

Bayesian Inference and Computation:

Assignment 1

Deadline:

In a game, players can buy loot boxes. Each box contains one item chosen at random from fifty loot items in the game. By simulating lots of players buying loot boxes, compute the expected number of boxes a player needs to buy in order to collect all fifty items.

1. Write a function that buys a new box and, if the player doesn't own it already, adds it to the set of items the player doesn't own already.
2. Write another function using a while loop that simulates a player buying boxes until they own all the items.
3. Use a for loop to simulate 10,000 players buying boxes until they own all the items and compute the expected number of boxes a player needs to buy in order to collect all fifty items.

You should submit upload one R script to Canvas that can be run on any computer. It should contain three code chunks, one for each part of the course-work. Each chunk should build on the previous chunk and the code should be commented.