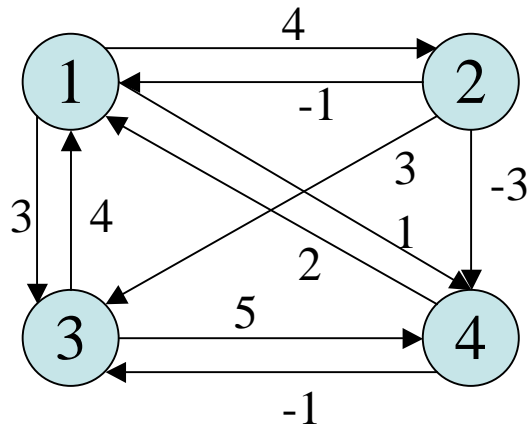
Inicialitzem amb el cost de l'aresta entre cada vèrtex

| | λ^0 | λ^1 | λ^2 | λ^3 | λ^4 |
|-----------|-------------|-------------|-------------|-------------|-------------|
| 11 | 0 | | | | |
| 12 | 4 | | | | |
| 13 | 3 | | | | |
| 14 | 2 | | | | |
| 21 | -1 | | | | |
| 22 | 0 | | | | |
| 23 | 3 | | | | |
| 24 | -3 | | | | |
| 31 | 4 | | | | |
| 32 | ∞ | | | | |
| 33 | 0 | | | | |
| 34 | 5 | | | | |
| 41 | 1 | | | | |
| 42 | ∞ | | | | |
| 43 | -1 | | | | |
| 44 | 0 | | | | |



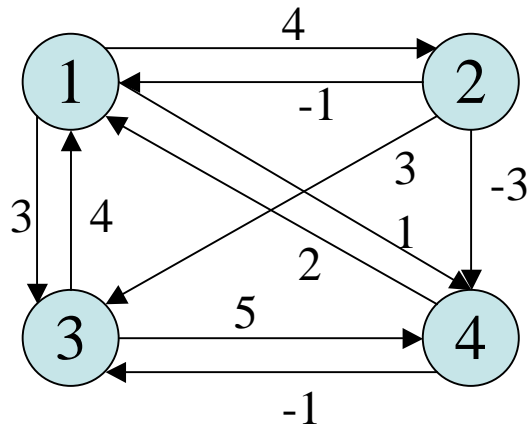
Per a la parella 2,3 comparem el valor del pas anterior (3) amb la suma de $3 + (-1) = 2$

| | λ^0 | λ^1 | λ^2 | λ^3 | λ^4 |
|----|-------------|-------------|-------------|-------------|-------------|
| 11 | 0 | 0 | | | |
| 12 | 4 | 4 | | | |
| 13 | 3 | 3 | | | |
| 14 | 2 | 2 | | | |
| 21 | -1 | -1 | | | |
| 22 | 0 | 0 | | | |
| 23 | 3 | 2 | | | |
| 24 | -3 | -3 | | | |
| 31 | 4 | 4 | | | |
| 32 | ∞ | 8 | | | |
| 33 | 0 | 0 | | | |
| 34 | 5 | 5 | | | |
| 41 | 1 | 1 | | | |
| 42 | ∞ | 5 | | | |
| 43 | -1 | -1 | | | |
| 44 | 0 | 0 | | | |



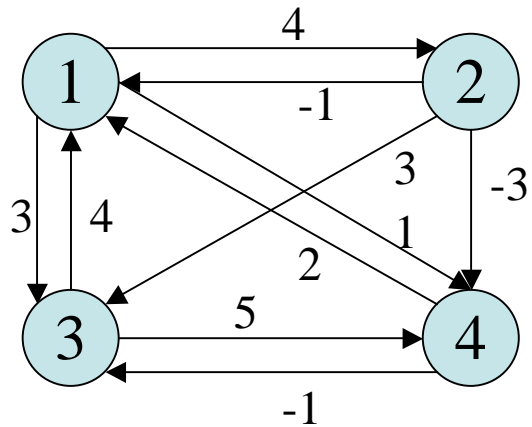
Per a la parella 1,4 comparem el valor del pas anterior (2) amb la suma de $4 + (-3) = 1$

| | λ^0 | λ^1 | λ^2 | λ^3 | λ^4 |
|-----------|-------------|-------------|-------------|-------------|-------------|
| 11 | 0 | 0 | 0 | | |
| 12 | 4 | 4 | 4 | | |
| 13 | 3 | 3 | 3 | | |
| 14 | 2 | 2 | 1 | | |
| 21 | -1 | -1 | -1 | | |
| 22 | 0 | 0 | 0 | | |
| 23 | 3 | 2 | 2 | | |
| 24 | -3 | -3 | -3 | | |
| 31 | 4 | 4 | 4 | | |
| 32 | ∞ | 8 | 8 | | |
| 33 | 0 | 0 | 0 | | |
| 34 | 5 | 5 | 5 | | |
| 41 | 1 | 1 | 1 | | |
| 42 | ∞ | 5 | 5 | | |
| 43 | -1 | -1 | -1 | | |
| 44 | 0 | 0 | 0 | | |



Per a la parella 2,1 comparem el valor del pas anterior (-1) amb la suma de $2+4=6$

| | λ^0 | λ^1 | λ^2 | λ^3 | λ^4 |
|-----------|-------------|-------------|-------------|-------------|-------------|
| 11 | 0 | 0 | 0 | 0 | |
| 12 | 4 | 4 | 4 | 4 | |
| 13 | 3 | 3 | 3 | 3 | |
| 14 | 2 | 2 | 1 | 1 | |
| 21 | -1 | -1 | -1 | -1 | |
| 22 | 0 | 0 | 0 | 0 | |
| 23 | 3 | 2 | 2 | 2 | |
| 24 | -3 | -3 | -3 | -3 | |
| 31 | 4 | 4 | 4 | 4 | |
| 32 | ∞ | 8 | 8 | 8 | |
| 33 | 0 | 0 | 0 | 0 | |
| 34 | 5 | 5 | 5 | 5 | |
| 41 | 1 | 1 | 1 | 1 | |
| 42 | ∞ | 5 | 5 | 5 | |
| 43 | -1 | -1 | -1 | -1 | |
| 44 | 0 | 0 | 0 | 0 | |



Per a la parella 1,3 comparem el valor del pas anterior (3) amb la suma de $1 + (-1) = 0$

| | λ^0 | λ^1 | λ^2 | λ^3 | λ^4 |
|-----------|-------------|-------------|-------------|-------------|-------------|
| 11 | 0 | 0 | 0 | 0 | 0 |
| 12 | 4 | 4 | 4 | 4 | 4 |
| 13 | 3 | 3 | 3 | 3 | 0 |
| 14 | 2 | 2 | 1 | 1 | 1 |
| 21 | -1 | -1 | -1 | -1 | -2 |
| 22 | 0 | 0 | 0 | 0 | 0 |
| 23 | 3 | 2 | 2 | 2 | -4 |
| 24 | -3 | -3 | -3 | -3 | -3 |
| 31 | 4 | 4 | 4 | 4 | 4 |
| 32 | ∞ | 8 | 8 | 8 | 8 |
| 33 | 0 | 0 | 0 | 0 | 0 |
| 34 | 5 | 5 | 5 | 5 | 5 |
| 41 | 1 | 1 | 1 | 1 | 1 |
| 42 | ∞ | 5 | 5 | 5 | 5 |
| 43 | -1 | -1 | -1 | -1 | -1 |
| 44 | 0 | 0 | 0 | 0 | 0 |