# ICA 3

Name: Hyun Suk (Max) Ryoo

Activity Name: CS 5012: Linear Probing and Chaining In-Class Activity

Computing ID: hr2ee

h(K) = K mod 13

Insert the following keys into the hash tables below, using each conflict resolution method:

18, 41, 22, 44, 59, 32, 31, 73

**Hash Table: Linear Probing**

- h(18) = 18 mod 13 = 5
- h(41) = 41 mod 13 = 2
- h(22) = 22 mod 13 = 9
- h(44) = 44 mod 13 = 5 = 6 (linear probing since 5 is occupied)
- h(59) = 59 mod 13 = 7
- h(32) = 32 mod 13 = 6 = 7 = 8 (linear probing since 6 is occupied and 7 is occupied)
- h(31) = 31 mod 13 = 5 = 6 = 7 = 8 = 9 = 10 (linear probing since 5 is occupied and until 10 every location is occupied)
- h(73) = 73 mod 13 = 8 = 9 = 10 = 11 (linear probing for 8 until resolution at 11)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 41 | | | 18 | 44 | 59 | 32 | 22 | 31 | 73 | |

**Hash Table: Chaining**

- h(18) = 18 mod 13 = 5
- h(41) = 41 mod 13 = 2
- h(22) = 22 mod 13 = 9
- h(44) = 44 mod 13 = 5
- h(59) = 59 mod 13 = 7
- h(32) = 32 mod 13 = 6
- h(31) = 31 mod 13 = 5
- h(73) = 73 mod 13 = 8

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 41 | | | 18<br>44<br>31 | 32 | 59 | 73 | 22 | | | |