Todos os códigos no github:

https://github.com/Draylon/grafo_teg/releases/tag/new_21_3

1)

arquivos: Graph.py, main.py

função: edmondskarp

Valor do fluxo no grafo inicialmente: 15.

O fluxo apresentado não é máximo.

O fluxo máximo calculado é de 21.

Edmonds-Karp: 6 iterações

Dinitz: 34 iterações

Corte mínimo:

{4/4, 12/12, 5/5, 8/8}

Outros cortes (não necessariamente mínimos):
[[(v3,t),(v5,t),(v2,t)],

[(S,v1),(S,v2),(S,v3)],

[(S,v1),(v3,t),(v2,t)],

[(S,v1),(S,v2),(v3,v5),(v5,t),

]

Processo de iteração dos grafos residuais:

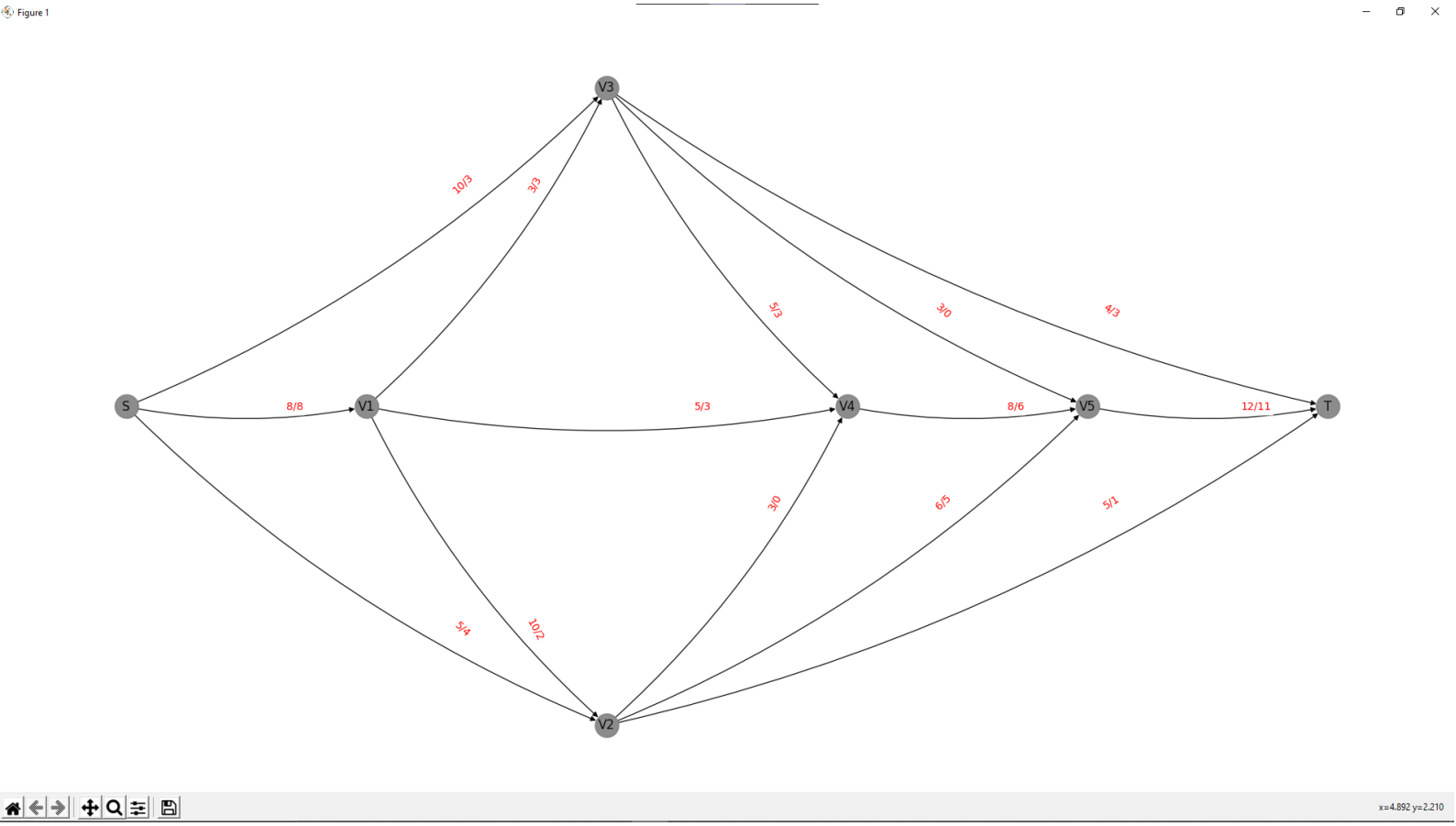


Figure 1
V3
10/3
3/3
5/3
3/0
4/3
S
8/8
V1
5/3
V4
8/6
V5
12/11
T
3/0
6/5
5/1
5/4
10/2
V2
x=4.892 y=2.210

