**TASK # 1:**

Generate 4 digits random key. Calculate hash function against key by using all three methods

SOURCE CODE:

import java.util.Arrays;

public class hashdivision {

public static void main(String[] args)

{ int i,j,list=14;

int remainder []=new int [4];

int reverse []=new int [4];

int f[]=new int[4];

int g[]=new int[4];

int h[]=new int[4];

int b[]=new int[4];

int e[]=new int[4];

int c[]=new int[4];

int d[]=new int[4];

int keys[]={4234,5678,4182,6858};

System.out.println("Division method");

for(i=0;i<keys.length;i++){

d[i]=keys[i]%list; }

System.out.println(Arrays.toString(d));

System.out.println("Mid Square Method");

System.out.println("Keys"+Arrays.toString(keys));

for(i=0;i<keys.length;i++){

b[i]=keys[i]\*keys[i]; }

System.out.println("Square"+Arrays.toString(b));

for(i=0;i<keys.length;i++){

c[i]=b[i]%100000;

e[i]=c[i]/1000; }

System.out.println(Arrays.toString(e));

System.out.println("Folding Method without Reversing");

for(i=0;i<keys.length;i++){

f[i]=keys[i]/100;

g[i]=keys[i]%100;

h[i]=f[i]+g[i]; }

System.out.println(Arrays.toString(h));

System.out.println("Folding Method Reversing");

for(i=0;i<keys.length;i++){

f[i]=keys[i]/100;

g[i]=keys[i]%100;

while(g[i]!=0){

remainder[i]=g[i]%10;

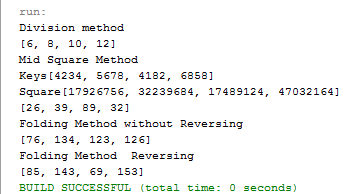
reverse[i]=reverse[i]\*10+ remainder[i];

g[i]=g[i]/10; }

h[i]=f[i]+reverse[i]; }

System.out.println(Arrays.toString(h)); }}

OUTPUT:



**TASK # 2:**

**4- Digit**

**Hash function == Array index**

**Collision**

**Hash Function**

**By Division**

**Collision by linear probing**

SOURCE CODE:

import java.util.Scanner;

import java.util.Arrays;

public class probing {

public static void main(String[] args) {

int key[]={89,18,49,58,9,29};

int list=7;

System.out.print(" Key = ");

System.out.println(Arrays.toString(key));

for(int i=0;i<key.length;i++)

{key[i]=key[i]%list;}

System.out.println(Arrays.toString(key));

System.out.println("After Resolving Collisin With Linear Probing");

for(int i=0;i<key.length-1;i++){

if(key[i]==key[i+1]) {

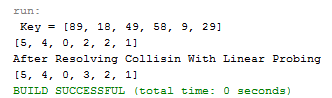
key[i]=key[i+1]+1;}

else

key[i]=key[i];}

System.out.println(Arrays.toString(key)); }}

OUTPUT:

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