Professor Moody

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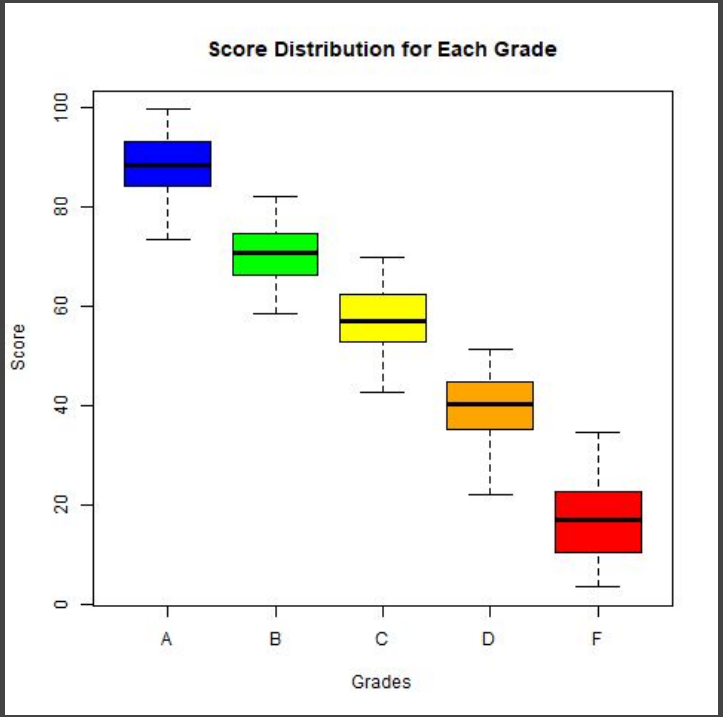
What Makes This Data Set Interesting?

- As we can see, in terms of score the grades overlap each other.
- For example someone who scored 80+ could get an A or a B. Why did student ‘x’ get an A with a score of 80 while student ‘y’ get a B with a score of 80?
- This tells us that there are more factors than score that affect a student’s grade.

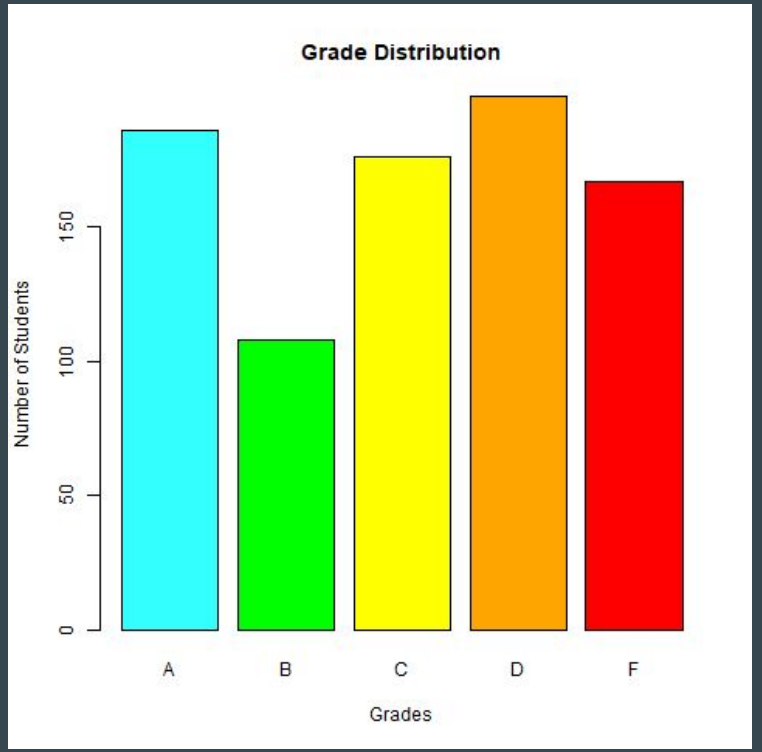


boxplot(moody$score ~ moody$grade, main="Score Distribution for Each Grade", col = c("blue", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Score")

Overall Distribution of Grades

- As you can see, most students got a D. Lesser students got an A, even lesser students got a C and F, and the least number of students got a B.

- This does not tell us much about how to increase our chances of getting an A but this does tell us what grades are more frequently awarded.

