Information Visualization Report

Dataset: Student Alcohol Consumption

From the before deliverable where EDA techniques were discussed, adding to the analysis the data now seems to be very clean and has got some initial idea regarding the variables and their relationship with the predictor variable. The correlation matrix proved that **Gender** doesn't have any correlation with **Grades**, which made it easy to make decisions on the visualizations area.

I have used tools like R and Tableau for visualizations of the data set.

My main is to see how the grades and health of students are affected by alcohol. I have applied a few visualization techniques to get to a conclusion.

Visualisation 1 (Holtz, n.d.)

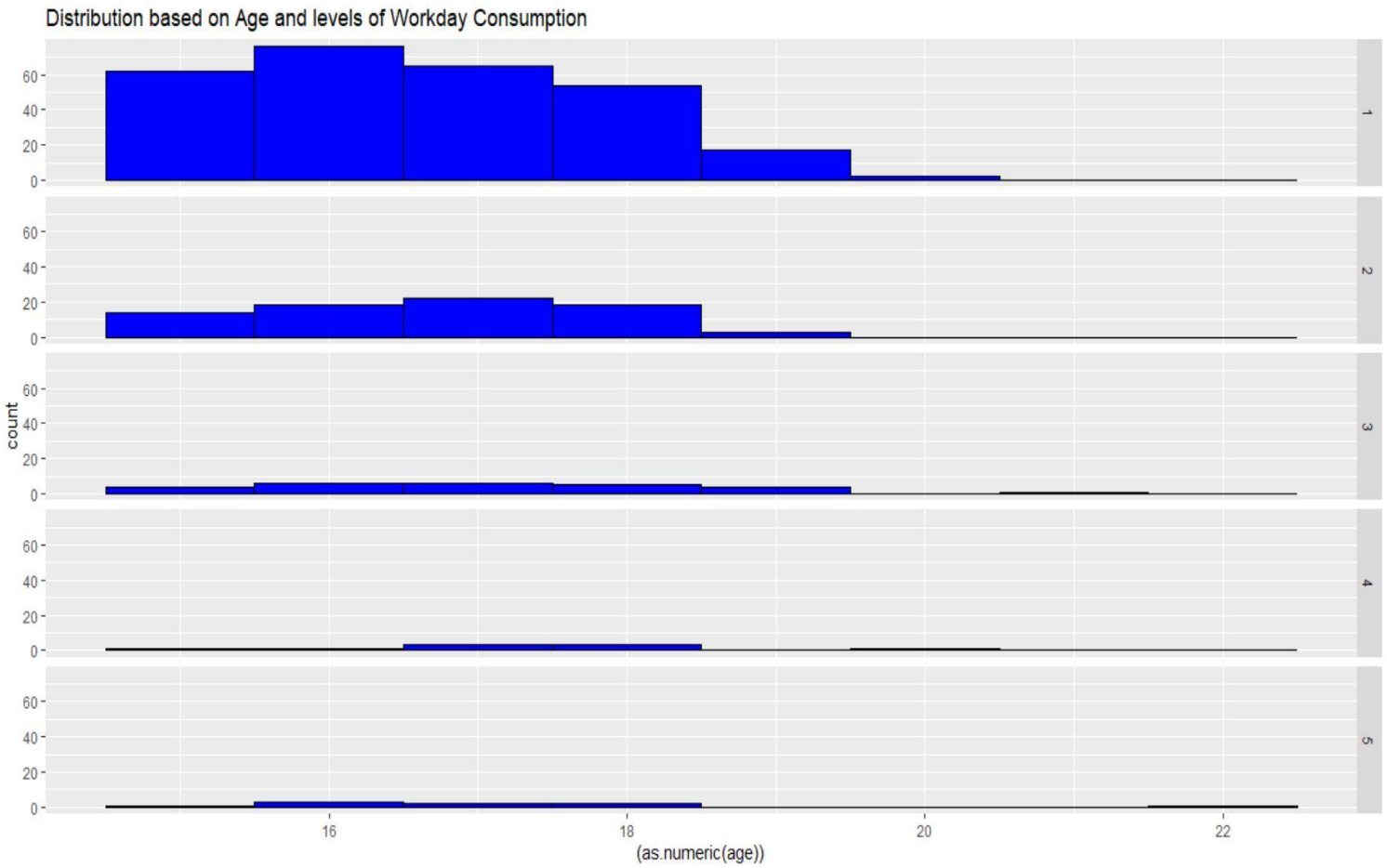


Fig.1

In fig.1 we can see that very few students drink alcohol regularly during weekdays and a majority of them are below the age of 19. So the most influenced students are in-between ages 15 and 19.

