

02 - Algoritmos

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Triangulação

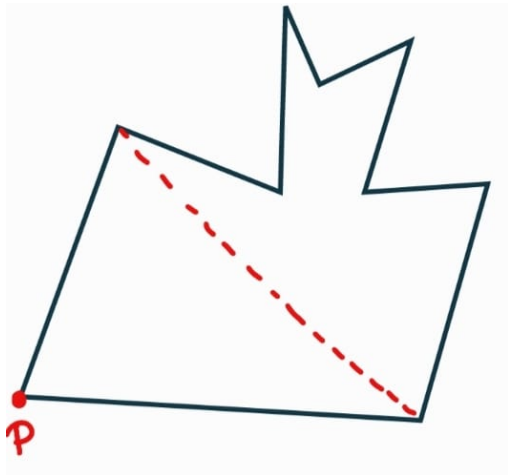
Problema

Dado um polígono, listar triângulos de alguma triangulação.

Triangulação

Problema

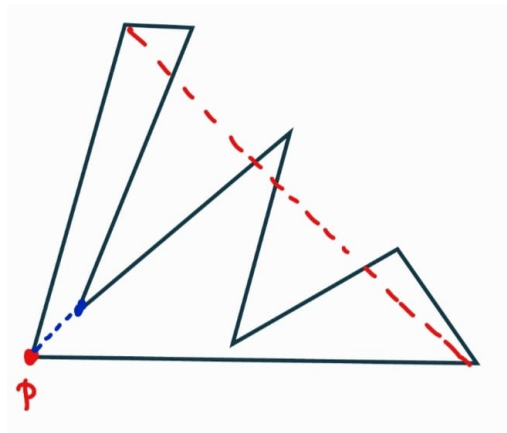
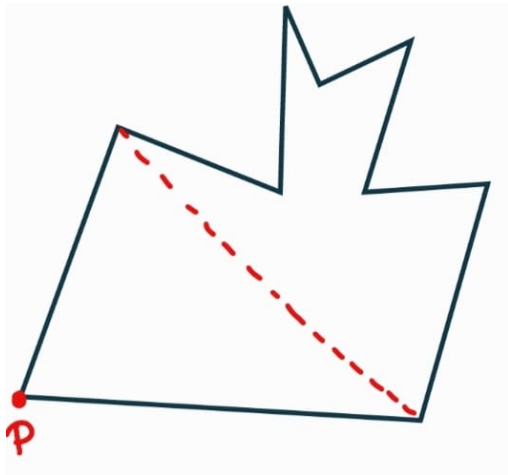
Dado um polígono, listar triângulos de alguma triangulação.



Triangulação

Problema

Dado um polígono, listar triângulos de alguma triangulação.



Exemplos Utilizados

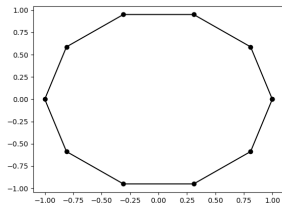


Figura: Polígono Regular

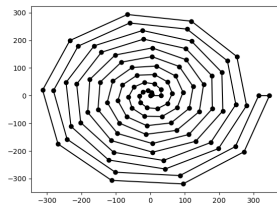


Figura: Espiral

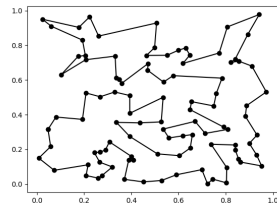
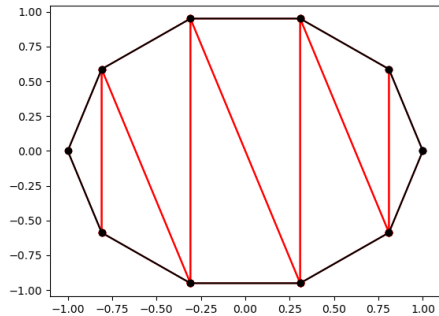
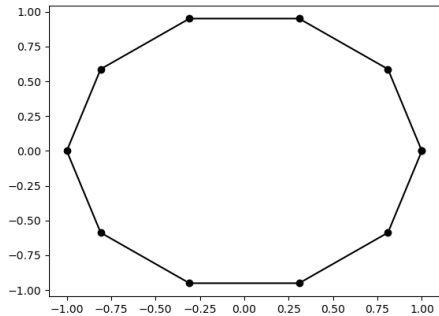
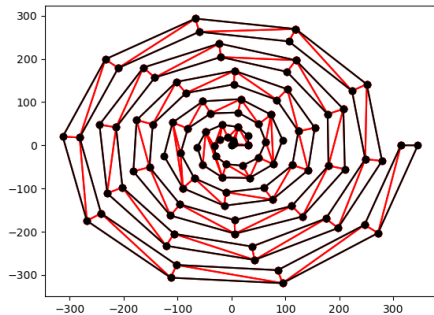
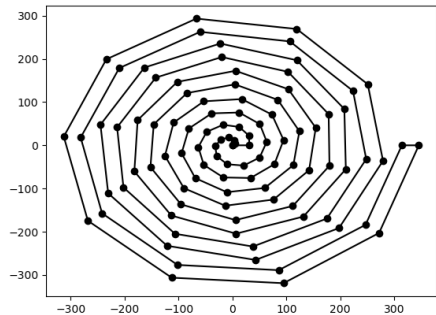


