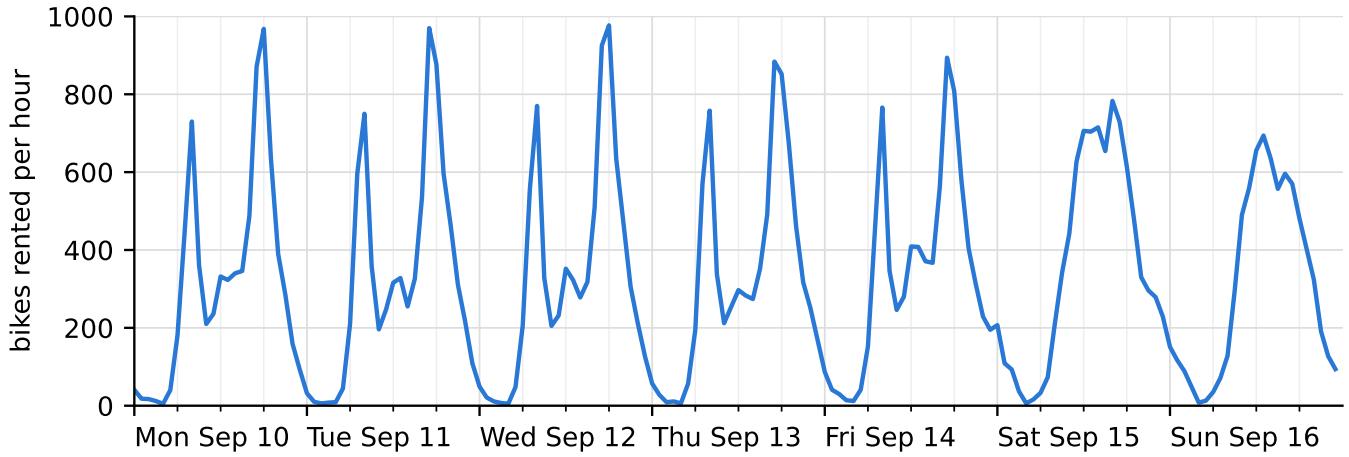
DATA 202 — Time-Series Data · Week 12 Wednesday

Capital Bikeshare in Washington, D.C.: bikes rented each hour, 2011–2012. Your professor will tell you when to do each part.

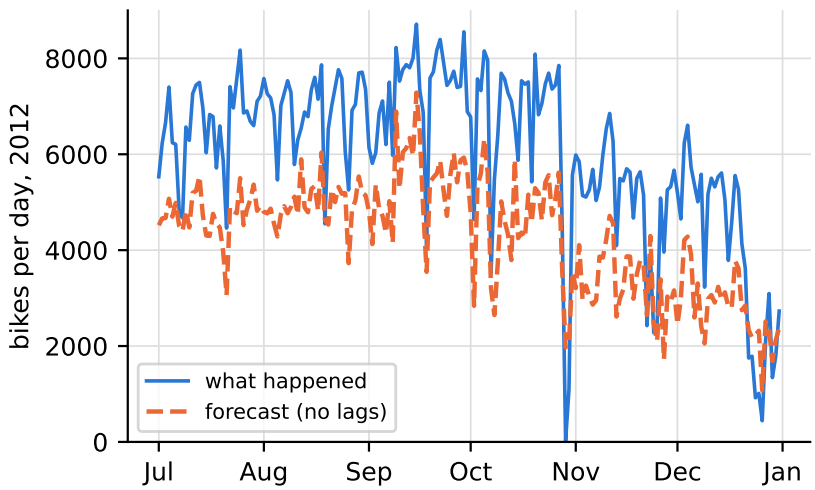
1 · One week



Bikes rented each hour, Monday, September 10, to Sunday, September 16, 2012.

1. **Label** the morning and the evening commute on one weekday.
2. **Circle** the weekend.
3. Your prediction for Monday, September 17, at 8 am: _____ bikes. **Pair talk:** what are you basing it on?

2 · The forecast



A random forest learned from the clock and the weather, January 2011 to June 2012. Then it forecast the next six months.

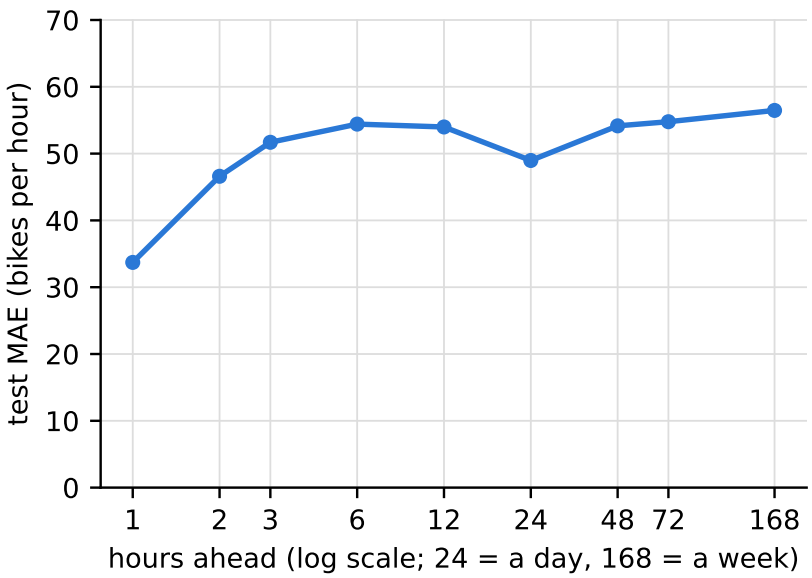
1. **Shade** the gap between the forecast and what happened.
2. **Pair talk:** why does the forest guess too low? Look at what it learned from.

3 · Shift by hand

time	rentals	`rentals.shift(1)`	`rentals.shift(-1)`
Jan 1, 2011, 0:00	16	_____	_____
1:00	40	_____	_____
2:00	32	_____	_____
3:00	13	_____	_____
4:00	1	_____	_____

1. **Fill in** both columns. (At 5:00, 1 bike was rented.)
2. **Pair talk:** which column could a model really have when it makes its prediction?

4 · How far ahead?



A forest with the clock, the weather, the newest rentals we'd know, and the same hour last week. Its typical miss on July–December 2012, by how far ahead it forecasts.

1. **Explain** the dip at 24 hours: what is the newest value we know a day ahead? _____
2. **Pair talk:** the bike company asks for next week's forecast. What would you tell them along with the number?