Visualization 2 (Holtz, n.d.)

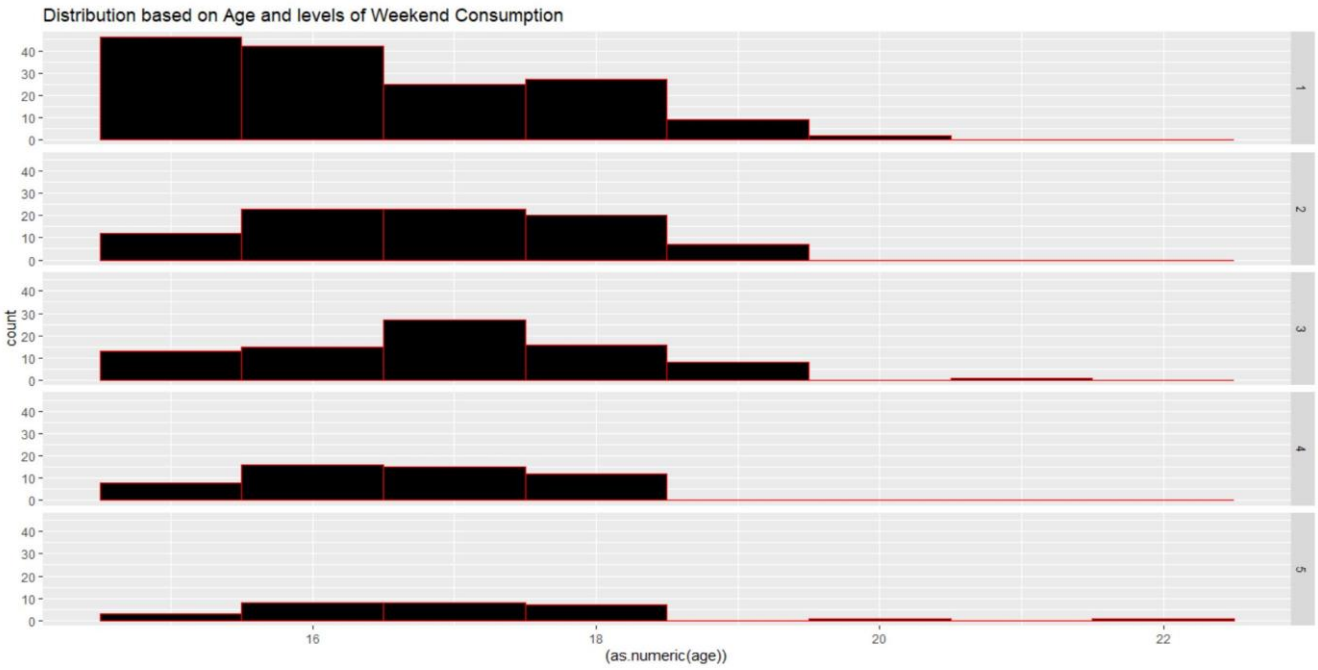


Fig.2

In fig.2 we can see that when compared to weekday alcohol consumption, there is a hike in the numbers. Again, we can see that most of the students that are influenced by alcohol are in the age between 15-19, where ages 20-22 seem to negligible. Regular consumption of alcohol is high during weekends.

Visualization 3 (Tutorial: Get Started with Tableau Desktop, n.d.)

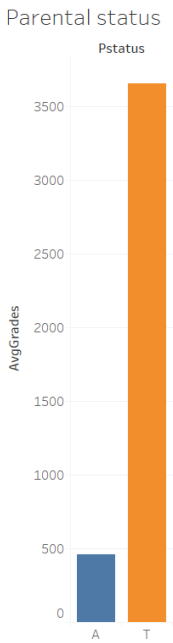


Fig.3

In fig.3 we can see that the grades of students whose parents are apart are extremely less when compared to when parents are together. This shows that a parent's relation is very important when it comes to the grades of the students.

