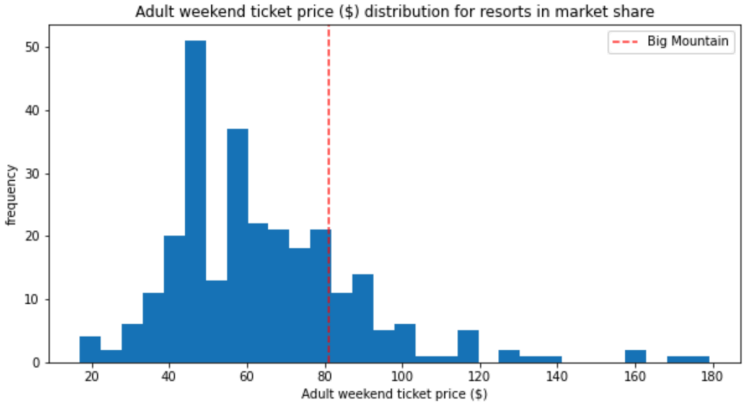
Big Mountain Resort Project Report

- The original data set analyzed contained 330 entries over 27 columns with information about ski resorts across the United States

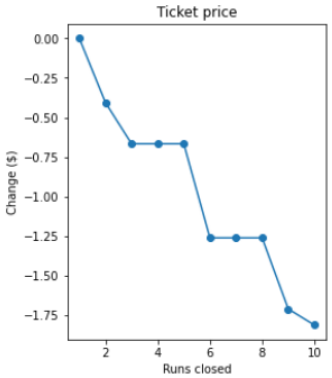
- The business problem was a general one of modeling resort revenue. The data science problem you subsequently identified is to predict the adult weekend ticket price for ski resorts.

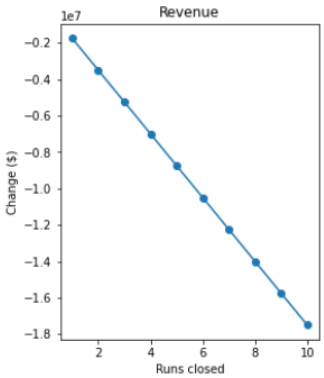
Scenario 1:
The model say closing one run closed makes no difference, 2 and 3 reduces support for ticket prices and revenues. Close down 4 or 5 as there's no further loss in ticket price, above that there will be big drop. This scenario is no the ideal overall.



Scenario 2:

In this scenario, Big Mountain is adding a run, increasing the vertical drop by 150 feet, and installing an additional chair lift. This scenario increases support for ticket price by $1.99. Over the season, this could be expected to amount to $3474638

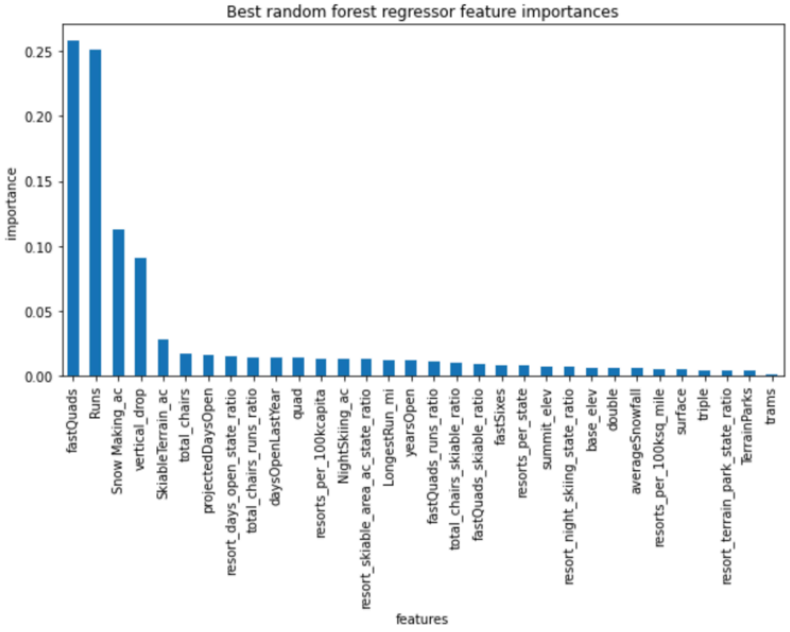




Scenario 3:

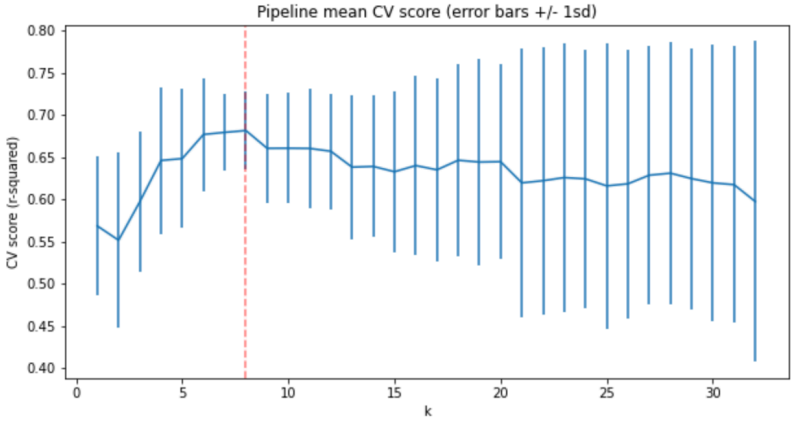
It has no difference from scenario 2 so it can be discarded as well as the scenario 4.

Big Mountain Resort modeled price is $95.87, the actual is $81.00. Using this model, then, on average you'd expect to estimate a ticket price within $9 or so of the real price. This is much, much better than the $19 from just guessing using the average.



The top four features are in common with your linear model are: fastQuad, Runs, Snow Making_ac and vertical_drop.

The random forest model has a lower cross-validation mean absolute error by almost $1. It also exhibits less variability. Verifying performance on the test set produces performance consistent with the cross-validation results.



The pipeline mean CV suggests a good value for k is 8. There was an initial rapid increase with k, followed by a slow decline. Also noticeable is the variance of the results greatly increase above k=8.