*Session 4: Assignment 6*

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1. Introduction

This assignment will help you to consolidate the concepts learnt in the session.

1. Problem Statement

**Problem Statement 1:**

Two balls are drawn at random in succession without replacement from an urn

containing 4 red balls and 6 black balls. Find the probabilities of all the possible outcomes.

**Note: Solution submitted via github must contain all the detailed steps.**

**3. Output:**

Total Red Balls=4, let it be R

Total Black Balls =6, let it be B

Total Number of Balls=10, let it be N

There can be 4 possible outcomes as shown below:

1. Both the balls are RED

P(R,R) = (R/N)x(R-1/N-1) = (4/10)x(3/9) = 12/90 = **6/45** = 2/15

1. First ball is RED, second ball is BLACK

P(R,B) = (R/N)x(B/N-1) = (4/10)x(6/9) = 24/90 = **12/45** = 4/15

1. First ball is BLACK, second ball is RED

P(B,R) = (B/N)x(R/N-1) = (6/10)x(4/9) = 24/90 = **12/45** = 4/15

1. Both the balls are BLACK

P(B,B) = (B/N)x(B-1/N-1)= (6/10)x(5/9) = 30/90 = **15/45** = 5/15