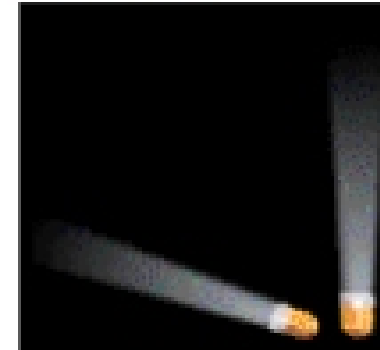
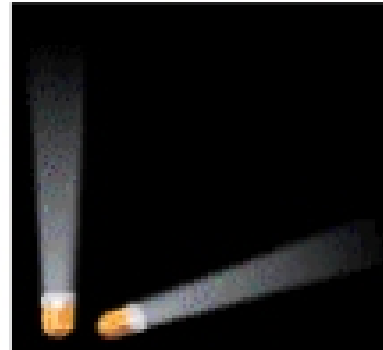


# Dictionaries



- Collection of items.
- Each item is a pair.
  - (key, element)
  - Pairs have different keys.

# Application

- Collection of student records in this class.
  - (key, element) = (student name, linear list of assignment and exam scores)
  - All keys are distinct.
- Collection of in-use domain names.
  - (godaddy.com, owner information)
  - All keys are distinct.

# Dictionary With Duplicates

- Keys are not required to be distinct.
- Word dictionary.
  - Items/pairs are of the form (word, meaning).
  - May have two or more entries for the same word.
    - (bolt, a threaded pin)
    - (bolt, a crash of thunder)
    - (bolt, to shoot forth suddenly)
    - (bolt, a gulp)
    - (bolt, a standard roll of cloth)
    - etc.