Prediction and Bayesian Inference: Coding Exercise

Contrasts and Functions of Parameters Bayesian inference also allows easy computation of contrasts and more generally functions of parameters.

Consider the contrast (predicted mean difference) between a weekend day with `max_tmp` = 20 and a weekday with `max_tmp` = 30. This would be a difficult problem to solve analytically, but it is straightforward using simulation.

Note that a contrast of this sort (or any time), could also be calculated from a classical perspective, but, strictly speaking, the simulation approach is not permitted. Rather an analytical calculation, likely with a normal approximation (delta method?) would be necessary.

1. Fit the model.

2. Extract the simulations.

3. Compare differences

4. Calculate interval and plot difference

Prediction

1. Predict the expected (or average) consumption for max temperature of 25, weekend = 1, and precip = 0.

2. Predict the consumption for a new day with a max temperature of 25, weekday = 1, and precip = 0.

3. Create a figure to show a comparison of the predicted distributions.