**代码**

bar = (

Bar()

.add\_xaxis(xaxis\_data=x\_data)

.add\_yaxis(

series\_name="床位数",

stack="stack1",

category\_gap=50,

color = '#1c86ee',

yaxis\_data=bed\_num.tolist(),

label\_opts=opts.LabelOpts(is\_show=False),

)

.add\_yaxis(

series\_name="老人人口",

stack="stack1",

category\_gap=50,

color = 'green',

yaxis\_data=(elder\_num-bed\_num).tolist(),

label\_opts=opts.LabelOpts(is\_show=False),

)

.extend\_axis(

yaxis=opts.AxisOpts(

name="增长率",

type\_="value",

min\_=-20,

max\_=20,

# interval=5,

axislabel\_opts=opts.LabelOpts(formatter="{value} %"),

)

)

.set\_global\_opts(

title\_opts=opts.TitleOpts(title="老人人数及床位变化图", subtitle="2010-2017"),

tooltip\_opts=opts.TooltipOpts(

is\_show=True, trigger="axis", axis\_pointer\_type="cross"

),

xaxis\_opts=opts.AxisOpts(

type\_="category",

axispointer\_opts=opts.AxisPointerOpts(is\_show=True, type\_="shadow"),

),

yaxis\_opts=opts.AxisOpts(

name="人数",

type\_="value",

min\_=0,

max\_=250,

interval=50,

axislabel\_opts=opts.LabelOpts(formatter="{value} /百万人"),

axistick\_opts=opts.AxisTickOpts(is\_show=True),

splitline\_opts=opts.SplitLineOpts(is\_show=True),

),

)

)

line = (

Line()

.add\_xaxis(xaxis\_data=x\_data)

.add\_yaxis(

series\_name="老人增长率",

yaxis\_index=1,

y\_axis=elder\_add\_rate,

is\_smooth=True,

z\_level=3,

# symbol="triangle",

linestyle\_opts=opts.LineStyleOpts(width=4, type\_="dashed"),

# itemstyle\_opts=opts.ItemStyleOpts(

# border\_width=3, border\_color="yellow", color="blue"

# ),

label\_opts=opts.LabelOpts(is\_show=False),

)

.add\_yaxis(

series\_name="床位增长率",

yaxis\_index=1,

y\_axis=bed\_add\_rate,

is\_smooth=True,

z\_level=3,

linestyle\_opts=opts.LineStyleOpts(width=4),

label\_opts=opts.LabelOpts(is\_show=False),

)

)

bar.overlap(line).render\_notebook()

fig2,axs=plt.subplots(1,2,figsize=(14,4))

x\_data = [2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028]

y\_scatter = [have, need]

y\_line = [[have[0], have[-1]], [need[0], need[-1]]]

color\_list = ['b','g','r']

title\_list = [f'Beds Own in Feture',f'Beds Need in Feture']

for i, ax in enumerate(axs):

x = x\_data

yc = y\_scatter[i]

yl = y\_line[i]

sns.scatterplot(x, yc, ax = ax, color='r')

sns.lineplot([x[0], x[-1]], yl, ax = ax)

ax.set\_title(title\_list[i])

ax.set\_ylabel('Number of beds (10k)')

ax.set\_xlabel('year')

fig2.show()

fig2.savefig('beds\_predict.png')

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