

## Assignment 4

Suppose an urn contains 4 white balls and 6 black balls, making a total of 10 balls. Five balls are drawn randomly without replacement. Let  $X$  represent the number of white balls drawn. Then,

- a. Simulate the process of drawing 5 balls from the urn 1000 times.
- b. For each trial, count the number of white balls drawn.
- c. Estimate the probability distribution of  $X$  (the number of white balls) based on the results from the simulation.
- d. Plot the estimated probability distribution.

**Note that, you have to create a class to solve this problem and make your theoretical solution ready at the time of evaluation.**