CSCI 310 – Data Structures – Spring 2020
HW 11 – Hashing (15 points)

1. For the given Table Sizes, Hash Functions, Keys, and Probing Strategies, give the *first five* table locations probed.

   (a) (3 points) Table Size $= 23$; Key $= 2297$; $hash(x) = x \% Table\ Size$; Linear Probing function.

   (b) (3 points) Table Size $= 29$; Key $= 512$; $hash(x) = x \% Table\ Size$; Quadratic Probing function.

   (c) (3 points) Table Size $= 73$; Key $= 5697$; $hash(x) = x \% Table\ Size$; Probing function $f(i) = i(i+7)(-1)^i$.

   (d) (3 points) Table Size $= 67$; Key $= 1812$; $hash_1(x) = x \% Table\ Size$; $hash_2(x) = R - (x \% R)$; Probing function is Double Hashing.

2. (3 points) Consider hashing with:

   - $hash(x) = x \% TableSize$
   - A table size of 10
   - Quadratic probing

   Show the contents of the hash table after inserting the keys $612, 9278, 4, 212, 613, 815, 1694$.

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What to turn in: This assignment is to be turned in through Blackboard. You can type up your solution using a computer or you can prepare your solution by hand and scan it. The file that gets uploaded to Blackboard ***Must Be A PDF File***.