Visualization 4 (Tutorial: Get Started with Tableau Desktop, n.d.)

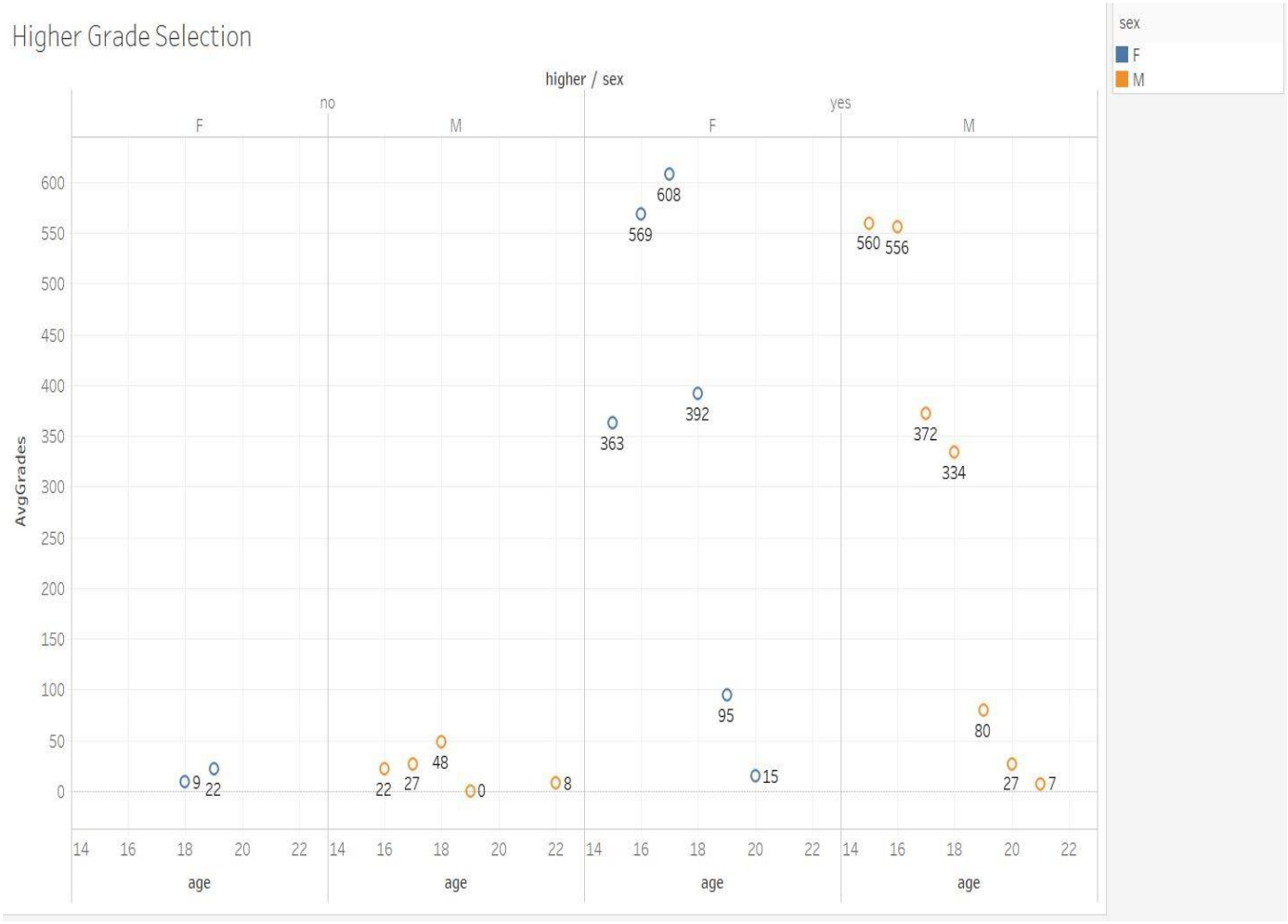


Fig.4

In fig.4 we can see that students both females and males perform better when they have an intension or thought of doing higher studies in the future compared to ones who do not choose it. and the age groups 15-18 perform very well when compared to other age groups.

