The University of New South Wales

COMP2521 Data Structures & Algorithms Final Exam

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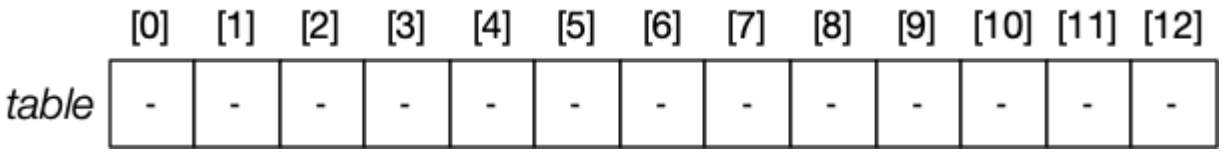
[Q1] [Q2] [Q3] [Q4] [Q5] **[Q6]** [Q7] [Q8]

Question 6 (7 marks)

Consider the following initially empty hash table:



The hash function for this table is *h(k)* = *k* mod *13*. Collisions are resolved using linear probing, but we decide to try to avoid linear probing's clustering problem by using an increment of 5 rather than 1. We call this "smarter linear probing".

a. Show the state of the hash table after each of the following keys is inserted using "smart linear probing".

```
13   2   5   18   15   6   20   26
```

b. Is "smarter linear probing" really "smarter"? Briefly justify your answer.

Instructions:

- Type your answer to this question into the file called `q6.txt`
- Submit via: **`give cs2521 exam_q6 q6.txt`**
  or via: Webcms3 > exams > Final Exam > Submit Q6 > Make Submission

End of Question