

Modify function

# Before

## In definition3 only use one segment

```
In [19]: def d_curve(segment, trajectory): #segment is array have points
          d_v = []
          d_p = []

          for i in trajectory:
              d_v.append(np.min(ds.distance_line_point(segment, i))) #ca

          for j in segment:
              d_p.append(np.min(ds.distance_line_point(trajectory, j))) #

          max_d_p = np.max(d_p)
          ...

          This step processed in definition3 but give same result with out
          it calculates max d(p,t)
          ...

          d_curve = max(max(d_v,d_p)) #max{d(v, s), max d(p, t)}
          return d_curve
```

# After

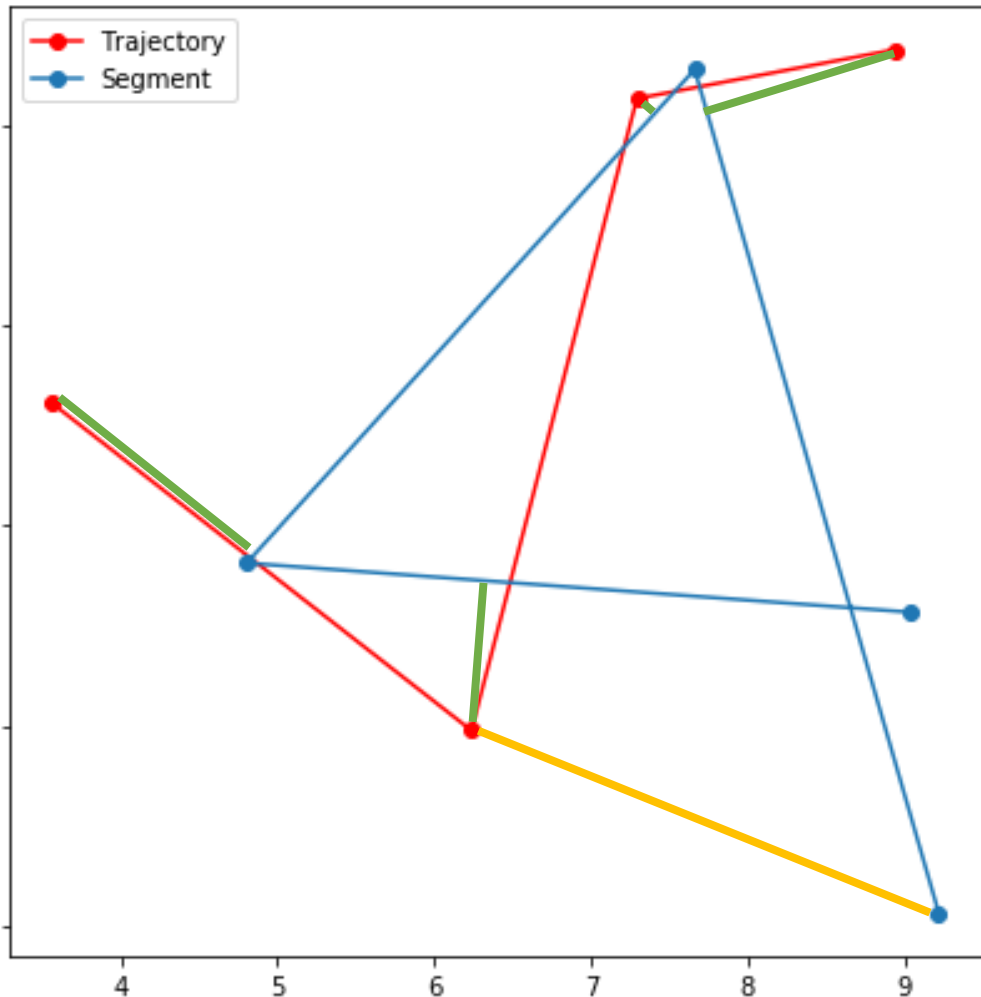
Insert index parameter

```
In [1]: def d_curve(trajectory, i segment):  
    d_p = []  
  
    d_v = ds.distance_line_point(segment, trajectory[i])  
  
    for k in segment:  
        d_p.append(ds.distance_line_point(trajectory, k))  
  
    max_d_p = np.max(d_p)  
  
    d_curve = np.max(d_v, max_d_p)  
    return d_curve
```

