

1. Write Java code to define List. Insert 5 floating point numbers in List, and using an iterator, find the sum of the numbers in List.

```

6 Created By
7 akaanksha
8 on 21/02/20
9 */
10 //Write Java code to define List . Insert 5 floating point numbers in List, and using an iterator, find the sum of the numbers
11 public class Q1_List {
12     public static void main(String[] args) {
13         Scanner sc=new Scanner(System.in);
14         float element;
15         ArrayList<Float> l1= new ArrayList<Float>();
16         System.out.println("enter 5 element");
17         for (int i = 0; i <5; i++) {
18             element=sc.nextFloat();
19             l1.add(element);
20         }
21         float sum=0f;
22         Iterator<Float> iterator = l1.iterator();
23         while(iterator.hasNext())
24         {
25             sum=sum+iterator.next();

```

Run: Q1_List

```

enter 5 element
1.1
1.1
1.1
1.1
1.1
sum of list is : 5.5
Process finished with exit code 0

```

2. Write a method that takes a string and returns the number of unique characters in the string.

```

4
5
6 Created By
7 akaanksha
8 on 21/02/20
9 */
10 //Write a method that takes a string and returns the number of unique characters in the string.
11 public class Q2_UniqueChar {
12     public static void main(String[] args) {
13         String s1;
14         System.out.println("enter string");
15         Scanner sc=new Scanner(System.in);
16         s1=sc.nextLine();
17         String s2[]=s1.split(" ");
18         Set<String> set1 = new HashSet<String>();
19         for (int i = 0; i < s2.length; i++) {
20             set1.add(s2[i]);
21         }
22         System.out.println("no. of unique character in string :"+ set1.size());
23     }