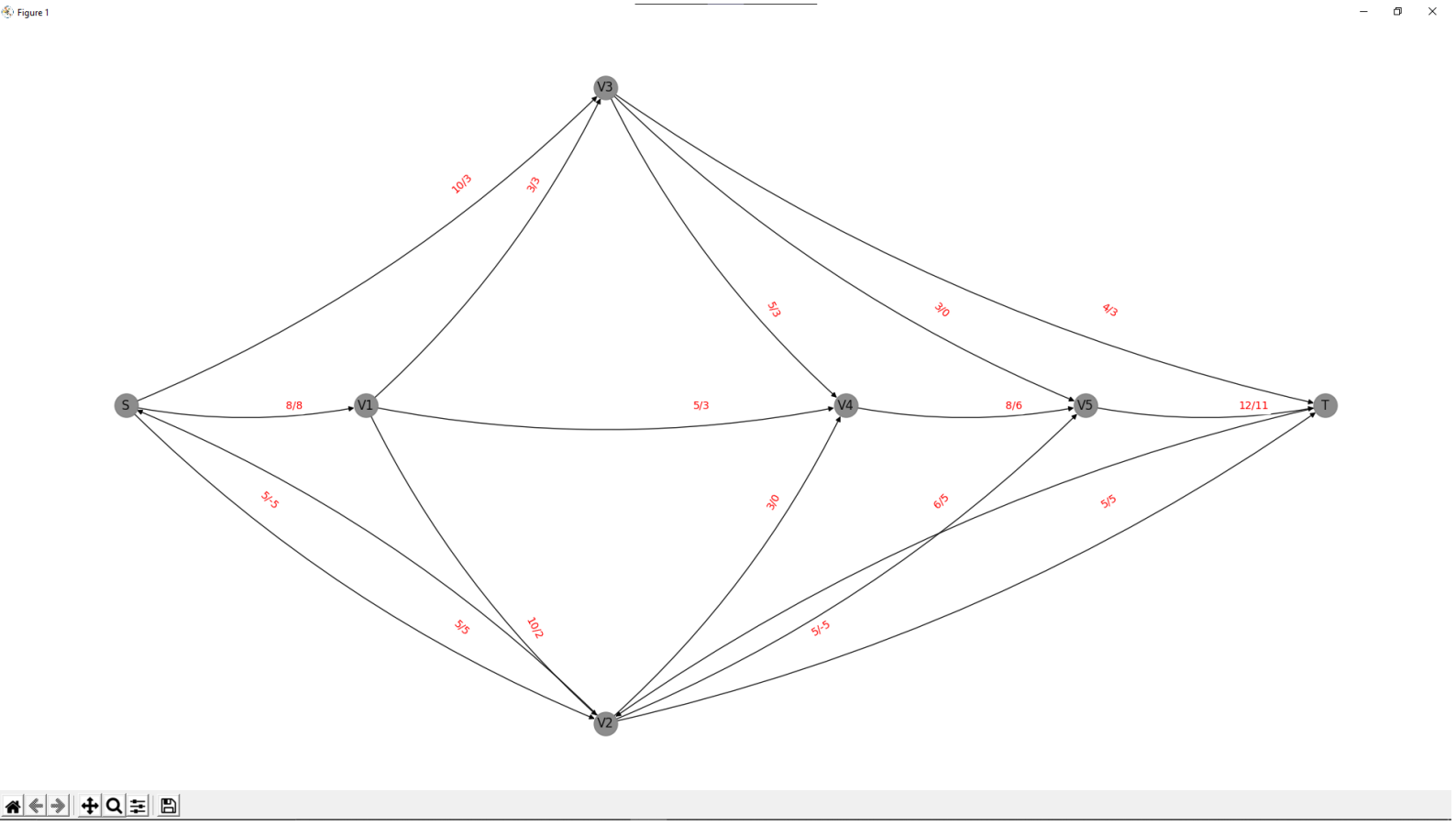


Figure 1
V3
10/3
3/3
5/3
3/0
4/3
S
8/8
V1
5/3
V4
8/6
V5
12/11
T
5/5
3/0
6/5
5/5
5/5
10/2
5/5
V2

