Group A

1. Given the following Java program:

```
import java. util.*;
public class Main
{
public static void main(String[] args) {
List num = new ArrayList(Arrays.asList(23, 16, 14, 33, 19, 6, 1));
System.out.println("List is "+num);
}
}
```

(a) Give the index values of all the odd numbers assuming zero-based indexing

Ans: the odd numbers are 0,3,4,5.

(b) How many elements would be looked at when the list is traversed (from start to finish) until the value 19 was found?

Ans: When the list is from start to finish until the value 19 was found to be '2'.

2. Which of the following lists are syntactically correct in Java?

Try them out to see if you were correct.

(a) List num = new ArrayList(Arrays.asList(1, 2, 3, 'four'));
(b) List num = new ArrayList(Arrays.asList(1, 2, [3, 4]));

Ans: correct list in JAVA is 'a'.

3. Perform a series of list operations on the following list:

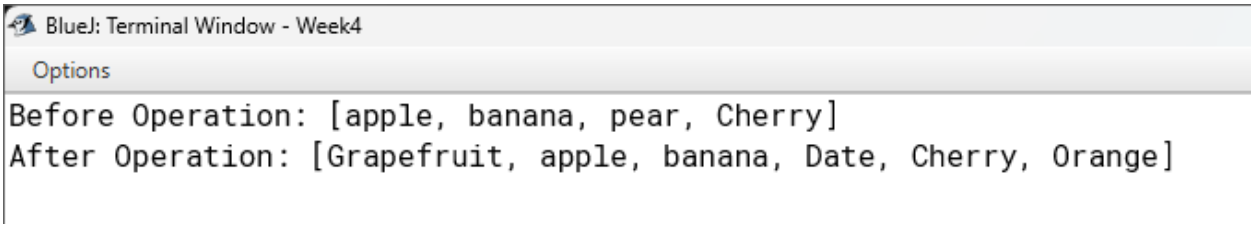
List fruit = new ArrayList (Arrays.asList('apple', 'banana', 'pear', 'cherry'));

to produce this updated list:

['Grapefruit', 'banana', 'Date', 'cherry', 'Orange']

Ans:

```
import java.util.*;
public  class GAQ1{
    public static void main(String [] args){
        List<String> list = new ArrayList<String>();
        list.add("apple");
        list.add("banana");
        list.add("pear");
        list.add("Cherry");
        System.out.println("Before Operation: " + list);
        list.add(0,"Grapefruit");
        list.add(5,"Orange");
        list.set(3,"Date");
        System.out.println("After Operation: "+list);

    }

}
```

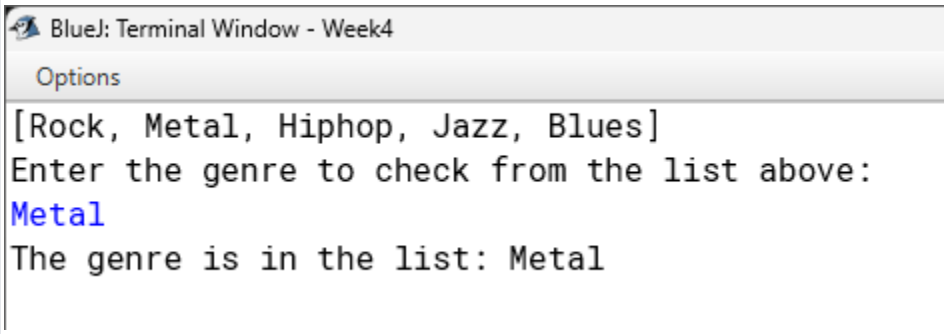


Group B

1. Write a program to find out whether a given integer is present in an array or not.

Ans:

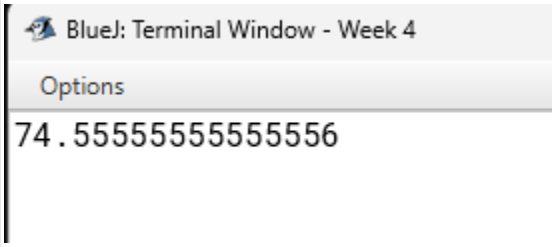
```java
import java.util.*;
import java.util.Scanner;
public class GBQ1{
    public static void main(String [] args){
        List<String> list = new ArrayList<String>();
        list.add("Rock");
        list.add("Metal");
        list.add("Hiphop");
        list.add("Jazz");
        list.add("Blues");
        System.out.println(list);
        System.out.println("Enter the genre to check from the list above: ");
        Scanner in= new Scanner(System.in);
        String G = in.nextLine();

        if (list.contains(G)){
            System.out.println("The genre is in the list: "+ G);
        }else {
            System.out.println("There no such Genre mentioned");
        }
    }
}
```



