* how to resolve collision during insertion ?
  ① fixed (unordered) array per bucket
     [can still overflow]
  ② linked list per bucket
     chaining : don't want long chains
  ③ other data structure [usually called secondary] per bucket
     [more complicated]
  ④ use other empty buckets
     open addressing

* open addressing
  a[key] = value
  x = a[key]

  ① insert (key, value) to check $h_0(key) = h(key)$
  ② if fail, insert to check $h_1(key)$
  ③ if fail, insert to check $h_2(key)$
  ⋮
  (m-1) if fail, insert to check $h_m(key)$
  (m) declare failure
     not found

* (A) linear probing :

$$h_i(key) = (h_{i-1}(key) + 1) \% K$$
$$= (h_0(key) + i) \% K$$

primary clustering

$m = K-1$

(B) quadratic probing :

$$h_i(key) = (h_0(key) + i^2) \% K$$

secondary clustering

$m = ?$

(C) double hashing :

$$h_i(key) = (h_0(key) + i\,\tilde{h}(key)) \% K$$

$\tilde{h}(key) > 0$

$m = ?$