Use max function only one time.

$$\text{Max } d_p > d_v$$

$d_{\text{curve}}$  는 index와 무관하다.



```
In [70]: d1 = ds.d_curve(t, 0, s)
          d2 = ds.d_curve(t, 1, s)
          d3 = ds.d_curve(t, 2, s)
          d4 = ds.d_curve(t, 3, s)
```

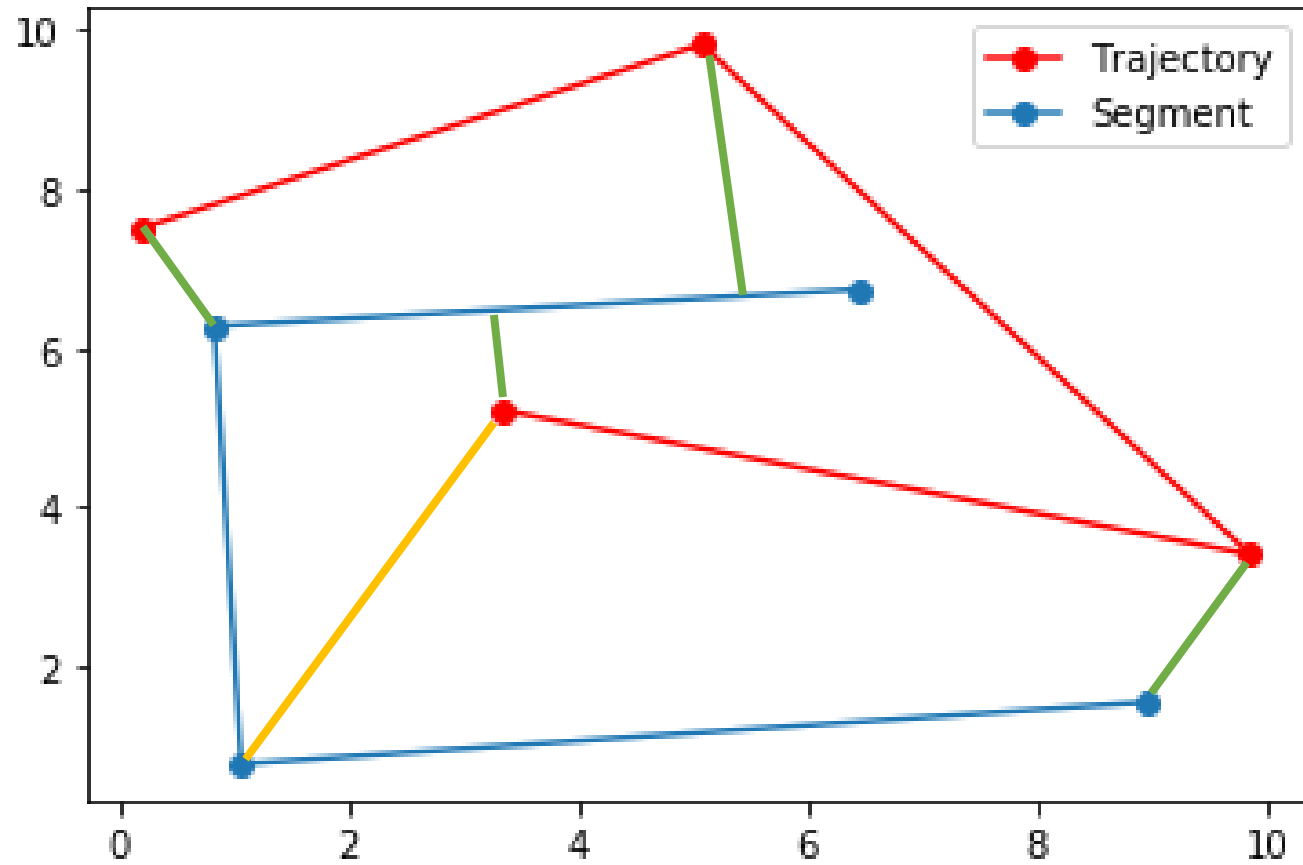
```
d1, d2, d3, d4
```

```
Out [70]: (3.4930647863931323,
           3.4930647863931323,