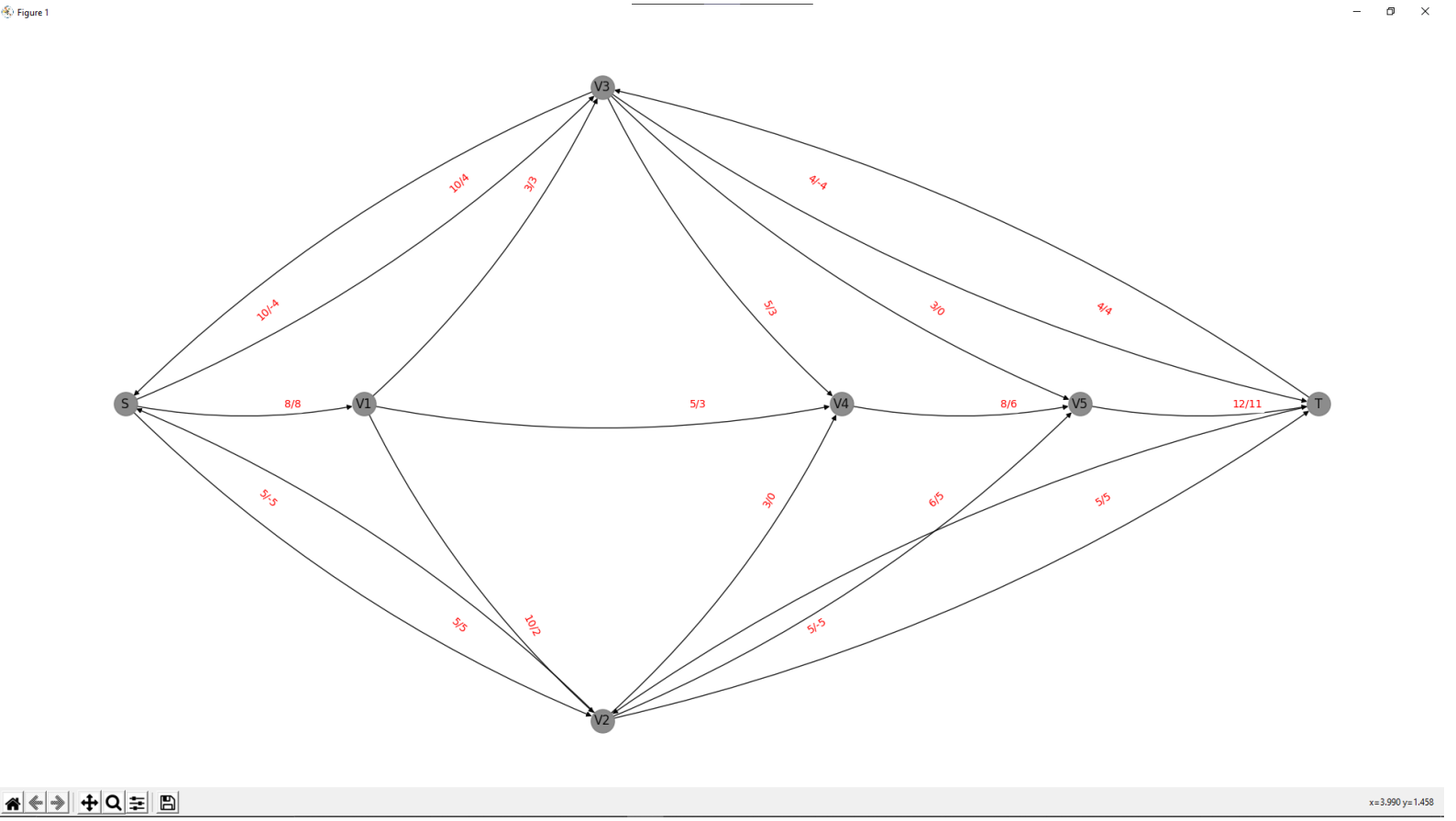


Figure 1
V3
10/4
3/3
4/-4
10/-4
5/3
3/0
4/4
S
8/8
V1
5/3
V4
8/6
V5
12/11
T
5/-5
3/0
6/5
5/5
5/5
10/2
5/-5
V2
x=3.990 y=1.458

