

c) Generate a short, concise synthesis of the learning (~300 words) from the class session that the student will share with classmates and submit via the form to the instructor.

There are three main criteria for which we determine the “usefulness” of a hash function: its “randomness,” its load factor  $\alpha$ , the total space the corresponding hash table will take up. For the first criterion, we want close inputs such as “1334” and “1343” to not be similar and to, hopefully, have unrecognizably different hashes. For the 2nd, we would want to minimize the load factor by increasing the number of slots and balancing with the 3rd criterion. In practice, we should care about making the load even across all slots by choosing a random enough has function.