Chapter 5 Programming

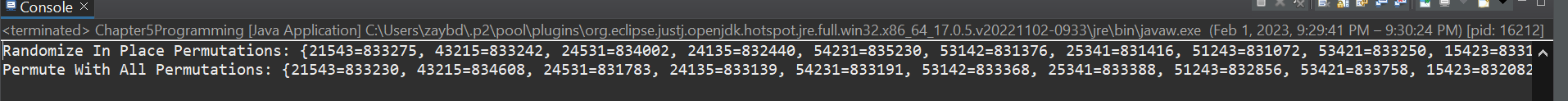
Text

Description automatically generated

This code is fairly straightforward. The permuteWithAll and randomizeInPlace methods are practically identical, with the only difference being that randomizeInPlace will not pick previous values to swap with. I used the arrayToString method to make a string hashmap more easily.

Text

Description automatically generatedThe for loop allows us to iterate over the numberOfTests, perform both permutation methods, and add them into their respective hash map. I asked chatGPT the best way to add each string into the hashmap and this was the answer it gave. I find it to be quite nice, personally.

The randomizeInPlace is slightly more equal, in terms of how many of each permutation it produced. permuteWithAll, on the other hand, was much less consistent.

I didn’t want to screenshot all of the results, but even with just that, its easily visible.

Below I have some graphs to illustrate each, and randomize is ever so slightly more consistent.