```

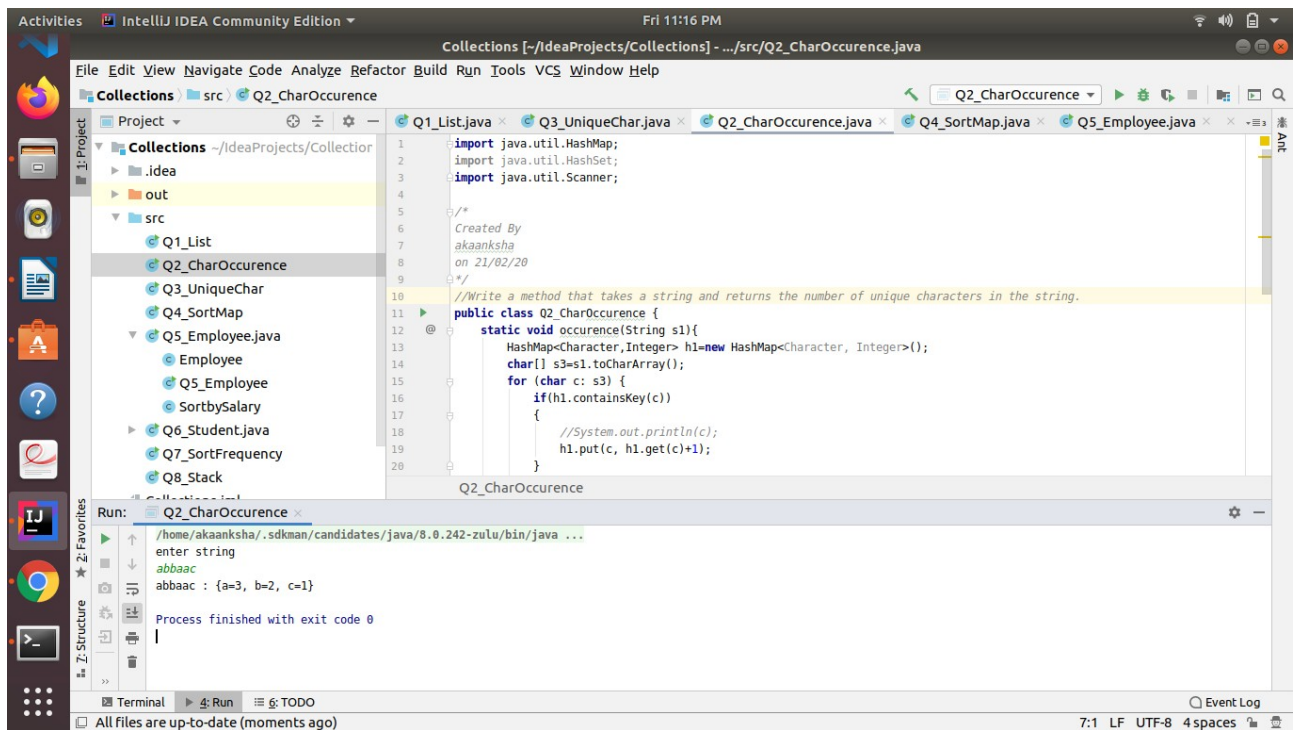
Run: Q2_UniqueChar

```

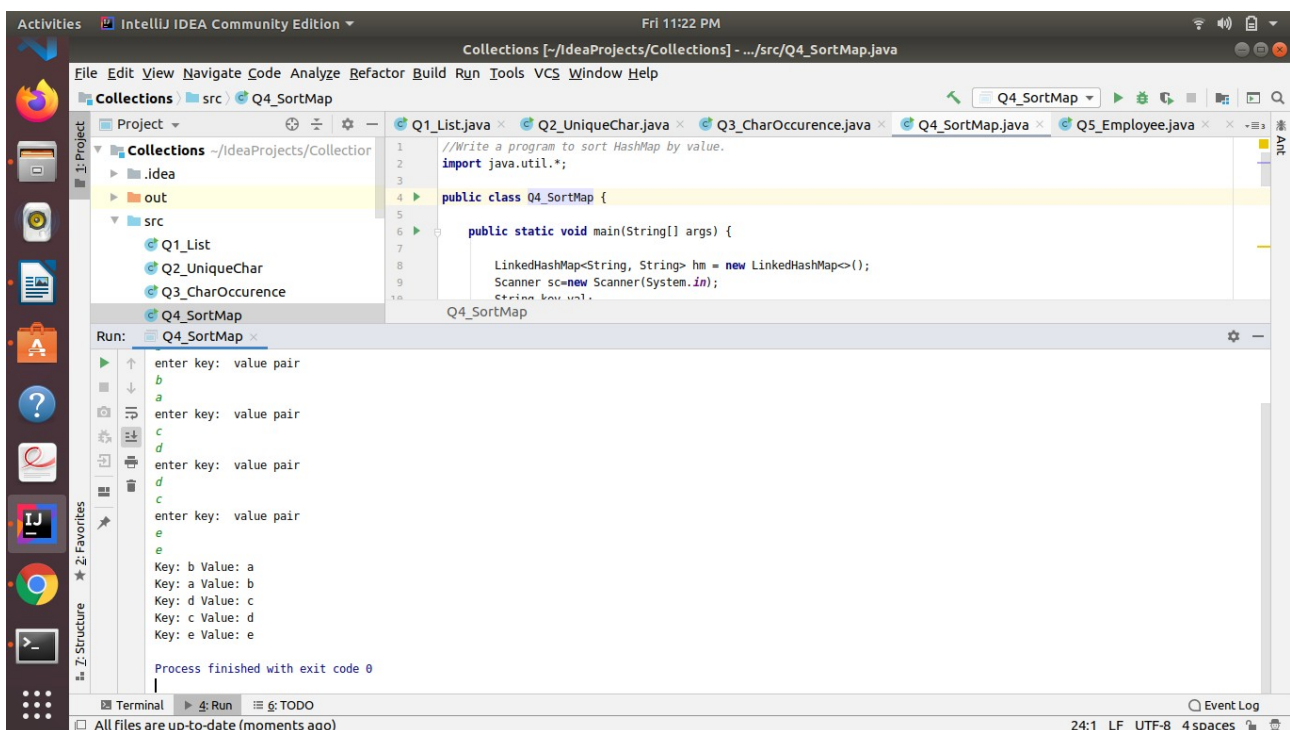
/home/akaanksha/.sdkman/candidates/java/8.0.242-zulu/bin/java ...
enter string
aabbc
no. of unique character in string :3
Process finished with exit code 0

