I have to use the data run my program from https://www.onlinegdb.com/online\_c++\_compiler.

My computer seems too fast, I get all zero at runtime, even use nanoseconds.

I will show printscreen of www.onlinegdb.com/online\_c++\_compiler at final



Red Line – randomized-select

Green Line – counting sort

Blue Line – bucket sort

Explanation:

1. Time complexity of counting sort is O(n), when data closer, time complexity of randomized-select will be closer to O(n). When n increase, the randomness decrease, which make data closer
2. The reason why runtime of bucket sort is unstable may be that I use insertion sort to sort bucket as book written.
3. Probabilities of lucky and unlucky is closer when n grow higher, because as n increases, the randomness decreases



   