2) (5 pts) ALG (Hash Maps)

(a) (3 pts) A set of students' names are stored in a hash table implemented as an array of size 25. Their grades out of 100 are used as input to the hashing function. Suggest one hash function that can be used to store the names. Would your function cause collisions? Explain your answer.

Hash function stores the student's name in the array index score%25.
Hashmap[score%25] = $name_{score}$ **(Grading: 2 pts, note, MANY answers are valid here!!!)**

This function can cause collisions since 2 distinct scores can has to the same index or because two different students can earn the exact same score! **(Grading: 1 pt)**

(b) (2 pts) If the following students have the grades shown, and your hash function given in (a) is used, draw the state of the hash map after these 3 entries are inserted into the table. (Note: No need to show all 25 array slots, just clearly label the index and contents of each of the non-empty array slots.)

Mary 60
Ben 75
Dona 13

Grading: 2 pts for correct response (BASED ON THEIR HASH FUNCTION), 1 pt if some of their answer is correct