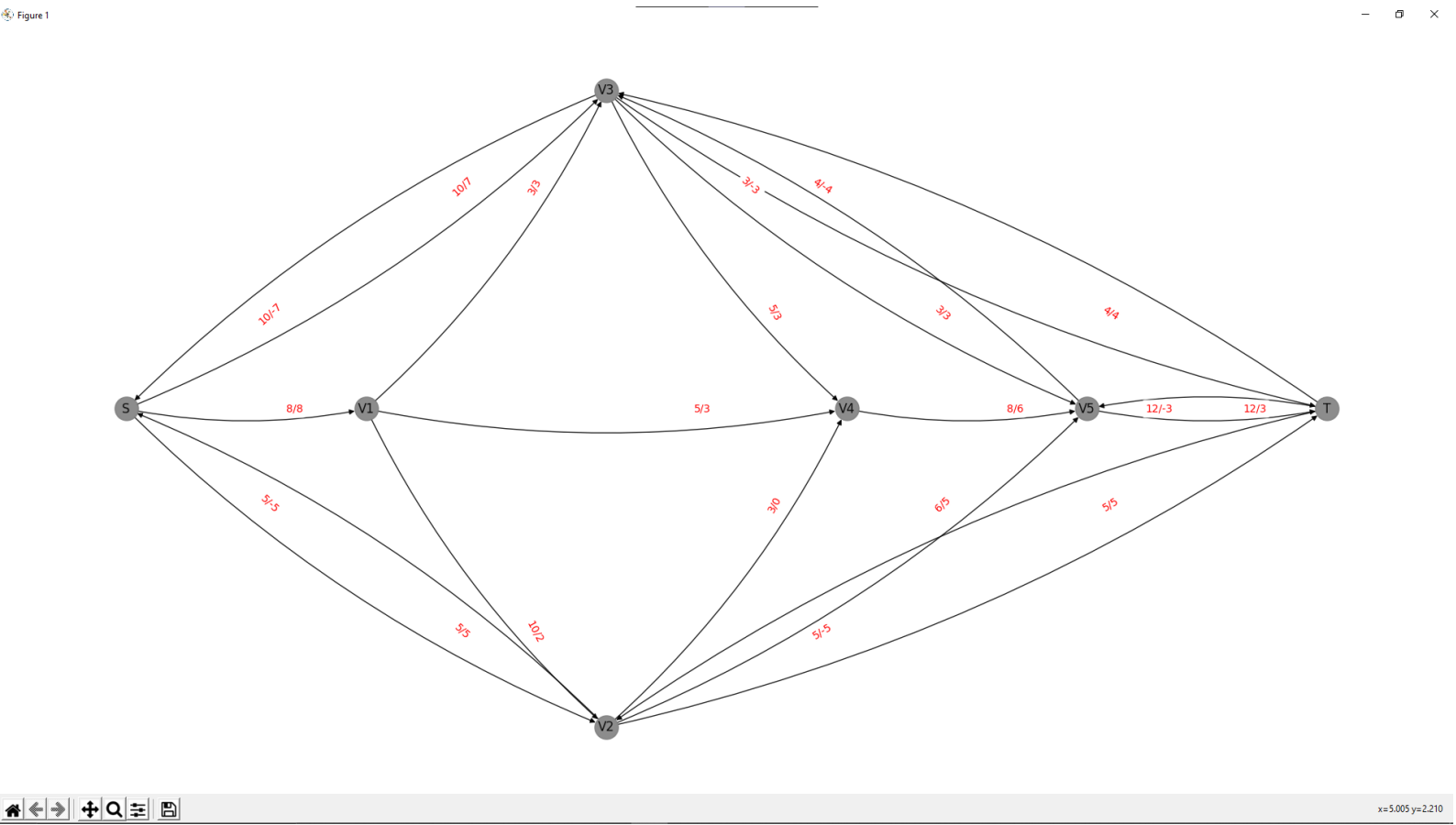


Figure 1
V3
10/7
3/3
3/-3
4/-4
10/-7
5/3
3/3
4/4
S
8/8
V1
5/3
V4
8/6
V5
12/-3
12/3
T
5/-5
3/0
6/5
5/5
5/5
10/2
5/-5
V2
x=5.005 y=2.210