We can see that females perform better when they have higher education in their minds but males perform better on an average both with and without intensions of higher education.

Visualization 5 (Tutorial: Get Started with Tableau Desktop, n.d.)

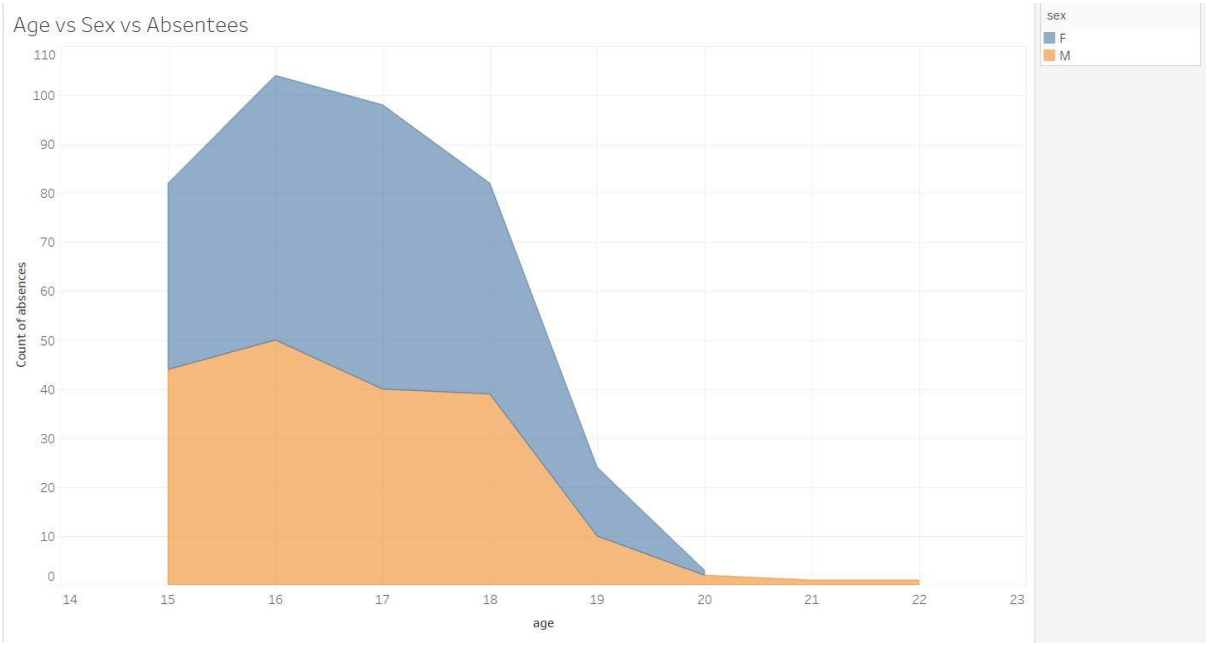


Fig.5

We can see that the number of absentees in females is more when compared to males with a huge margin. Both males and females have a high absent rate in the age group 16-18, 16 being the highest age group for both male and female students.

Visualization 6: (Holtz, n.d.)

