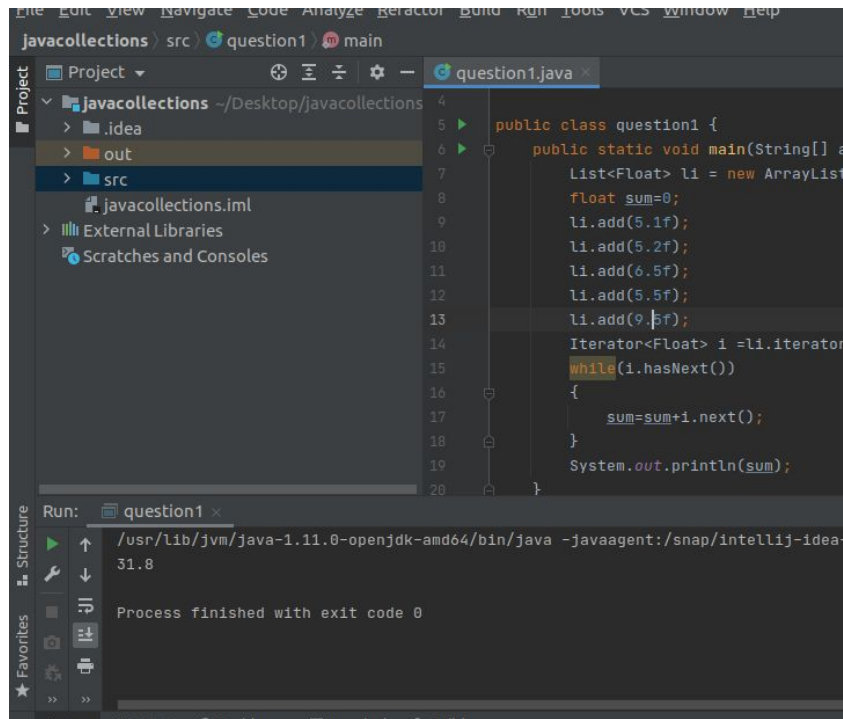


1. Write Java code to define List . Insert 5 floating point numbers in List, and using an iterator, find the sum of the numbers in List.

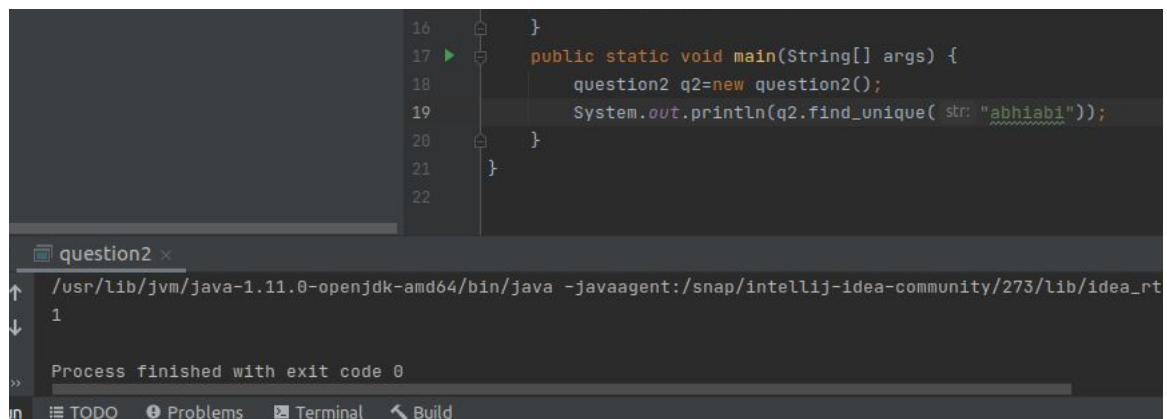


The screenshot shows the IntelliJ IDEA IDE with a project named 'javacollections'. The 'src' directory contains a file 'question1.java'. The code in 'question1.java' defines a class 'question1' with a 'main' method. In the 'main' method, a 'List<Float>' named 'l1' is created and populated with five floating-point numbers: 5.1f, 5.2f, 6.5f, 5.5f, and 9.3f. An 'Iterator<Float>' named 'i' is obtained from 'l1.iterator()'. A 'while' loop is used to iterate through the list, calculating the sum of the elements. The sum is printed to the console using 'System.out.println(sum)'. The 'Run' output shows the sum is 31.8.

```
public class question1 {  
    public static void main(String[] args) {  
        List<Float> l1 = new ArrayList<>();  
        float sum=0;  
        l1.add(5.1f);  
        l1.add(5.2f);  
        l1.add(6.5f);  
        l1.add(5.5f);  
        l1.add(9.3f);  
        Iterator<Float> i =l1.iterator();  
        while(i.hasNext())  
        {  
            sum=sum+i.next();  
        }  
        System.out.println(sum);  
    }  
}
```

