

**CSCI 310 – Data Structures – Spring 2020**  
**HW 11 – Hashing (25 points)**

1. For the given Table Sizes, Hash Functions, Keys, and Probing Strategies, give the *first five* table locations probed.
  - (a) (5 points) Table Size = 23; Key = 2297;  $hash(x) = x \% Table\ Size$ ; Linear Probing function.
  - (b) (5 points) Table Size = 29; Key = 512;  $hash(x) = x \% Table\ Size$ ; Quadratic Probing function.
  - (c) (5 points) Table Size = 73; Key = 5697;  $hash(x) = x \% Table\ Size$ ; Probing function  $f(i) = i(i+7)(-1)^i$ .
  - (d) (5 points) Table Size = 67; Key = 1812;  $hash_1(x) = x \% Table\ Size$ ;  $hash_2(x) = R - (x \% R)$ ; Probing function is Double Hashing.
2. (5 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.***