           3.4930647863931323,
           3.4930647863931323)
```

```
In [146]: d1 = ds.d_curve(t,0,s)
          d2 = ds.d_curve(t,1,s)
          d3 = ds.d_curve(t,2,s)
          d4 = ds.d_curve(t,3,s)

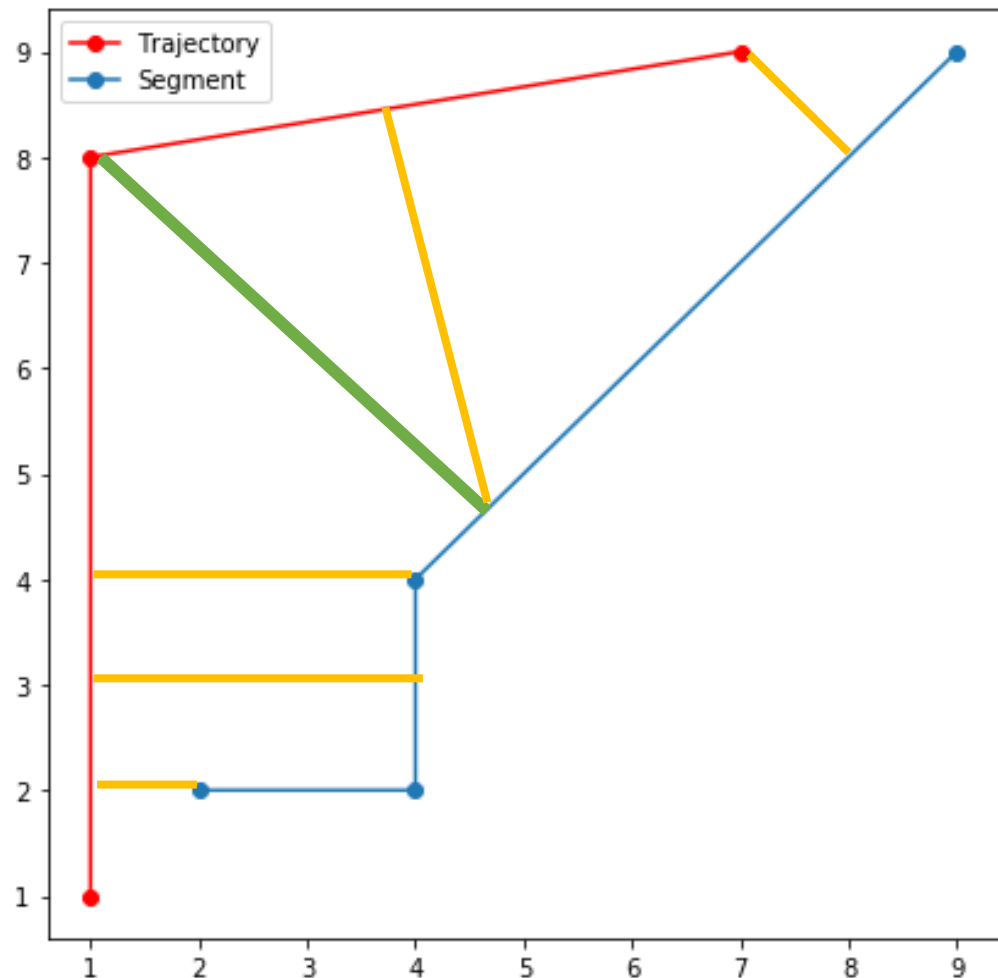
          d1, d2, d3, d4
```

```
Out [146]: (5.000138276758201, 5.000138276758201, 5.000138276758201, 5.000138276758201)
```



