Worksheet-3

Subject Name: Advanced Internet Programming
Subject Code: CAP716/20CAP726

UID: 20MCA1232 **Section/Group:2-A**

Semester: 1 **Date of Performance: 28.09.20**

Aim/Overview of the practical: Create a Collection "ContactList" using HashMap to store name and phone number of contacts added. The program should use appropriate generics (String, Integer).

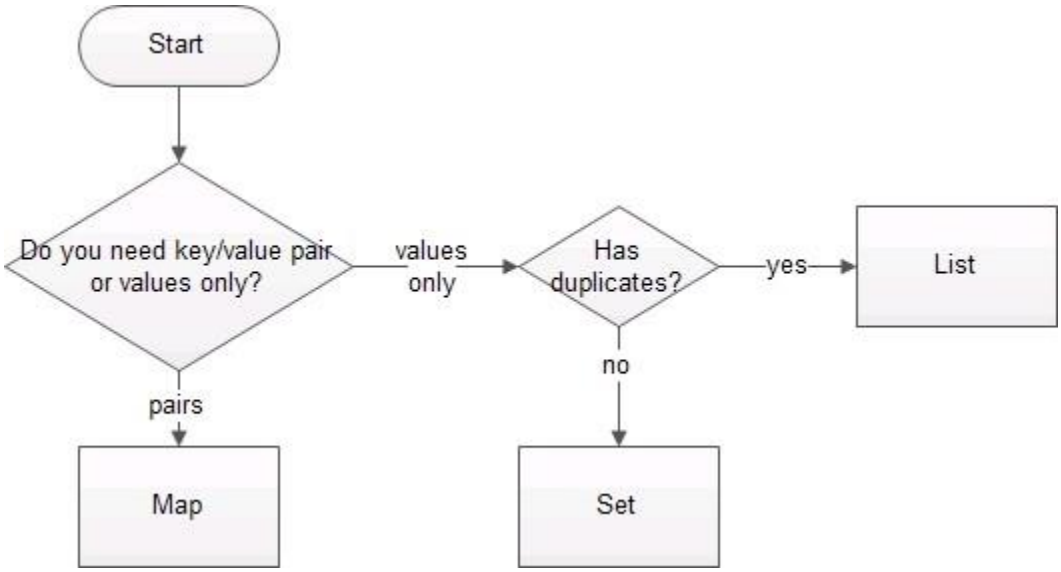
Task to be done:

a) Check if a particular key exists or not.

b) Check if a particular value exists or not.

c) Use Iterator to loop through the map.

Algorithm/Flowchart:



Dataset:

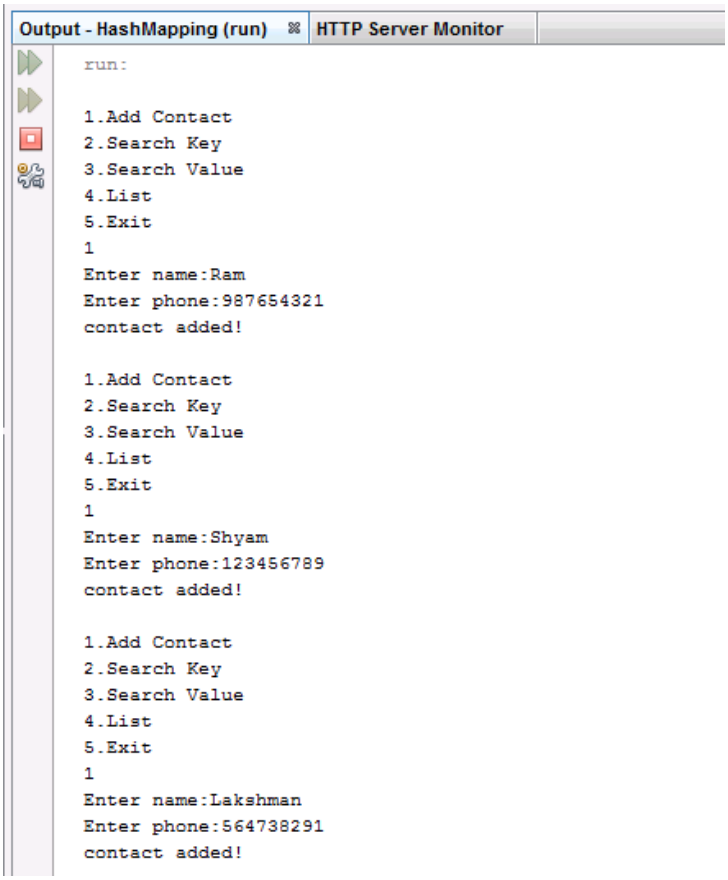
Name	**Contact**
Ram	987654321
Shyam	123456789
Lakshman	564738291

