

Homework

Creativity (due 02/23/2026)

Introduction

Recall the investigation of student grade data that we represented with paired pie charts then paired bar charts. We can do better than both of those.

```
layout(matrix(c(1,2), nrow = 1))
pie(table(dat$first_letter))
mtext("Initial Grade", side = 3, font = 2, cex = 1.5)
pie(table(dat$retake_letter))
mtext("Grade on Retake", side = 3, font = 2, cex = 1.5)
```

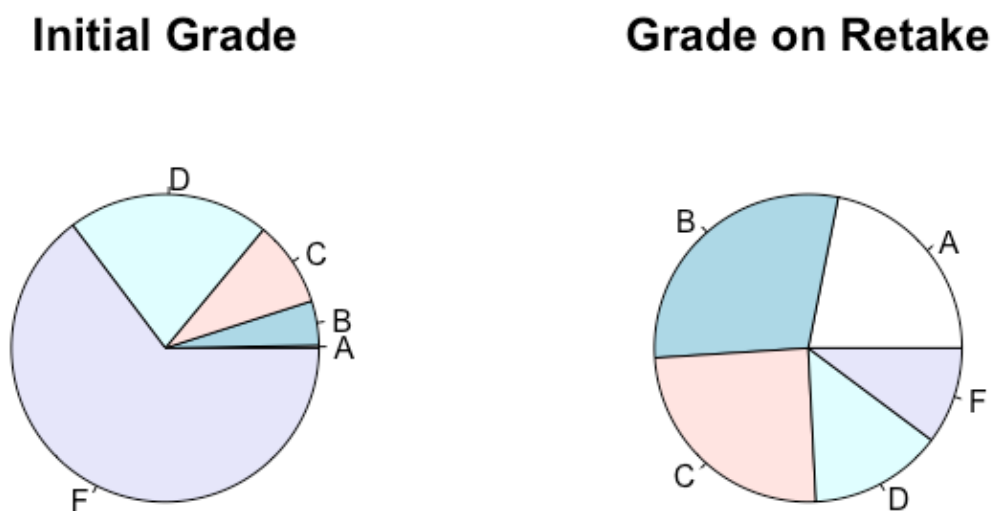


Figure 1: Side-by-side pie charts showing the distribution of student exam grades on the initial exam and retake.

```
## head(dat)
tab <- rbind(table(dat$first_letter), table(dat$retake_letter))
row.names(tab) <- c("first", "retake")
## tab
barplot(tab, ylim = c(0, 250), beside = TRUE, col = c("red", "blue"), las = 1)
legend("topleft", c("Initial Grade", "Retake Grade"), fill = c("red", "blue"))
```

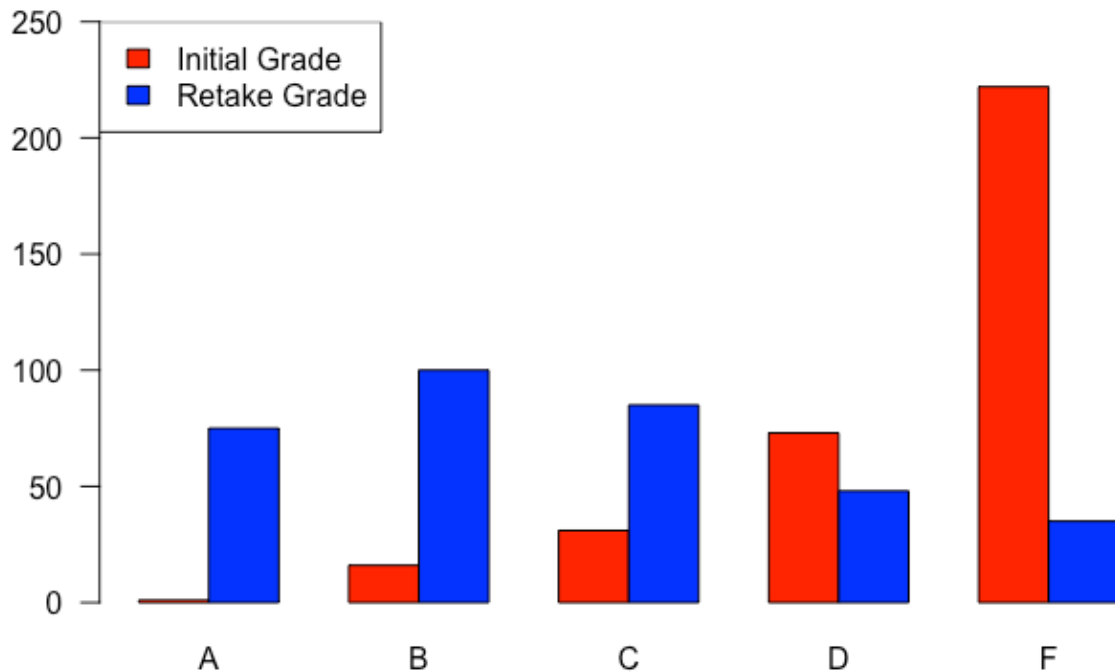


Figure 2: Side-by-side bar charts showing the distribution of student exam grades on the initial exam and retake.

Without the use of generative AI, you should sketch, program, or carefully describe a third presentation of the data. You might have an idea for a graph, but not know its “name”. That’s fine. Focus on what you want to show.

Your output

You can submit any of the following

- a hand-drawn graph (on digital tablet or on paper),
- a coded graph made using the actual data or comparable mock data (submit code and output), or
- a clear, written description of the layout and details of your graph.

If you found inspiration elsewhere, be sure to cite those sources by providing links. If your graph was an “original” - or at least if you thought of it before doing additional research, be sure to state that as well. Remember you had some class time to think about this, so be sure to review your notes/notebook.

Include your response(s) to the above items in a single .pdf file, uploaded to the appropriate D2L folder by Monday, February 23.