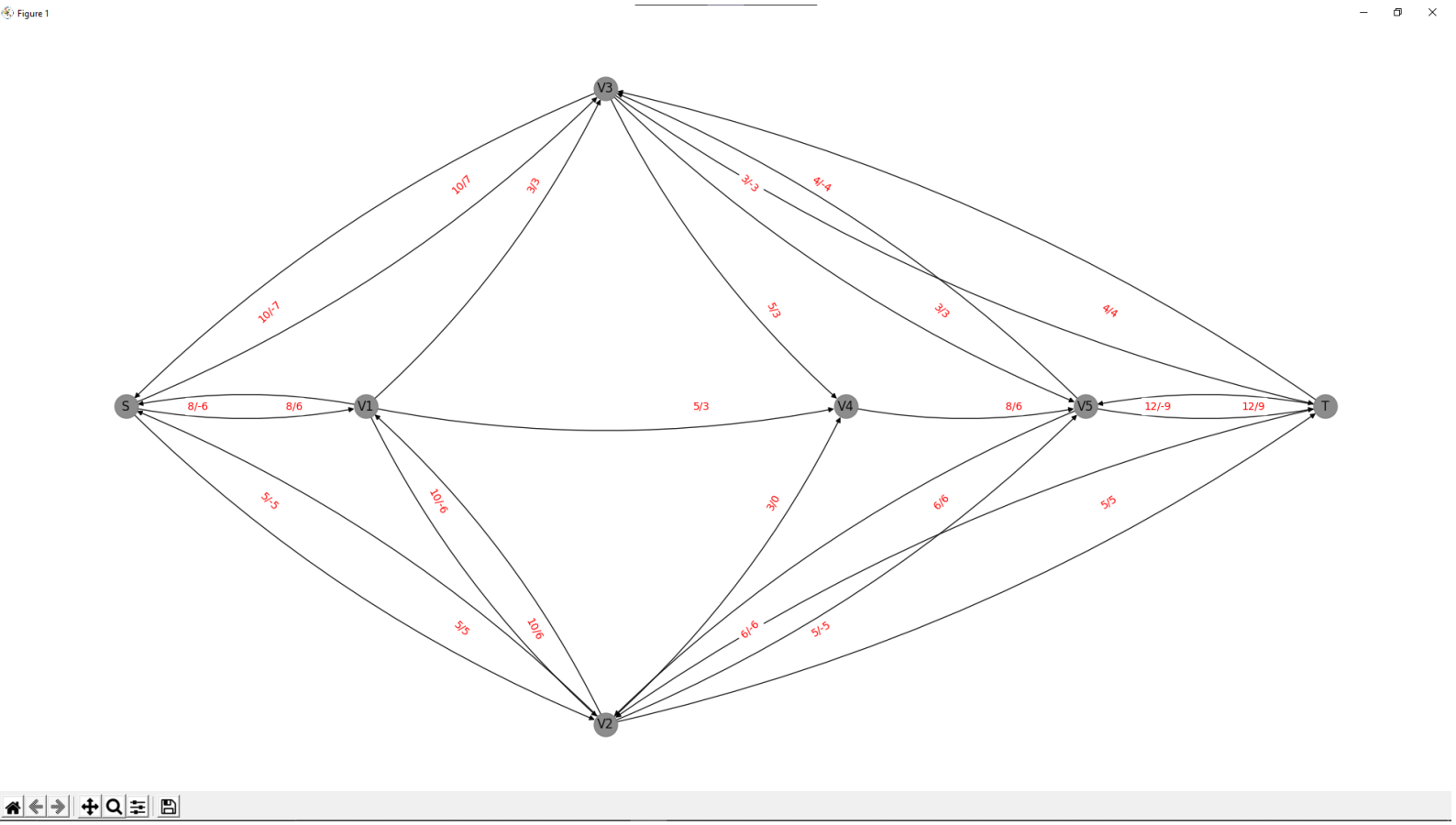


Figure 1
V3
10/7
3/3
3/-3
4/4
10/-7
5/3
3/3
4/4
S
8/-6
8/6
V1
5/3
V4
8/6
V5
12/-9
12/9
T
5/-5
10/-6
3/0
6/6
5/5
5/5
10/6
6/-6
5/-5
V2