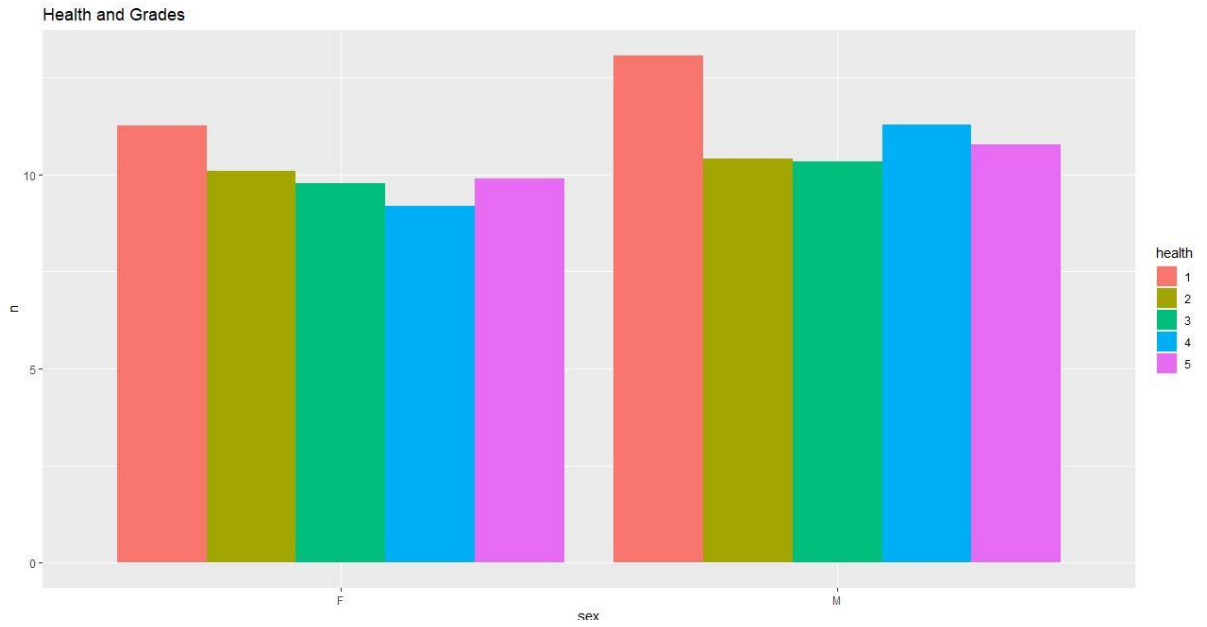


Fig.6

In fig.6 we can observe that the health of students in both males and females who have less health have scored more grades, this shows that grades do not get affected by the health of the students.

Visualization 7: (Holtz, n.d.)