Run: question1 x  
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/273/lib/idea\_rt.jar 31.8  
Process finished with exit code 0

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



The screenshot shows the IntelliJ IDEA IDE with a project named 'javacollections'. The 'src' directory contains a file 'question2.java'. The code in 'question2.java' defines a class 'question2' with a 'find\_unique' method. The 'main' method creates an instance of 'question2' and calls 'find\_unique' with the string 'abhiabi'. The output shows the number of unique characters is 1.

```
public class question2 {  
    public static void main(String[] args) {  
        question2 q2=new question2();  
        System.out.println(q2.find_unique( str: "abhiabi"));  
    }  
}
```

question2 x  
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/273/lib/idea\_rt.jar 1  
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.

```
javaCollections.iml 21 public static void main(String[] args) {
External Libraries 22     question3 q3=new question3();
atches and Consoles 23     q3.getOcc( str: "abhishek bhardwaj");

question3 x
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/2
Char:   Count: 1
Char: a Count: 3
Char: b Count: 2
Char: r Count: 1
Char: s Count: 1
Char: d Count: 1
Char: e Count: 1
Char: w Count: 1
Char: h Count: 3
Char: i Count: 1
Char: j Count: 1
Char: k Count: 1
```

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

```
question1 29 List<Employee> l=new ArrayList<Employee>();
question2 30 l.add(new Employee( Name: "Abhishek", Salary: 80000.12, Age: 28));
question3 31 l.add(new Employee( Name: "Rakesh", Salary: 34000.213, Age: 23));
question4.java 32 l.add(new Employee( Name: "Shiva", Salary: 65000.12, Age: 30));
javaCollections.iml 33 l.add(new Employee( Name: "Ram", Salary: 89999.12, Age: 35));
External Libraries 34 Collections.sort(l, new SortbySal());
atches and Consoles 35 System.out.println(l);
36 System.out.println("highest salary is: " + l.get(l.size()-1).Salary);
37 }
38 }
39

question4 x
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/273/lib/idea_rt.jar=40865:/snap/intellij-idea-community/273/bin/java -Didea.config.path=/snap/intellij-idea-community/273/config -Didea.system.path=/snap/intellij-idea-community/273/system
[Name: Rakesh Age: 23.0 Salary: 34000.213, Name: Shiva Age: 30.0 Salary: 65000.12, Name: Abhishek Age: 28.0 Salary: 80000.12, Name: Ram Age: 35.0 Salary: 89999.12]
highest salary is: 89999.12

Process finished with exit code 0
```

5. 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

```
question4.java
question5.java
javacollections.iml
External Libraries
atches and Consoles

27 public class question5 {
28     public static void main(String[] args) {
29         List<Student> l=new ArrayList<Student>();
30         l.add(new Student( Name: "bansal", Score: 50, Age: 23.2));
31         l.add(new Student( Name: "amit", Score: 50, Age: 24));
32         l.add(new Student( Name: "ravi", Score: 45, Age: 22.4));
33         l.add(new Student( Name: "ram", Score: 55, Age: 24.6));
34         Collections.sort(l, Comparator.comparing(Student::getScore)
35             .thenComparing(Student::getName));
36         System.out.println(l);
    }
}

question5 x
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -javaagent:/snap/intellij-idea-community/273/lib/idea_rt.jar=39961:
[Name: ravi Age: 22.4 Score: 45.0
, Name: amit Age: 24.0 Score: 50.0
, Name: bansal Age: 23.2 Score: 50.0
, Name: ram Age: 24.6 Score: 55.0
]
```

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

```
Val: 7 Count: 2
Val: 9 Count: 1
[2=2, 4=3, 5=1, 7=2, 9=1]
Val: 4 Count: 3
Val: 2 Count: 2
Val: 7 Count: 2
Val: 5 Count: 1
Val: 9 Count: 1

Run TODO Problems Debug Terminal Build
```

7. 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  $O(1)$ )

```
question7_ x
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java
Stack elements are: [12, 21, 2, 1, 5]
Stack is Full
Minimum element is 1
Popped Element 5
Stack elements are: [12, 21, 2, 1]
Popped Element 1
Minimum element is 2

Process finished with exit code 0
```

8. Write a program to format date as example "21-March-2016"

```
/usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java
formatted date is: 18-FEBRUARY-2021

Process finished with exit code 0
```

9. Write a program to display times in different country format.

```
question9 x
Jueves, 18 de febrero de 2021
torsdag 18. februar 2021
naasaande 18 colte 2021
خميس ٢٠٢١ فيبروري ١٨
Alaámisi, 18 Arát 2021
சனம் 18 ஸ்பெட்டிம்பர் 2021 9/90
गुरुवार 18 फेब्रुवारी 2021
sónda melú ményi 18 ngon bē 2021
18 Februari 2021
000000000000, 18 000000000000, 2021
Yaou 18 C'hwevrer 2021

Run TODO Problems Debug
```