Student Final Grade Prediction

Model Results and Analysis:

The model didn't give us good results because it wasn't enough data. Even though we got some results but I will not talk about it so decided to take some Exploratory Data Analysis on it and give some insights what is happening in math class students comparing with features.

Let's take look into study time and total grade average of students if more study time means more success in grades of math class students.

studytime	total_grade_avg
1	10.253968
2	10.442761
3	11.651282
4	11.728395

As you can see on the left figure, study time (1 = 2 hours, 2 = 2-5 Hours, 3 = 5 - 10 hours, 4 = 10 hours or more) if you have more study time, incidacte increase in grade but there is really no big difference between who study 2 hours and 10 hours. Student in math class might skillful in that area.

In different feature, let's take look if consuming a lot of alcohol or small portion of it, will affect student grades.

Dalc	total_grade_avg
1	10.945652
2	9.857778
3	10.538462
4	9.814815
5	10.629630

Here we can see that, Dalc (Weekday alcohol consuming) 1 means low and 5 means high. We can conclude that drinking even high indicates that it does not affect grades that huge. Maybe affect in some way as you can see but not big difference.

Let's take look into parents of students. Does parents' education affect student grades in good way or bad way? (Fedu = Father Education, Medu = Mother Education)

Fedu	total_grade_avg	Medu	total_grade_avg
0	12.666667	0	12.555556
1	9.426829	1	9.197740
2	10.721739	2	10.216828
3	10.716667	3	10.451178
4	11.618056	4	11.839695

As you can see in the above figures, even though higher education of parents resulting good grade but it is not the case for every student. Even without parents' education students can receive vary good grades.

As a result, depends on this data alcohol consuming, parents education and study time does affect grade in some way but not much big difference. Maybe in their cultural thing maybe they already got some resistance of alcohol for example.