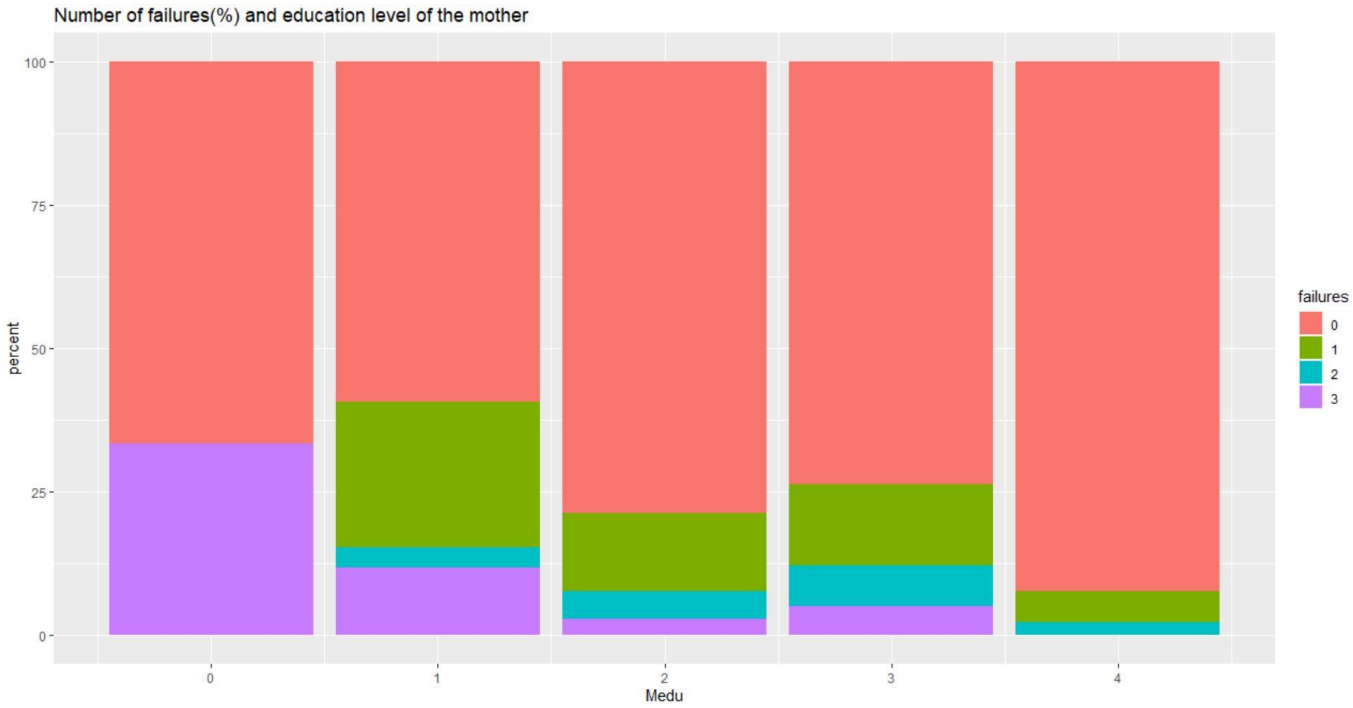


Fig.7

We can see from fig.7 that as mothers' education is higher the lesser the failure rate is for the students. This proves that mother's and father's education has got a great contribution to the education of their children.

Visualization 8: (Holtz, n.d.)