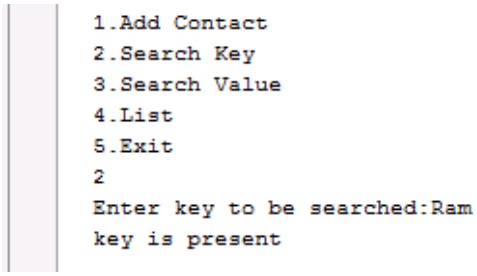
Code for experiment:

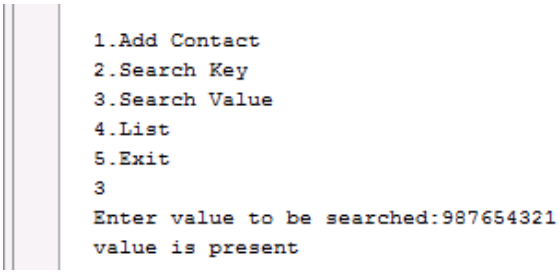
```
public class HashMapping {

    HashMap<String,Long>contactList=new HashMap<String,Long>();
    public static void main(String[] args) {
       Scanner scan=new Scanner(System.in);
       HashMapping hm=new HashMapping();
       char ch='n';
       int op=0;

       while(ch=='n')
       {
           System.out.println("");
           System.out.println("1.Add Contact \n2.Search Key \n3.Search Value \n4.List
\n5.Exit");
            op=scan.nextInt();
           switch(op)
           {
               case 1:
                       System.out.print("Enter name:");
                       String name=scan.next();
                       System.out.print("Enter phone:");
                       long phone=scan.nextLong();
                       hm.addContact(name, phone);
                       System.out.println("contact added!");
                   break;
               case 2:
                        System.out.print("Enter key to be searched:");
                        String key=scan.next();
                        if(hm.searchKey(key))
                            System.out.println("key is present");
                        else
                            System.out.println("key is not present");
                   break;
               case 3:
                            System.out.print("Enter value to be searched:");
                              long value=scan.nextLong();
                            if(hm.searchValue(value))
                                System.out.println("value is present");
                            else
                                System.out.println("value is not present");
                   break;
               case 4:

                        System.out.println("Contact List");
                        hm.list();
                   break;
               case 5:  ch='y';
                   break;
               default:
                   System.out.println("choose from above options");
           }
       }

    }

    //adding contact
    public void addContact(String name,Long phone)
```

```
    {
        contactList.put(name, phone);
    }

    //searching key
    public boolean searchKey(String key)
    {
        boolean flag=false;
        if(contactList.get(key)!=null)
            flag=true;

        return flag;
    }

    //searching value
    public boolean searchValue(Long value)
    {
         boolean flag=false;
        List<Long> values = new ArrayList<>(contactList.values());
        for(int i=0;i<values.size();i++)
        {

            if(Objects.equals(values.get(i), value))
            {
                flag=true;
                break;
            }
        }

        return flag;
    }

    //all key-value pairs
     public void list()
    {
        for(Map.Entry m:contactList.entrySet()){
           System.out.println(m.getKey()+" "+m.getValue());
          }
    }
}
```

Result:


Output - HashMapping (run)
HTTP Server Monitor
run:
1.Add Contact
2.Search Key
3.Search Value
4.List
5.Exit
1
Enter name:Ram
Enter phone:987654321
contact added!
1.Add Contact
2.Search Key
3.Search Value
4.List
5.Exit
1
Enter name:Shyam
Enter phone:123456789
contact added!
1.Add Contact
2.Search Key
3.Search Value
4.List
5.Exit
1
Enter name:Lakshman
Enter phone:564738291
contact added!


1.Add Contact
2.Search Key
3.Search Value
4.List
5.Exit
2
Enter key to be searched:Ram
key is present


1.Add Contact
2.Search Key
3.Search Value
4.List
5.Exit
3
Enter value to be searched:987654321
value is present

Learning outcomes:

1. Creating HashMaps.
2. Inserting data into HashMaps.
3. Accessing key/values.