Assignment 10 – Hashing

Problem 1. Consider hash table of size 10 and hash function h(x) = x%10. Insert the keys 17, 12, 26, 42, 23, 18, 22, 9, 16, 35 and 15 into the table using linear probing.

Problem 2. Consider a hash table of size 11, and suppose nonnegative integer key values are hashed into the table using the following hash function:

```
int h(int key) {
        int x = (key + 7) * (key + 7);
        x = x / 16;
        x = x + key;
        x = x % 11;
        return x;
}
```

a. Suppose that collisions are resolved by using linear probing.
b. Suppose that collisions are resolved by using quadratic probing, with the probe function $(k^2 + k) / 2$.

Problem 3. Consider a hash table of size 5 and a hash function h(x) = x%5, insert the keys 2, 7, 6, 12, 23, 11, 22, 19, 1, 3, 5, 32, 4,9 and 15 into the table using separate chaining for collision resolution.