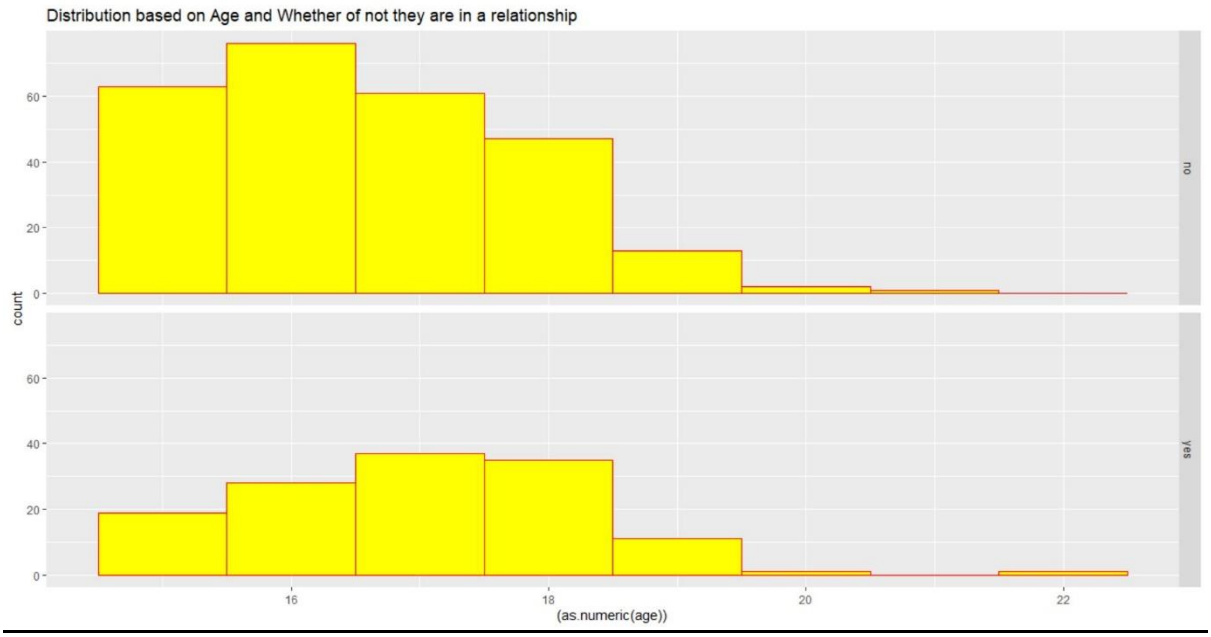


Fig.8

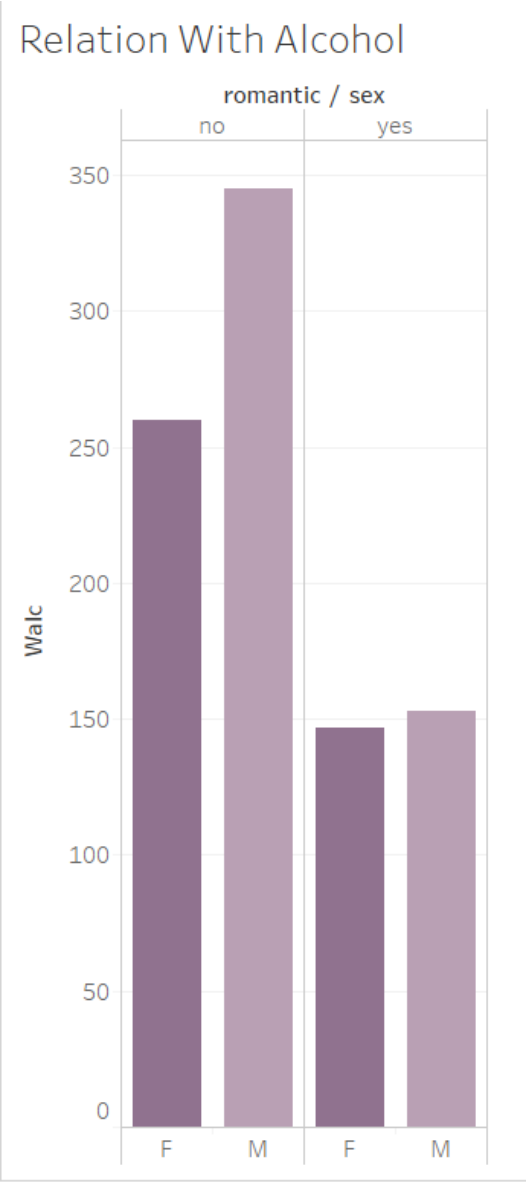


Fig.9 (Tutorial: Get Started with Tableau Desktop, n.d.)

Here we can observe that majority of the students are not into a relationship. And when males are in a relation, they prefer drinking more during weekends when compared to female students.

And both when they are not in a relationship or are single they have more tendency to drink alcohol.

This also states that male students drink more frequently when compared to female students.

Visualization 9: (Tutorial: Get Started with Tableau Desktop, n.d.)