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barplot(table(moody$grade), main = "Grade Distribution", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Number of Students")
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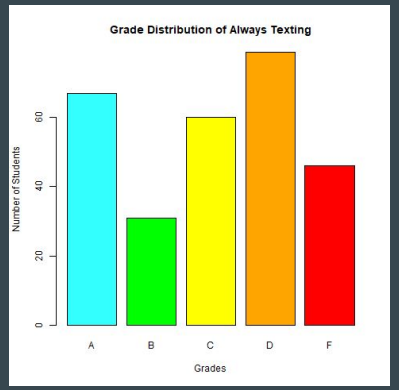
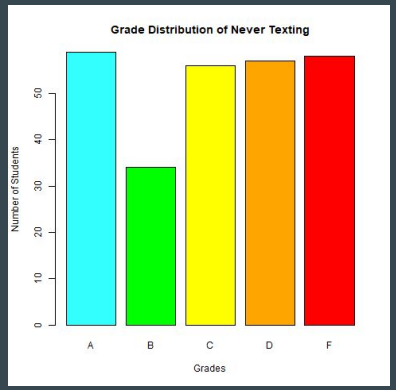
Texting Attribute Analysis

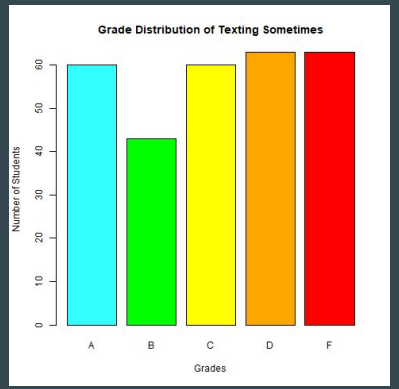
- Looking at the graphs on the right you can see that texting in class does affect your grade.
- Students that always texted in class either did very bad by getting a D or did very well by getting an A.
- Students that never texted in class have an equal/similar distribution among grades A, C, D, and F. This does not tell us much as it is similar to the original distribution.
- Students that texted in class sometimes have a similar distribution as never texted in class. Again this does not tell us much as it is similar to the original distribution.



barplot(table(subset(moody, texting == "always")$grade), main = "Grade Distribution of Always Texting", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Number of Students")



barplot(table(subset(moody, texting == "never")$grade), main = "Grade Distribution of Never Texting", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Number of Students")



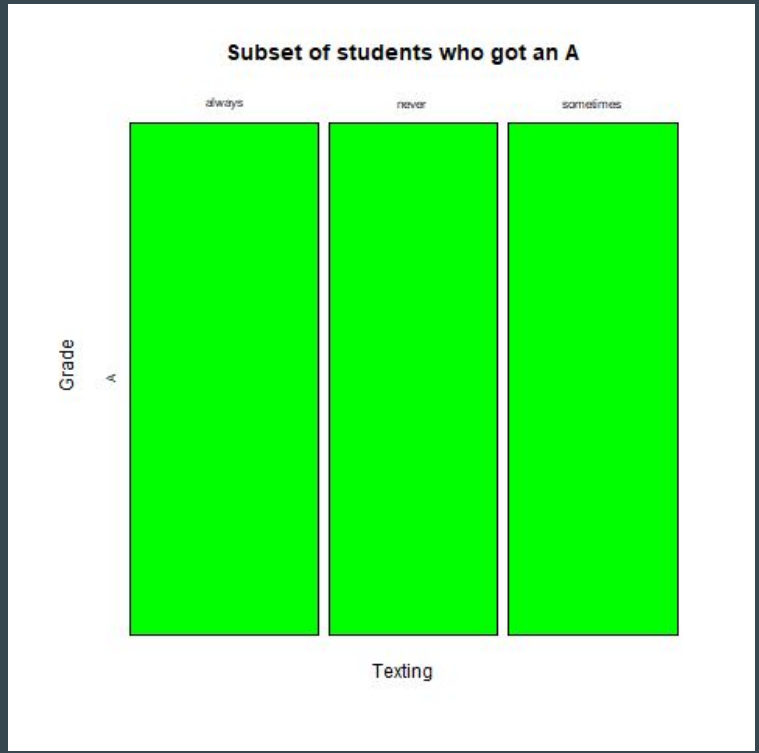
barplot(table(subset(moody, texting == "sometimes")$grade), main = "Grade Distribution of Texting Sometimes", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Number of Students")

What Does Texting in Class Tell us?

