

python 绘图这里使用 `matplotlib`

需要添加引用

```
import matplotlib.pyplot as plt
from matplotlib.legend_handler import HandlerLineCollection, HandlerTuple
from matplotlib.lines import Line2D
from matplotlib.pyplot import MultipleLocator
```

设置画布

```
fig, ax = plt.subplots(1,1,figsize=(20,10))
```

设置x、y 序列 和 图例

```
x_serie=['2021-02-20 16:37:49.584', '2021-02-20 16:37:50.585', \
         '2021-02-20 16:37:51.585', '2021-02-20 16:37:52.595', \
         '2021-02-20 16:37:53.599', '2021-02-20 16:37:54.635', \
         '2021-02-20 16:37:55.667']

values=[82.338, 2.364, 89.038, 68.967, 17.686, 86.758, 46.52]

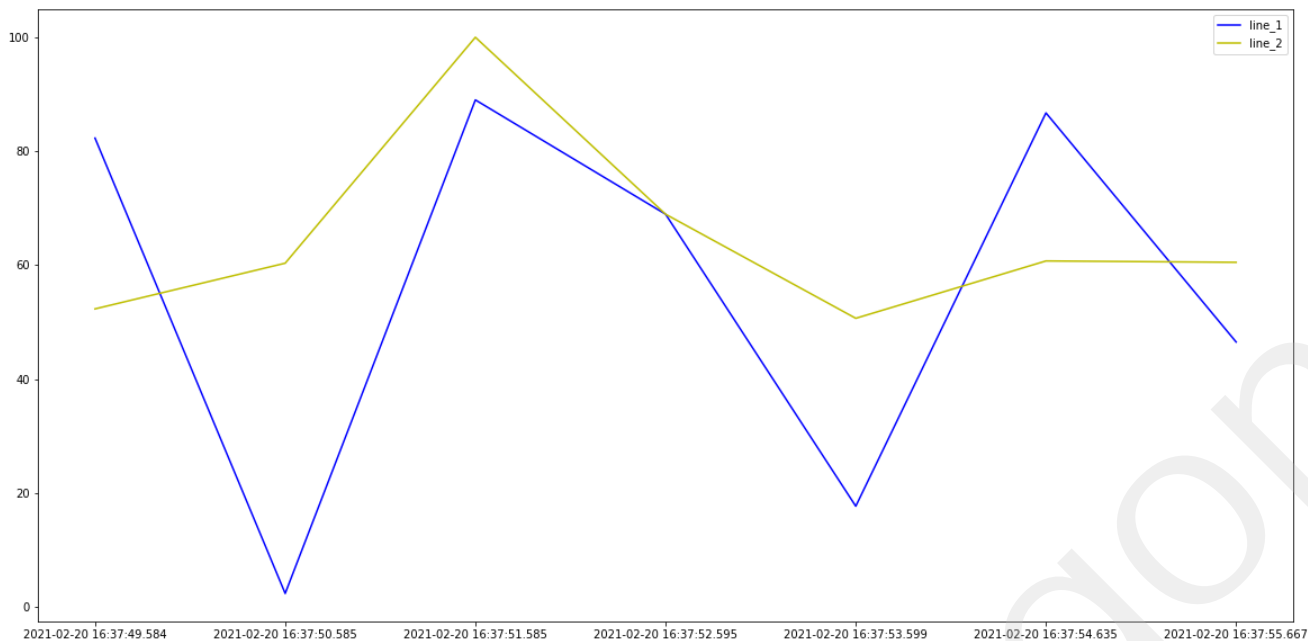
l1,=ax.plot(x_serie,values,'b',label='x_1')
ax.legend((l1,l2),('line_1','line_2'),loc='best')
```

横轴数据太过于密集,设置下横轴坐标显示

```
num = len(x_serie)//8
x_major_locator=MultipleLocator(num)
ax=plt.gca()
ax.xaxis.set_major_locator(x_major_locator)
```

最后显示效果

```
plt.show()
```



遇到的问题

1.

```
<ipython-input-2-09cf79d39c52>:26: UserWarning: Legend does not support \
[<matplotlib.lines.Line2D object at 0x000001B07A8646D0>] instances.
A proxy artist may be used instead.
```

如果遇到这错误,

```
l1,=ax.plot(x_serie,values,'b',label='x_1')
```

记得前面有个**,**。

2.

```
RuntimeError: main thread is not in main loop
```

matplotlib的默认backend是TkAgg, 而FltkAgg, GTK, GTKAgg, GTKCairo, TkAgg, Wx or WxAgg这几个backend都要求有GUI图形界面的
我用来做后端服务运行的是没有图形界面的, 所以报错

解决:

改成: 指定不需要GUI的backend (Agg, Cairo, PS, PDF or SVG)

```
import matplotlib.pyplot as plt
```

```
plt.switch_backend('agg')
```

Uncle Dragon