Exercise – Random

1. Create a “Dice Bag” class using the C++ std::random classes.

This Dice Bag should have the ability to roll the following dice:

* 2-sided dice
* 3-sided dice
* 4-sided dice
* 6-sided dice
* 8-sided dice
* 10-sided dice
* 20-sided dice

1. You are creating a game that contains a lot of procedural content. You need to generate plants and trees for the environment. The area is primarily trees, then shrubs, with a few stones scattered about.

Using the AIE Bootstrap project, set up a virtual environment to match the specifications. What random system would be suitable to create the desired distribution of objects?

Randomly place objects within a scene and display them graphically. How could you randomly place them? Are there any issues with the randomisation system you have chosen to place them?

1. You are creating a new lottery game!

Create a system that will select 6 winning numbers out of 45 numbers.

Also create a system that will generate a collection of entry combinations, based off a specified amount of entries. For example, someone wishes to purchase 20 entries, so you should generate them a ticket with 20 combinations.

Now, given a set of winning numbers, loop through generating new combinations of numbers, counting for each new set created, until the loop generates the same combination as the initial set of winning numbers. How many attempts did it take the loop to generate these numbers?

1. Given a card deck of 52 cards, create a dealer class that can deal out either 2 cards to a player for a game of Texas Hold’Em Poker, or deal out 5 cards to a player for a game of 5 Card Stud Poker. Remember that when a card is dealt it should be removed from the deck.