Question - 1

Sequential Search ST

SCORE: **20 points**

Implement Get and Put methods for ***Sequential Search Symbol Table*** using ***Singly Linked List***.
Also, maintain the count of keys in Symbol Table with variable `n` for method `size()`.
Make all Unit tests to pass successfully.

Question - 2

Desired binary relations for java equals() method

SCORE: **5 points**

What are the minimum desired properties(binary relations) that must be satisfied by any java method for checking the equality of objects?

- [ ] Identity
- [ ] Asymmetric
- [x] Transitive
- [x] Non-null
- [ ] Irreflexive
- [x] Symmetric
- [ ] Partial Order
- [ ] Quasi-reflexive
- [x] Reflexive

Question - 3

Linear Probing

SCORE: **5 points**

Suppose we are using Hash(k) = 3 * k % 13, and an array of size 13 as a Hash Table, what's the result after putting the below number into the hash table if we use linear probing? (* represent there is no value in the hash table) Number in order: 22 -> 40 -> 36 -> 55 -> 24 -> 27 -> 28

- [ ] * 22 * 40 36 27 * 24 * 55 28 * *
- [ ] 22 * 40 36 27 28 24 * 55 * * * *
- [ ] 22 * 27 36 28 * 24 * 55 * * * *

- [x] * 22 * 40 36 27 28 24 * 55 * * *
- [ ] * 22 * 40 27 36 * 24 * 55 * * *
- [ ] * 22 * 27 36 28 * 24 * * * * *
- [ ] * 22 * 40 36 * * 24 * 55 * * *

Question - 4

Advantage of separate chaining

SCORE: **5 points**

An advantage of separate chaining as an implementation of a hash table over the linear probing (open addressing) scheme is:

- [ ] Space used is less
- [x] Deletion is easier
- [ ] Worst case complexity of search operations is less
- [ ] None of the above