$$\text{Max } d_p < d_v$$

$d_{\text{curve}}$  는 index의 값에 따라 변화한다.



```
In [160]: d1 = ds.d_curve(t,0,s)
          d2 = ds.d_curve(t,1,s)
          d3 = ds.d_curve(t,2,s)

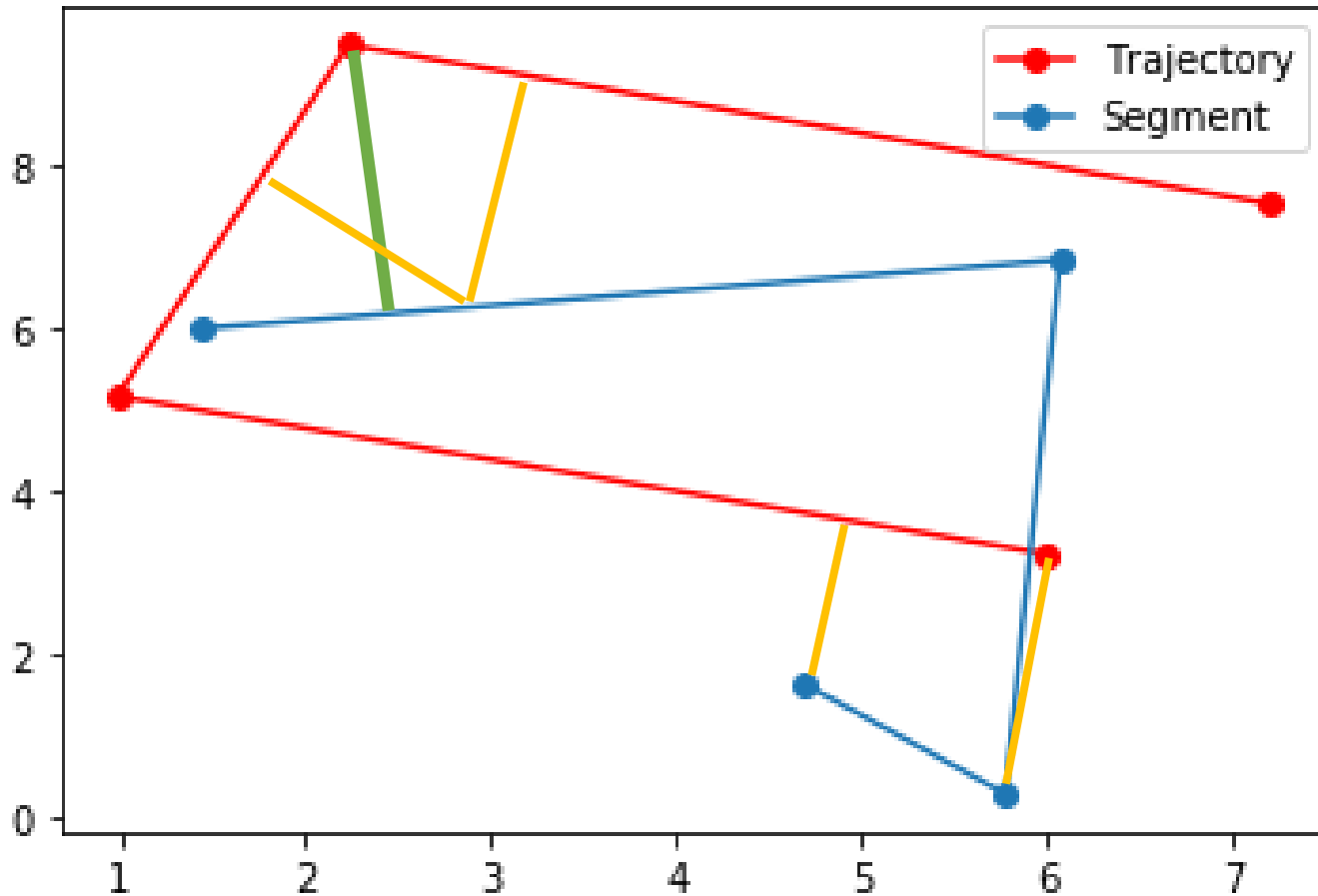
          d1, d2, d3
```

```
Out [160]: (3.0, 4.949747468305833, 3.0)
```

```
In [171]: d1 = ds.d_curve(t,0,s)
          d2 = ds.d_curve(t,1,s)
          d3 = ds.d_curve(t,2,s)
          d4 = ds.d_curve(t,3,s)
```

```
d1, d2, d3, d4
```

```
Out [171]: (2.946015045189419, 3.2806707522594127, 2.946015045189419, 2.946015045189419)
```



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To do

---



# Make candidate set

1<sup>st</sup>

Removing segment  
do not require  
calculations by  
distance

(nodes must be  
with in 1000meters  
of point.)

2<sup>nd</sup>

Make candidate by  
comparison with  
 $d_{max}$  and  $d_{curve}$

(candidate's  $d_{curve}$   
must smaller than  
 $d_{max}$ )