TITLE: HASHING

AIM: To implement linear probing

Code:

```
import
java.util.Scanner;  class
Main
{ static int a[],n,c=0; public static
void main(String args[])
{ int ch;
System.out.println("enter the size of the hash table");
Scanner sc=new Scanner(System.in); n=sc.nextInt();
a=new int[n]; for(int i=0;i<n;i++)
{ a[i]=-1; }
do
{ System.out.println("Hashing");
System.out.println("1.insert");
System.out.println("2.Search");
System.out.println("3.Display");
System.out.println("4.Delete");
System.out.println("enter ur choice");
ch=sc.nextInt(); switch(ch) { case
1:insert(); c++; break; case 2:Search();
break; case 3: display(); break; case
4: delete(); break; case
5:System.exit(0);
}
```

```
}while(ch!=5);
}
public static void insert()
{ int x,key,i,index;
System.out.println("Enter the number to insert");
Scanner sc=new Scanner(System.in);
x=sc.nextInt(); key=x%n;
for(i=0;i<n;i++) {
index=(key+i)%n;
if(a[index]==-1)

{ a[index]=x; break;
}
} if(i>=n)
{ System.out.println("Array is full cannot insert");
}
}
public static void Search()
{ int x,key,f=0,i,index;
System.out.println("Enter the element to Search");
Scanner sc=new Scanner(System.in);
x=sc.nextInt(); key=x%n;
for(i=0;i<n;i++) {
index=(key+i)%n;
if(a[index]==x) {
f=1; break;
} } if(f==1)
{ System.out.println("Element found");
```

```
}
else
{ System.out.println("Element not found");
} }
public static void display()
{ for(int i=0;i<n;i++)
{ System.out.println(a[i]);
} }
public static void delete()
{ int x,key,index,i=0;
System.out.println("Enter the number to delete");
Scanner sc=new Scanner(System.in);
x=sc.nextInt(); key=x%n;
for(i=0;i<n;i++) {
index=(key+i)%n;
if(a[index]==x)
{ a[index]=-1;
System.out.println("element deleted is"+x); break;
}
} }}
```

OUTPUT:

```
enter the size of the hash table
                                                                5
                                                          Hashing
                                                         1.insert
2.Search

3.Display
                                                         4.Delete
                                                  enter ur choice
                                                                1
Enter the number to insert
```

[redacted]

```
56

Hashing
1.insert
2.Search
3.Display
4.Delete
enter ur choice

1
Enter the number to insert
36
Hashing
1.insert

2.Search

3.Display
4.Delete
enter ur choice
1
Enter the number to insert
68

Hashing
1.insert
2.Search
3.Display
4.Delete
enter ur choice

1
Enter the number to insert
25
Hashing
1.insert

2.Search
                                                        3.Display
```

```
                                                    4.Delete
                                                enter ur choice
1


                                Enter the number to insert
47

Hashing
                                                    1.insert
                                                    2.Search
                                                   3.Display
                                                    4.Delete
enter ur choice

3
                                                           25
                                                           56
                                                           36
68

47
```