Figura: Caixeiro Viajante

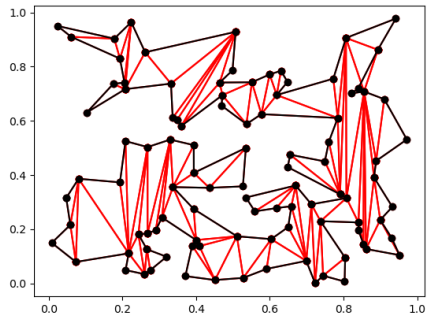
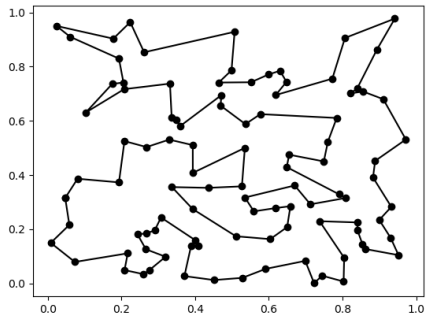
Resultados triangulação



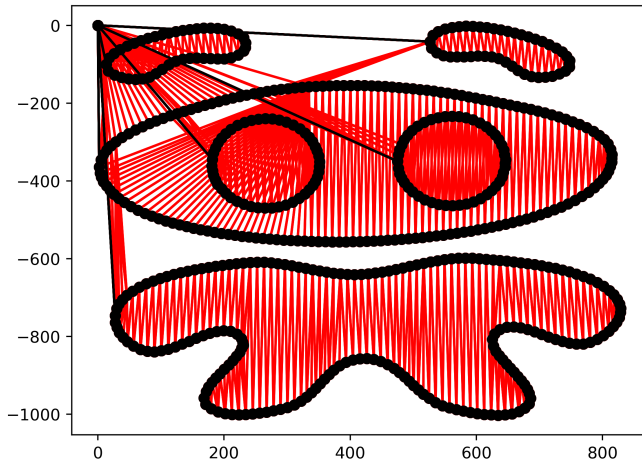
Resultados triangulação



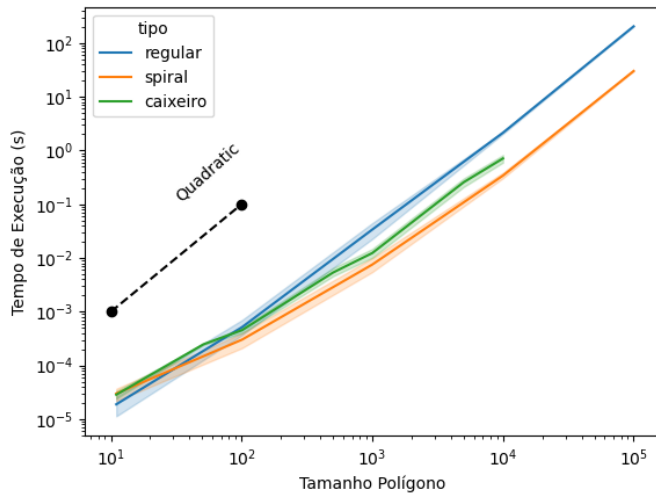
Resultados triangulação



Resultados triangulação - Polígono não-simples



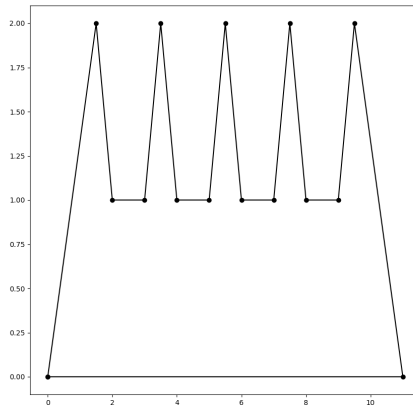
Performance



Linha pontilhada representa uma função quadrática.

Câmeras na Galeria de Arte

- Posicionar câmeras em uma galeria de arte de forma a cobrir toda a região interior.

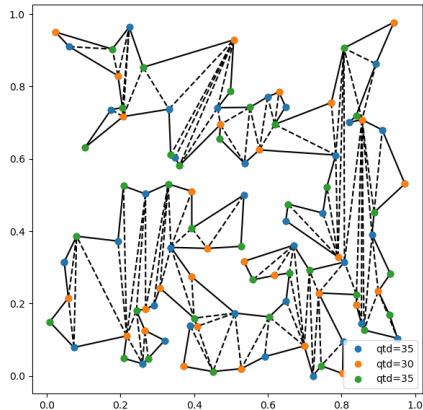
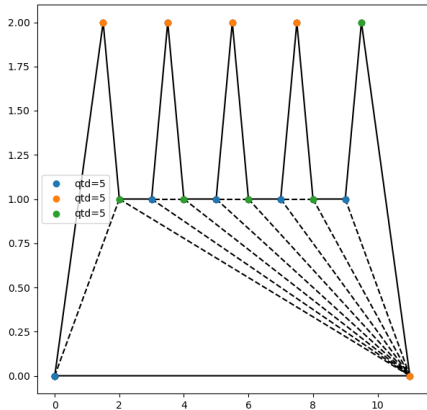


Algoritmo de Coloração

- ▶ Kooshesh–Moret (1992),
Three-coloring the vertices of a
triangulated simple polygon

```
Color( $p_0$ )  $\leftarrow$  1  
Color( $p_1$ )  $\leftarrow$  2  
for  $i = 1$  to  $n - 1$  do  
  if odd(deg( $p_i$ ))  
    then Color( $p_{i+1}$ )  $\leftarrow$  Color( $p_{i-1}$ )  
    else Color( $p_{i+1}$ )  $\leftarrow$  6 - Color( $p_{i-1}$ ) - Color( $p_i$ )  
endfor.
```

Algoritmo de Coloração



Obrigado!