PL 68
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In exercises 1-4 we study different types of hashing. In all cases the table size is 11 and we insert the following keys into the hash table: 10, 22, 31, 4, 15, 28, 17, 88

So, simulate insertion of keys in the following situations:

1. we use chaining and hash function $h(x) = x \ mod \ m$
2. we use open addressing with linear probing and $h' = h$
3. we use open addressing with quadratic probing and $h' = h, c_1 = 1, c_2 = 3$
4. we use open addressing with double hashing and $h_1 = h$, $h_2(x) = 1 + (x \ mod \ (m-1))$

5. Implement (in pseudocode) open addressing hashing (as hash function use multiplication method, $A = 0.618$ with linear probing) which in case of full hash table doubles the size of hash table and rehashes the keys into the new hash table.
6. Let us observe situation in previous question. Assume that at start the size of hash table is 4. Simulate what happens when the keys used in questions 1-4 are inserted to the table.