Stepwise selection activity

STAT3530 Applied Linear Models

Record your output as you work through `16-stepwise-selection.R`.

1. Forward selection by hand

Each candidate is added to the intercept-only model.

candidate	F	p**-value**
`precip`		
`lnox`		

Run `add1()` on the null model. Smallest p-value:

term _____ $p =$ _____

Add that term and run `add1()` again. Next term to enter:

term _____ $p =$ _____

2. Forward selection with `stepwise()`

Using `metric = 'SL'` and `sle = 0.05`:

step	**term entered**	p **at entry**
1		
2		
3		
4		
5		
6		

Selected model: `mortality ~` _____

To obtain a *smaller* model you would (circle one) **increase / decrease** `sle`.

3. Backward elimination

Each candidate is removed from the full model.

candidate	F	p**-value**
`precip`		
`humidity`		

Now run the full elimination with `sls = 0.05`.

First term removed _____ $p =$ _____

`lso2` removed at step _____ $p =$ _____

Terms *retained*: _____

To obtain a *smaller* model you would (circle one) **increase / decrease** `sls`.

4. AIC and BIC

	forward	**backward**
AIC		
BIC		

Preferred model _____ Contains `lso2`? _____

Switching to `metric = 'AIC'`, backward elimination keeps _____ predictors.

5. All subsets

Smallest AIC: `mortality ~` _____

Smallest BIC: `mortality ~` _____

Which model from earlier does the BIC choice match? _____

6. Your turn: diabetes

strategy _____ metric _____ `sle`/`sls` _____

Selected model: `y ~` _____

Predictors kept _____ out of 10

Compare with someone who chose different settings. Same model? _____

If not, what would you report?

_____

_____