to see the effect of the initial hashtable size, change the initialization function to use these two options: (1) Initialize to the next power of two. For example, if n = 1000, the initial capacity will be 1024. (2) Initialize to the good prime in the array given in the code that is larger than n. For example, if n = 1000, the initial capacity is 1543. For each of the two options, run the given stressTest function and report the total number of collisions. Comment on the results.

Size	Power of two	Good prime
100	128 (2^7) = 159	193 = 141
1000	1024 (2^10) = 999	1543 = 1020
10000	16384 (2^14) = 15922	12289 = 8151
100000	131072 (2^17) = 130840	196693 = 132277

to see the effect of the hash function, try the following two hash functions. (1) The hash function given to you in the initial code (the simple one). (2) Your own sophisticated hash function based on your reading in the textbook and your Google search. Run the stressTestfunction with each and report the total number of collisions with each. Comment on the results.

Size	Simple hash function	Sophisticated hash function
100	51	97
1000	1131	974
10000	150487	16231
100000	4894224	68893

To see the effect of the probing function, try both the linear probing and quadratic probing function. Run the stressTest function with each and report the total number of collisions with each. Comment on the results.

Size	Linear probing	Quadratic probing
100	95	97
1000	966	974
10000	16933	16231
100000	69500	68893