```

3. Write a method that takes a string and print the number of occurrence of each character characters in the string.



4. Write a program to sort HashMap by value.



5. Write a program to sort Employee objects based on highest salary using Comparator. Employee class{ Double Age; Double Salary; String Name

```

1  if(b.salary < a.salary)
2      return 1;
3  else
4      return -1;
5  }
6  }
7
8  class Q5_Employee {
9      public static void main(String[] args) {
10         ArrayList<Employee> ar = new ArrayList<Employee>();
11         ar.add(new Employee(20, "akaanksha1", 10000));
12         ar.add(new Employee(30, "akaanksha2", 30000));
13         ar.add(new Employee(40, "akaanksha3", 20000));
14
15         System.out.println("Unsorted");
16         for (int i = 0; i < ar.size(); i++)
17             System.out.println(ar.get(i));
18     }
19 }
20
21 // Output:
22 Unsorted
23 age = 20 name= akaanksha1 salary 10000
24 age = 30 name= akaanksha2 salary 30000
25 age = 40 name= akaanksha3 salary 20000
26
27 Sorted by salary
28 age = 30 name= akaanksha2 salary 30000
29 age = 40 name= akaanksha3 salary 20000
30 age = 20 name= akaanksha1 salary 10000
31
32 Process finished with exit code 0

```

6. Write a program to sort the Student objects based on Score, if the score are same then sort on First Name. Class Student { String Name; Double Score; Double Age

```

1  /*
2   * Created By
3   * akaanksha
4   * on 21/02/20
5   */
6  //Write a program to sort the Student objects based on Score , if the score are same then sort on First Name . Class Student
7  import java.util.ArrayList;
8  import java.util.Collections;
9  import java.util.Comparator;
10
11 class Student
12 {
13     int age,score;
14     String name;
15 }
16
17 // Output:
18 Unsorted
19 age = 20 name= akaanksha1 salary 100
20 age = 30 name= john salary 60
21 age = 30 name= akaanksha2 salary 60
22 age = 40 name= akaanksha4 salary 80
23
24 Sorted by score
25 age = 20 name= akaanksha1 salary 100
26 age = 40 name= akaanksha4 salary 80
27 age = 30 name= akaanksha2 salary 60
28 age = 30 name= john salary 60
29
30 Process finished with exit code 0

```

7. Print the elements of an array in the decreasing frequency if 2 numbers have same frequency then print the one which came first.


```

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Collections [-/IdeaProjects/Collections] - .../src/Q7_SortFrequency.java
Project src
  Q1_List
  Q2_UniqueChar
  Q3_CharOccurrence
  Q4_SortMap
  Q5_Employee.java
  Employee
  Q5_Employee
  SortbySalary
  Q6_Student.java
  Q7_SortFrequency
Run: Q7_SortFrequency
/home/akaanksha/.sdkman/candidates/java/8.0.242-zulu/bin/java ...
3
1
2
2
1 2 2
elements with frequency is {1=1, 2=2}
Sorted Array Elements In Descending Order Of their Frequency :
[2, 2, 1]
Process finished with exit code 0

```

8.Design a Data Structure SpecialStack that supports all the stack operations like push(), pop(), isEmpty(), isFull() and an additional operation getMin() which should return minimum element from the SpecialStack. (Expected complexity $O(1)$)

```

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Collections [-/IdeaProjects/Collections] - .../src/Q8_Stack.java
Project src
  Q1_List
  Q2_UniqueChar
  Q3_CharOccurrence
  Q4_SortMap
  Q5_Employee.java
  Employee
  Q5_Employee
  SortbySalary
  Q6_Student.java
  Q6_Employee
  SortbyScore
  Student
  Q7_SortFrequency
  Q8_Stack
  Collections.iml
  External Libraries
  Scratches and Consoles
Run: Q8_Stack
/home/akaanksha/.sdkman/candidates/java/8.0.242-zulu/bin/java ...
stack==[10, 2, 3]
min element 2
stack==[10, 2, 3, 1]
min element 1
Process finished with exit code 0

```