Exercise 1   Simple training exercises

1. Consider inserting the keys 10, 22, 31, 4, 15, 28, 17, 88 and 59 into a hash table of length $m = 11$ using open addressing. Illustrate the result of inserting these keys using linear probing with $h(k, i) = (k + i) \mod m$ and using double hashing with $h_1(k) = k$ and $h_2(k) = 1 + (k \mod (m - 1))$. (CLRS 11.4-1)

Exercise 2   Exam question from 2024

Consider the hash table $T = [4, Nil, Nil, 3, Nil, 18, Nil, Nil]$ with $m = 8$. Assume zero-indexing.

1. Insert the keys 7, 5 and 20 using *linear probing* with the auxiliary hash function $h'(k) = 3\lfloor k/2 \rfloor$ and show the result.

2. Insert the keys 7, 5, 20 (in the original table) using *double hashing*, with $h_1(k) = k \mod 4$ and $h_2(k) = 2k + 3$ and show the result.

Exercise 3   Fun creative exercises!

Continue with `hash_names.py` if you haven't done it yet.