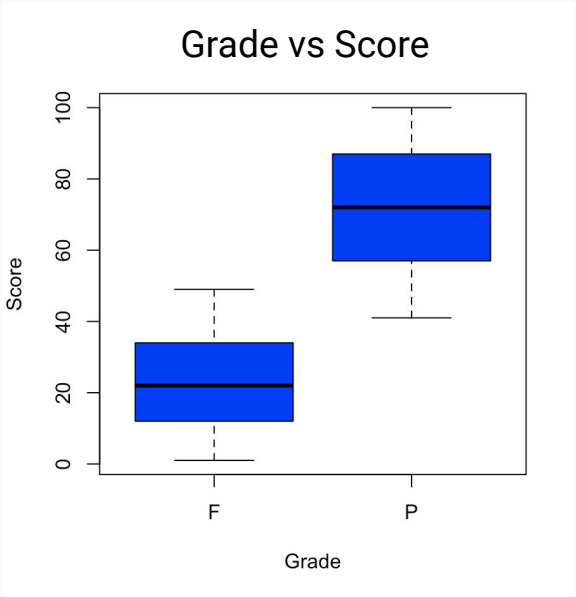
Pattern Discovery - Moody Grading Data Puzzle

By Eric Lin

Starting Variable

- Score is important in determining grades.
- First, use boxplot to determine cut off points.
- Establish overlap at Scores 41 to 49.

```
# Overlap
overlap <- moody[moody$Score >= 41 & moody$Score <= 49,]
overlap$Grade <- ifelse(overlap$Grade == 'P', 1, 0)
summary(overlap)
```

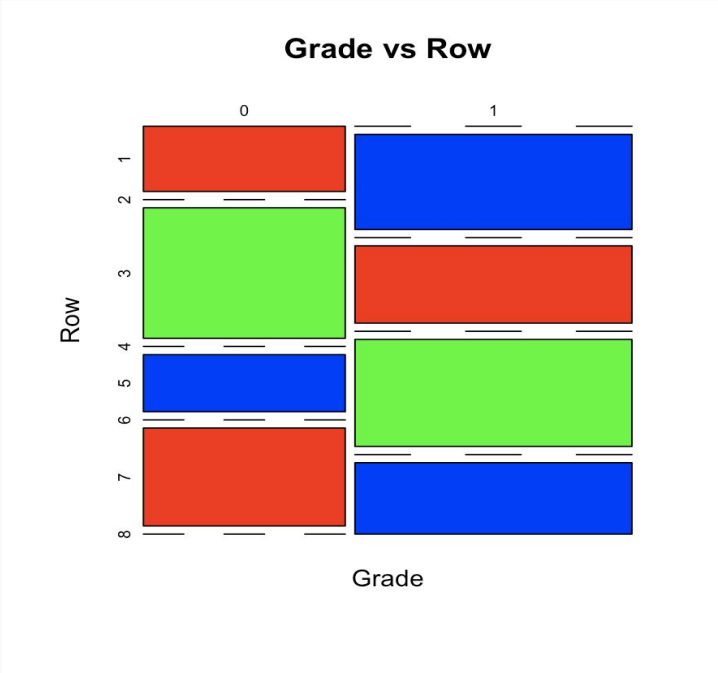


Grade vs Row Number

- Use mosaic plots to find the relationship between variables.

-
```
> tapply(overlap$Grade, overlap$Row, mean)
1 2 3 4 5 6 7 8
0 1 0 1 0 1 0 1
```

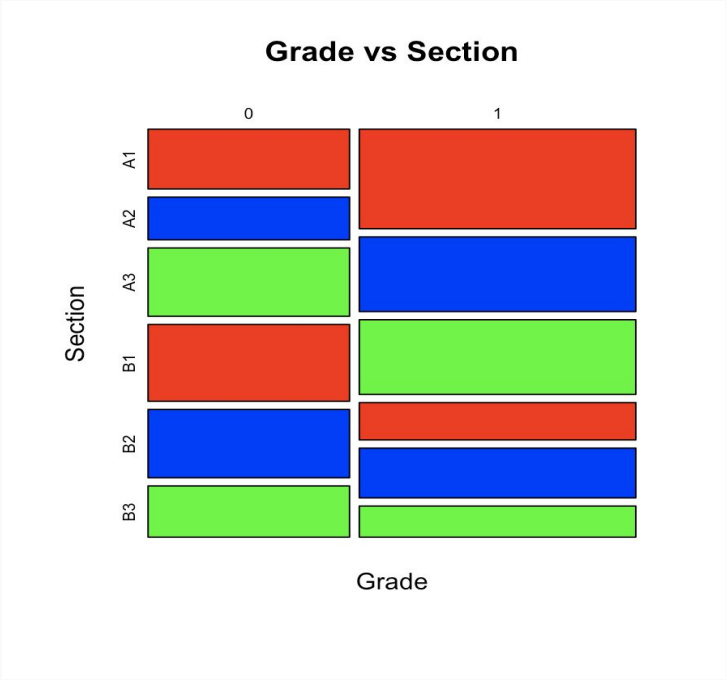
- In the overlap, only even numbered rows are granted a Passing Grade.



Grade vs Section

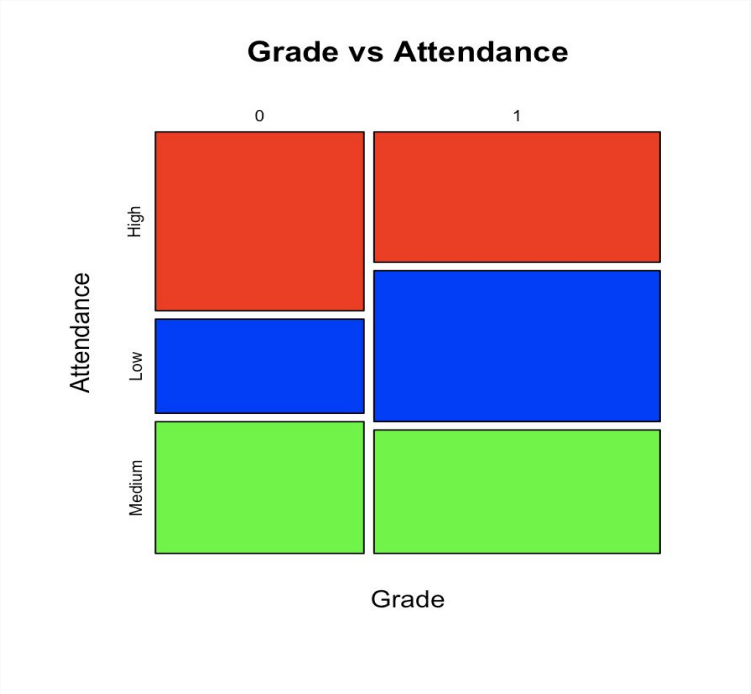
- Mosaic plot indicates that you are more likely to receive a Passing Grade if you are in Sections A1, A2, and A3.

- In Sections B1, B2, B3, you are more likely to receive an F.



Grade vs Attendance

- Mosaic plot indicates that if you have low attendance, you are more likely to receive a Passing Grade if you have low attendance.



Conclusion: Increasing Chances to Passing

To increase your chances of receiving a “P”, you should:

- Sit in even numbered rows (2, 4, 6, 8).
- Be in Sections A1, A2, or A3.
- Have a lower attendance.

Conclusion: Rules to Passing

You are guaranteed to receive a “P” if:

- 1.) You have a score of at least 50 or above.

OR

- 1.) You have a score between 41 and 49.
- 2.) You are in rows 2, 4, 6, or 8.