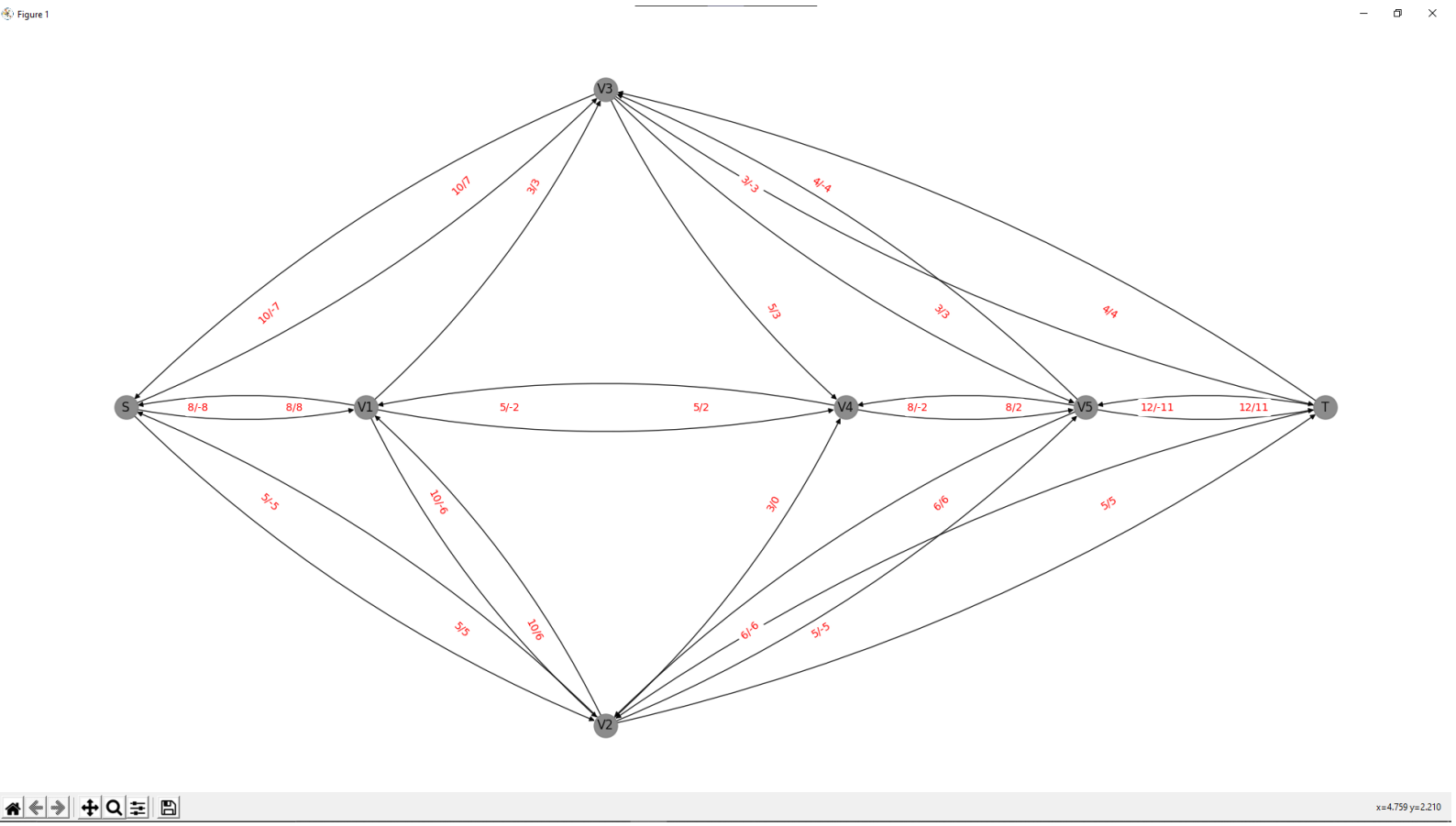
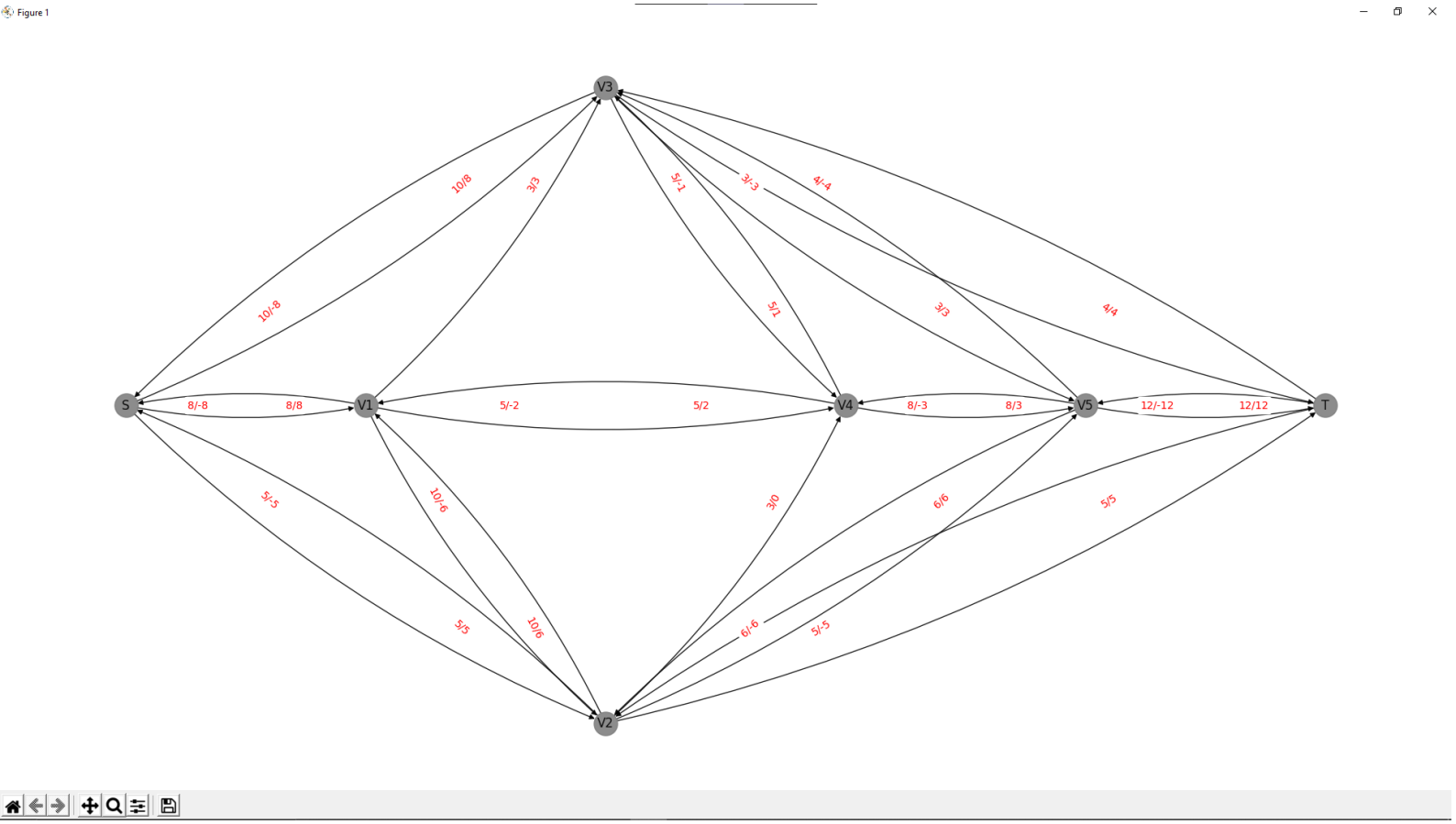
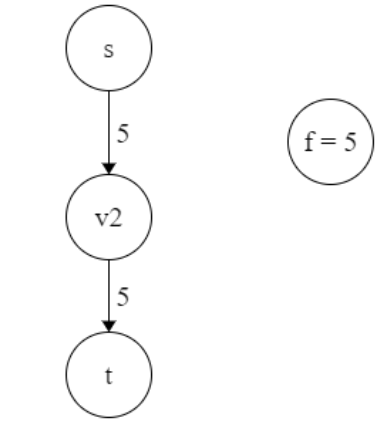


