ACTU PS5841 Data Science in Finance and Insurance - Autumn 2023 (Y. Wang)
Assignment - 4
Assigned 10/5/23, Due 10/13/23

LOWESS

The file `data` contains simulated data (x, y). Please code in python to use the LOWESS model to fit a curve through the data.

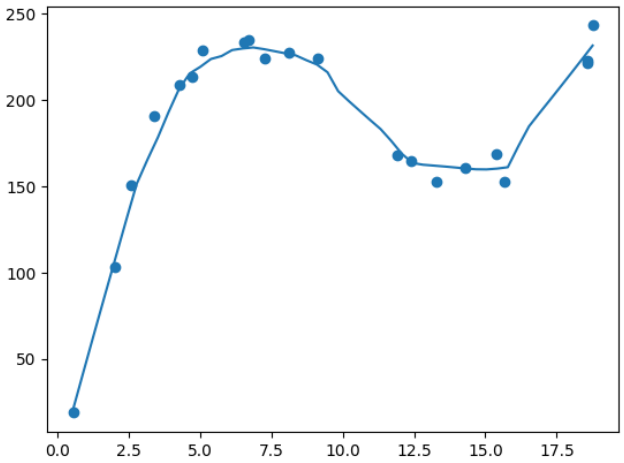
- Please do NOT use functions from existing packages for the tricube function, weighted simple linear regression, and LOWESS function. Please create your own code for these.
- Please use a neighborhood of 7 nearest neighbors for each target point.
- Please use a target grid of 50 equally spaced values between $\min(x)$ and $\max(x)$

```
xgrid = np.linspace( x.min(), x.max(), 50)
```

[a] Please let your code report the fitted values for point in `xgrid`

	xgrid	ygrid
0	0.557820	20.593023
1	0.929237	42.848406
2	1.300655	64.921820
3	1.672072	86.777573
4	2.043490	108.425037
...	...	...
45	17.271611	200.181013
46	17.643028	207.911911
47	18.014446	215.724346
48	18.385864	223.609398
49	18.757281	231.558556

[b] Please let your code provide a plot of the fit.



Please submit (*.ipynb and *.html) for your work