

CS119 – Lab 12

Due Date: May 8

Purpose: Monads are a mind-blowing construct that allows us to use "state" within are functional programs. We will illustrate this by extending the functionality of code that simulates rolling dice.

Knowledge: This lab will help you become familiar with the following content knowledge:

- How to use a monadic type

Task: Follow the steps in this lab carefully to complete the assignments. Copy the lab12 folder and complete the following assignment in the file `Dice.hs`. Start by testing the dice functions that are provided.

Assignment 1:

Write a function `rollNDice :: Int -> Random [Int]` which rolls dice n times and returns a list of n results. Do this with `return` and `>>=`.

Criteria for Success: Test your function using the `apply` function and an arbitrary seed:

```
> apply (rollNDice 3) 123456789
```

The result should be a list of three dice rolls. Test this with different n and seed values.

Submit your file `Dice.hs` in Canvas for grading.