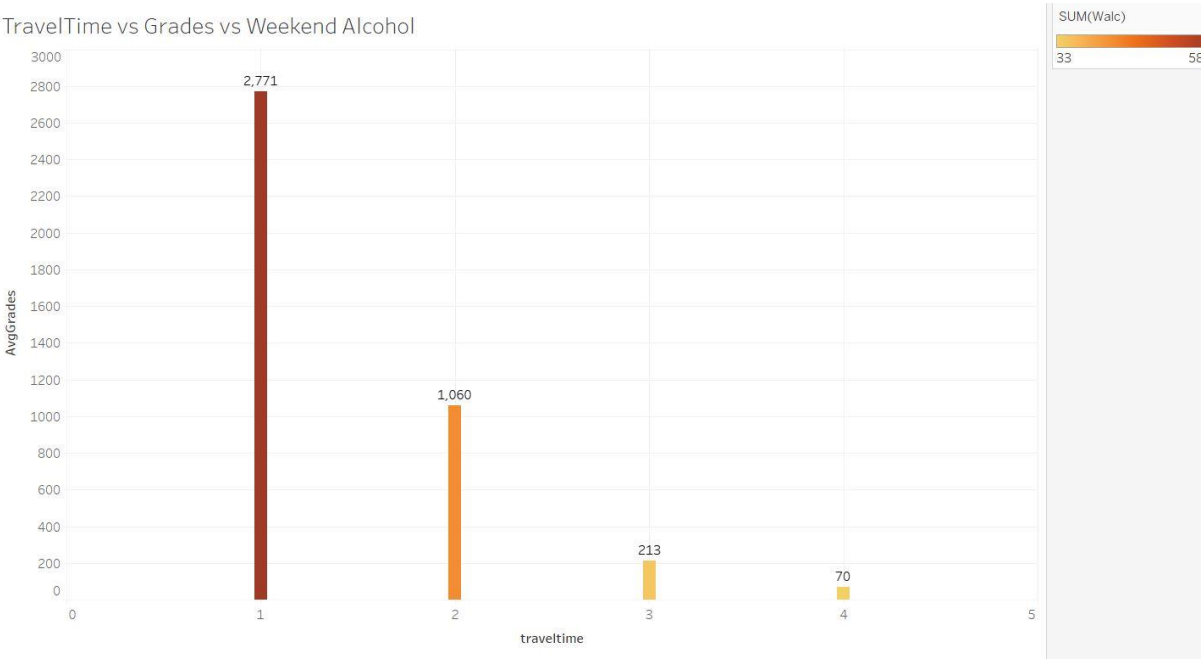
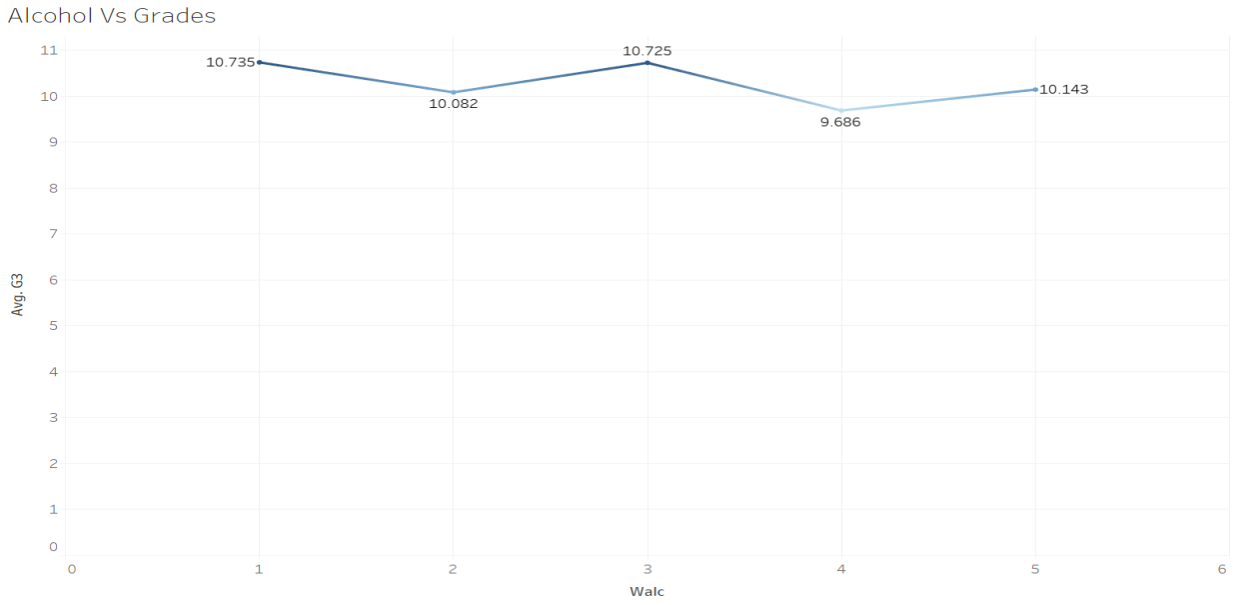


Fig.10

We can see from the figure that as the travel time increases the rate of drinking alcohol of students also decreases but grades of the students increase.

This gives an insight that students who stay in hostels that means are nearer to the school campus have a higher tendency of having alcohol than for the students who live with their families or at home.

Visualization 10: (Tutorial: Get Started with Tableau Desktop, n.d.)



From the above graph we can observe that on an average there is a minute effect of alcohol on the grades as all have scored almost the same marks on an average hence we can see that health of the student and the grades also have the inverse output.

CONCLUSION:

Factor	**Factor (high/low) or (yes/no)**	**Grades (high or low)**
Parents Relation	Together	High
Higher Education	Yes	High
Health	High	Low
Parents Education	High	High
Relation	No	High
Travel time	Low	High

The above table shows clearly which factor affects the.

I felt that health should contribute to the grades but if we carefully notice we can see that students who consume alcohol occasionally seem to be affecting their health status which is not affecting their grades much. Hence even though if the health and grade relation seems to be controversial but the fact behind it proves to be acceptable with goes with alcohol consumption effect on grades in the visualization 10.

References

Fabio Pagnotta, H. M. (n.d.). *Student Alcohol Consumption*. Retrieved from https://www.kaggle.com/

Holtz, Y. (n.d.). *ggplot2*. Retrieved from https://www.r-graph-gallery.com/ggplot2-package.html

Tutorial: Get Started with Tableau Desktop. (n.d.). Retrieved from https://help.tableau.com/current/guides/get-started-tutorial/en-us/get-started-tutorial-home.htm