- When you plot a subset of moody's data set that contains data of students that only got an A and plot it against the categorical data of 'texting' you get the mosaic graph on the right.

- As you can see, the tile size of texting always in class is a bit bigger than other 'texting' values.

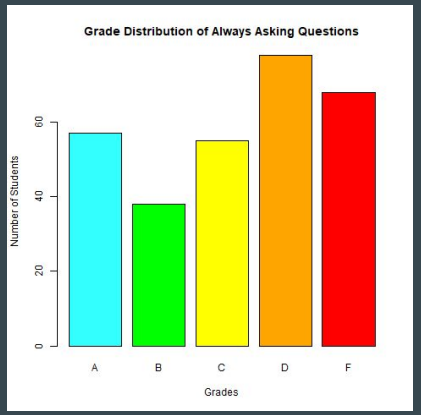
- This tells us that always texting in class further increases our chance of getting an A.



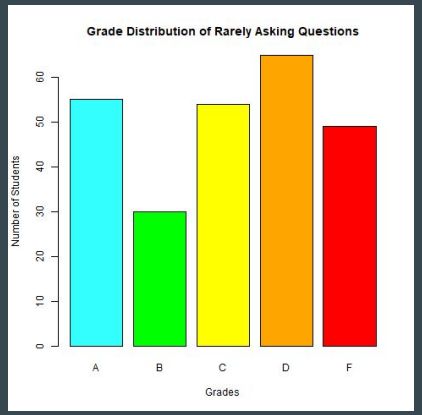
mosaicplot(sub_df$texting ~ sub_df$grade, main="Subset of students who got an A", col = "green", xlab = "Texting", ylab = "Grade")

Questions Attribute Analysis

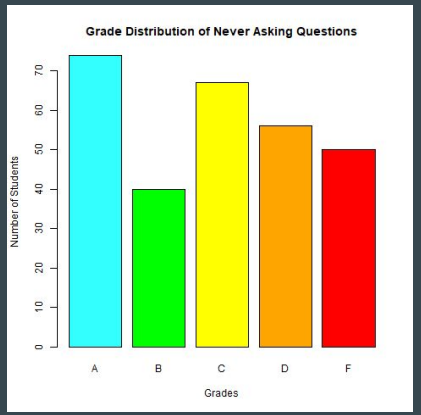
- Looking at the graphs on the right you can see that asking questions in class does affect your grade.
- Students that always ask questions have a higher chance of getting a D or an F.
- Students that ask questions rarely have a higher chance of getting a D. Getting an A is possible but less probable to happen than getting a D.
- Students that never ask questions have the highest chance to get an A. The distribution shows that most students got an A.



barplot(table(subset(moody, questions == "always")$grade), main = "Grade Distribution of Always Asking Questions", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Number of Students")



barplot(table(subset(moody, questions == "rarely")$grade), main = "Grade Distribution of Rarely Asking Questions", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Number of Students")



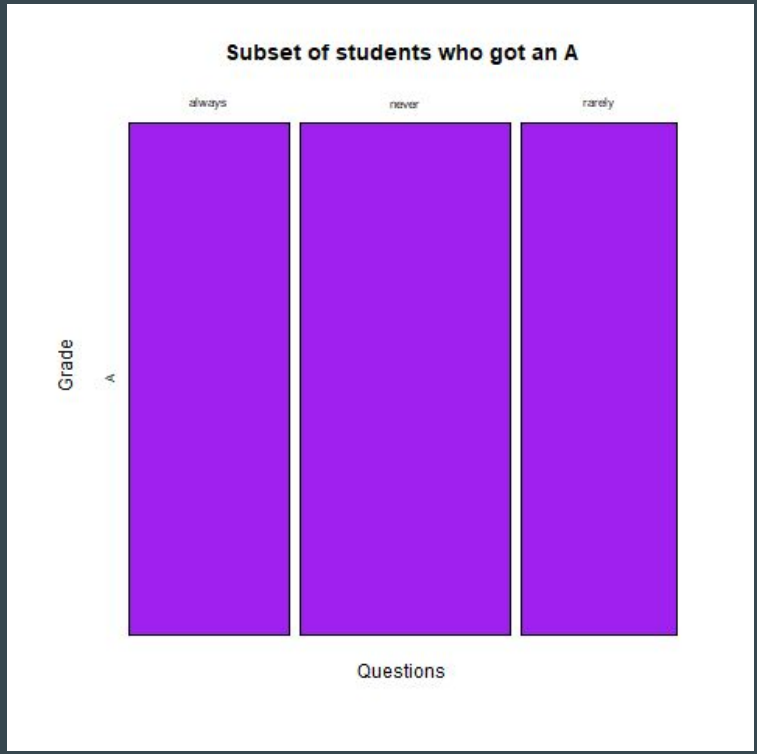
barplot(table(subset(moody, questions == "never")$grade), main = "Grade Distribution of Never Asking Questions", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Number of Students")

