In this analysis, I took vital components from other ski resorts found across the country, including but not limited to: summit elevation, vertical drop, number of lifts, area, length of runs, number of days open, and availability of nighttime skiing, and then analyzed their importance in their respective resorts. This way, I can use other states’ statistics as a reference for my own findings. After correcting some of the incorrect data (e.g. removing unhelpful/NaN/null values, correcting mismatched values), I then used exploratory analysis and a linear regression to conclude that the most preferred features are the fast quads, the vertical drop, number of chairlifts, snow-making machines, number of runs, the length of the run, number of trams, the amount of skiable terrain. Once I found these, I then focused my analysis exclusively on Big Mountain Resort. I ran a couple of scenarios to find the ideal ticket price (assuming an average of five days per visitor), based on the preferred features:

The first scenario, found under 5.9.1 of my modeling repository, was to close up to ten of the least used runs. Closing one makes no difference, but closing two runs results in a steep drop in ticket and consequently revenue. Closing three to five of the runs, once again, makes no difference, but closing seven or more results in even steeper drops in ticket price and its respective revenue. As such, we will not proceed with this scenario.

The second scenario, found under 5.9.2, opens an additional run, increases the vertical drop by 150 feet, and includes another chairlift; doing so would increase the ticket price by $11.50 and would anticipate a seasonal revenue of $20,120,219. This is great! However, I ran two more scenarios in case there was a more lucrative option.

The third scenario, found under 5.9.3, is the same as the aforementioned one, but including an extra two acres of snowmaking. Doing so would result in a $13.63 increase per ticket, and an anticipated seasonal revenue of $23,849,727. This is the best option thus far!

The last scenario, 5.9.4, proposes a 0.2-mile increase of the longest run and an additional four acres of snowmaking; doing so yielded no benefits whatsoever. From these four scenarios, the one from 5.9.3 yields the best results. Details of the scenarios and their implementations may be found at the following link: [05\_modeling/05\_modeling.ipynb at main · ate2640/05\_modeling (github.com)](https://github.com/ate2640/05_modeling/blob/main/05_modeling.ipynb)

Thus, I propose that you use the scenario from 5.9.3; specifically, I recommend that you open an extra run, increase the vertical drop by 150 feet, and include an additional two acres of snowmaking. With a current ticket price of $81, I recommend that you increase the ticket price to $94.63 per ticket, per day. With an average stay of 5 days per visitor, from ticket sales alone you could expect $473.15 per person in a given visit. The installation of this most recent chairlift at $1,500,000, and just 3,171 visitors would allow for the price of installing the new chairlift to break even; with an anticipated 350,000 visitors in the season, the price would quickly make up for itself; in other words, less than one percent of the anticipated skiers would cover the cost of the new chairlift if you used the model from 5.9.3.