Figure 1
V3
10/7
3/3
3/-3
4/4
10/-7
5/3
3/3
4/4
S
8/-8
8/8
V1
5/-2
5/2
V4
8/-2
8/2
V5
12/-11
12/11
T
5/-5
10/-6
3/0
6/6
5/5
5/5
10/6
6/-6
5/-5
V2
x=4.759 y=2.210

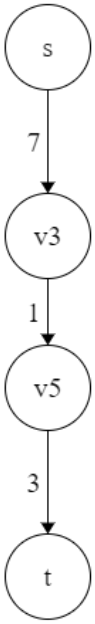


Grafos residuais:

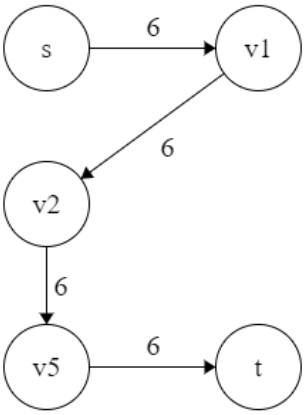


f = 5

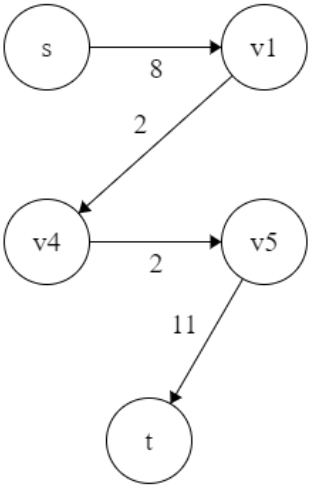
f = 4



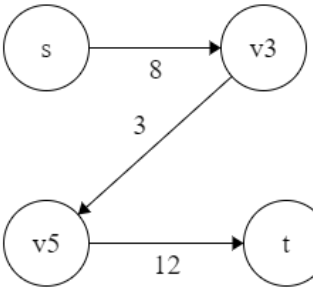
f = 1



f = 6



f = 2



f = 3

2)

