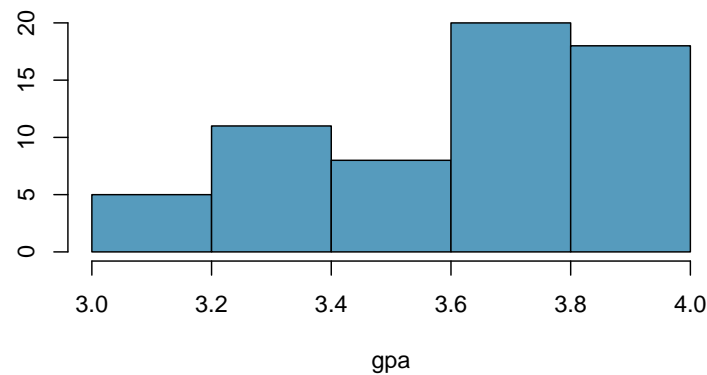


Application exercise 4.1: Sample size

Submit your responses on [Sakai](#), under the appropriate assignment. Only one submission per team is required. One team will be randomly selected and their responses will be discussed.

In 2001 the average GPA of students at Duke University was 3.37. Last semester 63 Sta 101 students responded to the question on GPA on the class survey. The mean was 3.58, and the standard deviation 0.53. A histogram of the data is shown below.



1. Construct a 95% confidence interval for the average GPA of all Duke students.
2. If you wanted to produce a confidence interval of the same width as that from question 2, but based on a 98% confidence level, how many students would you need to sample?
3. If we wanted to cut the margin of error in half (compared to the original confidence interval from Question 1 above) and increase the confidence level to 98%, how many Duke students would we need to sample?