What Does Asking Questions in Class Tell us?

- When you plot a subset of moody's data set that contains data of students that only got an A and plot it against the categorical data of 'asking questions' you get the mosaic graph on the right.

- As you can see, the tile size of never asking questions is much bigger than other 'question' values.

- This plot too tells us that never asking questions in class further increases our chance of getting an A.

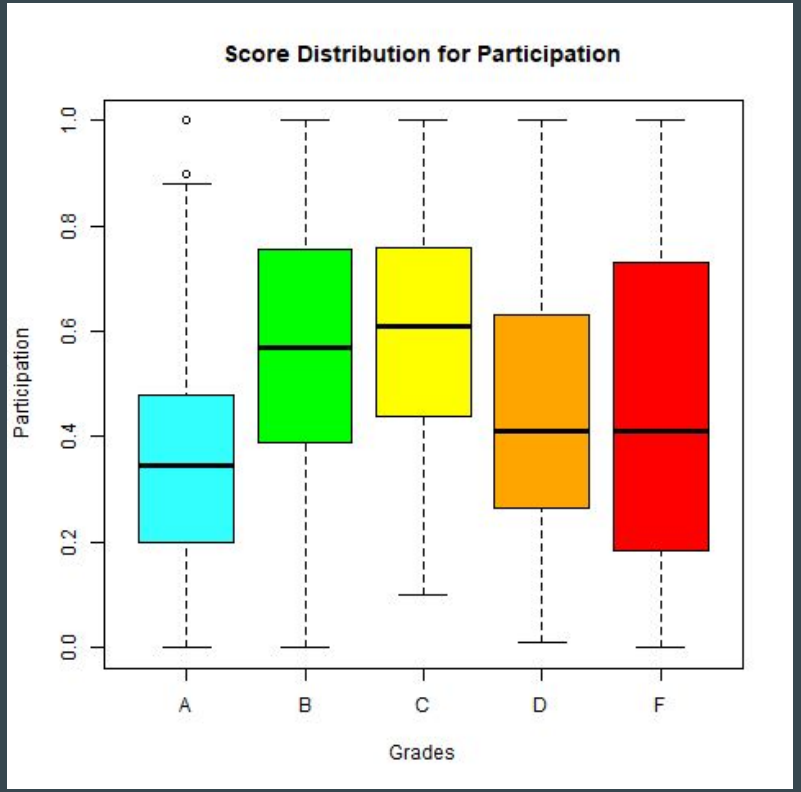


mosaicplot(sub_df$questions ~ sub_df$grade, main="Subset of students who got an A", col = "purple", xlab = "Questions", ylab = "Grade")

Participation Attribute Analysis

- As you can see the participation median and upper quartile of A grade is the lowest.

- All though the range of grade A is very high, chances of getting an A when your participation index is higher than 0.2 but lower than 0.5 is the highest.

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boxplot(moody$participation ~ moody$grade, main = "Score Distribution for Participation", col = c("#33FFFF", "green", "yellow", "orange", "red"), xlab = "Grades", ylab = "Participation")
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Advice for Moody's Students

- Always text in the class, although it won't significantly increase your chances of getting an A, it will increase your chance of getting an A by a slight margin.

- Never asking questions will drastically increase your chances of getting an A.

- Having a lower participation index(not lower than 0.2 and not greater than 0.5) will increase your chances of getting an A.

- The original grade distribution already tells you getting an A is pretty likely. However, the above points increases the likelihood of getting an A.

Thank you!