Grafo =

[

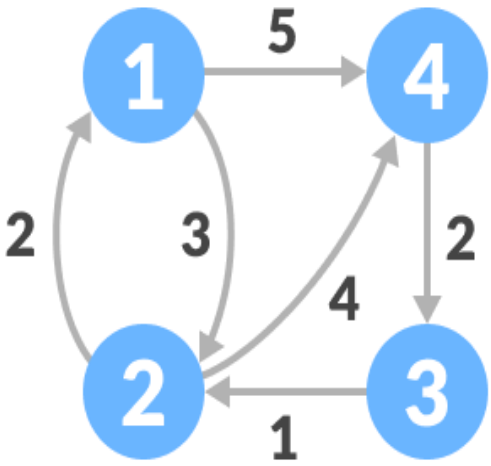
[0, 3, INF, 5],

[2, 0, INF, 4],

[INF, 1, 0, INF],

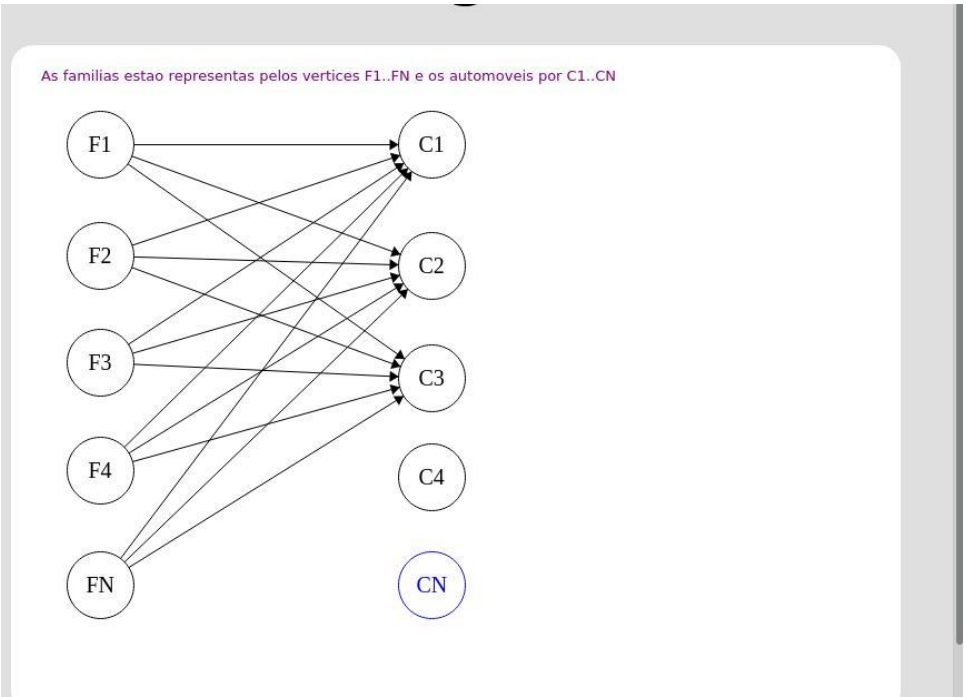
[INF, INF, 2, 0]

]

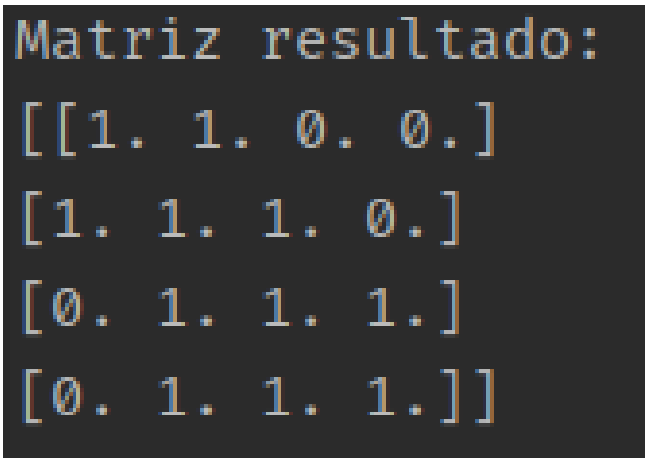


3)

Esquema para demonstrar o funcionamento do grafo bipartido(bicoloring)



Atráves do algoritmo podemos montar uma matriz onde as linhas são as familias e cada coluna representa um carro.



famílias = [2, 3, 3, 9]
veiculos = [2, 7, 3, 4]

Como podemos observar, neste caso faltará lugares e a familia resultante será = [0, 0, 0, 6] , ou seja faltara 6 pessoas da familia 4.