

21BCE7371
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DSA ASSIGNMENT -8

```
import java.util.*;

public class hash{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter 10 Keys: ");
        int[] ar=new int[10];
        ArrayList<Integer> al = new ArrayList<>();
        ArrayList<String> hm=new ArrayList<>();
        ArrayList<Integer> al2=new ArrayList<>();
        ArrayList<String> hm2=new ArrayList<>();
        for(int i=0;i<10;i++){
            ar[i]=sc.nextInt();
            int cnt=1;
            for(int j=0;j<10;j++){
                int pos=((2*ar[i]+3)+j)%10;
                if(al.contains(pos)){
                    al.add(pos);
                    cnt++;
                }
                else{
                    al.add(pos);
                    String s=ar[i]+" -> "+pos+" -> "+cnt;
                    hm.add(s);
                    break;
                }
            }
        }
        int c=1;
        for(int j=0;j<10;j++){
            int pos=((2*ar[i]+3)+(j*j))%10;
            if(al2.contains(pos)){
                al2.add(pos);
                c++;
            }
            else{
                al2.add(pos);
                String s=ar[i]+" -> "+pos+" -> "+c;
```

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        hm2.add(s);
        break;
    }
}
}
System.out.println("");
System.out.println("LINEAR PROBING: ");
System.out.println("KEY -> LOCATION -> PROBE:");
for(int i=0;i<hm.size();i++){
    System.out.println(hm.get(i));
}
System.out.println();
System.out.println("QUADRATIC PROBING: ");
System.out.println("KEY -> LOCATION -> PROBE:");
for(int i=0;i<hm2.size();i++){
    System.out.println(hm2.get(i));
}
sc.close();
}
}

```

OUTPUT

```

PS C:\Users\krish\Documents\java>
2 -> 8 -> 2
3 -> 0 -> 2
69 -> 4 -> 4

QUADRATIC PROBING:
KEY -> LOCATION -> PROBE:
8 -> 9 -> 1
7 -> 7 -> 1
9 -> 1 -> 1
4 -> 2 -> 2
5 -> 3 -> 1
6 -> 5 -> 1
1 -> 6 -> 2
2 -> 8 -> 2
3 -> 0 -> 2
PS C:\Users\krish\Documents\java> 

```