2. Calculate the average marks from an array containing marks of all students in physics using a for-each loop.

Ans:

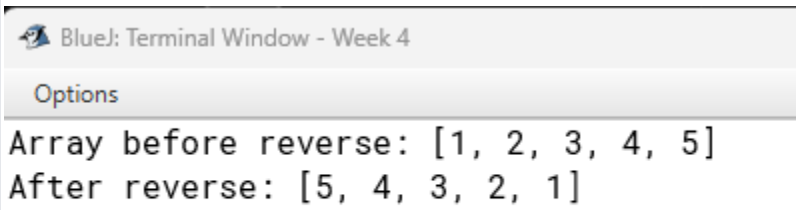
```java
class GBQ2{

    static double average(int a[], int n)
    {

        int sum = 0;

        for (int i = 0; i < n; i++)
            sum += a[i];

        return (double)sum / n;
    }


    public static void main (String[] args)
    {

        int arr[] = {65,82,73,49,52,86,97,88,79};
        int n = arr.length;

        System.out.println(average(arr, n));
    }
}
```



3. Write a Java program to reverse an array.

Ans:

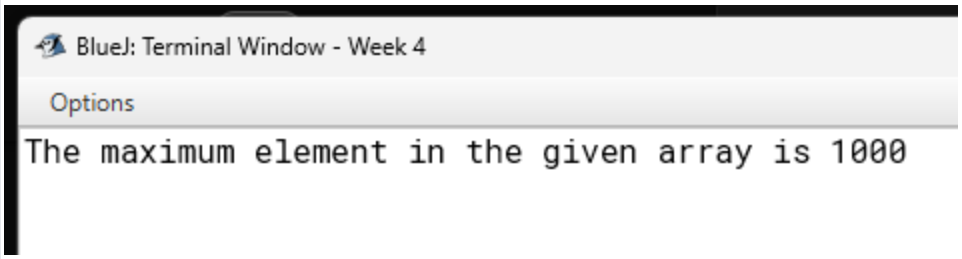
```java
import java.util.*;
public class GBQ3 {
    static void reverse(Integer a[])
    {
        System.out.println("Array before reverse: "+ Arrays.asList(a));
        Collections.reverse(Arrays.asList(a));
        System.out.println("After reverse: "+ Arrays.asList(a));
    }

    public static void main(String[] args)
    {
        Integer [] arr = {1, 2, 3, 4, 5};
        reverse(arr);
    }
}
```



4. Write a Java program to find the maximum element in an array.

Ans:

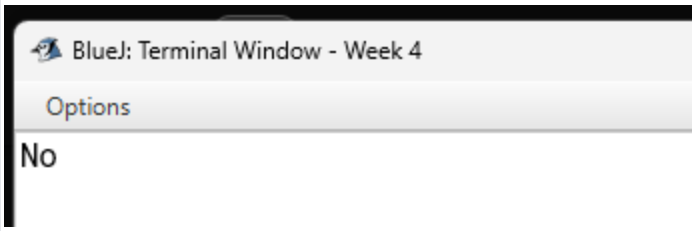
```java
import java.util.Arrays;

public class GBQ4 {
    public static void main(String[] args){
        int arr[] = {10, 324, 45, 950, 1000};
        int max = Arrays.stream(arr).max().getAsInt();
        System.out.println("The maximum element in the given array is " + max);
    }

}
```



5. Write a Java program to find whether an array is sorted or not.

Ans:

```java
class GBQ5 {

    static int SortedOrNot(int arr[], int n)
    {

        if (n == 1 || n == 0)
            return 1;


        if (arr[n - 1] < arr[n - 2])
            return 0;


        return SortedOrNot(arr, n - 1);
    }


    public static void main(String[] args)
    {
        int arr[] = { 220, 23, 23, 45, 78, 88 };
        int n = arr.length;
        if (SortedOrNot(arr, n) != 0)
            System.out.println("Yes");
        else
            System.out.println("No");
    }
}
```

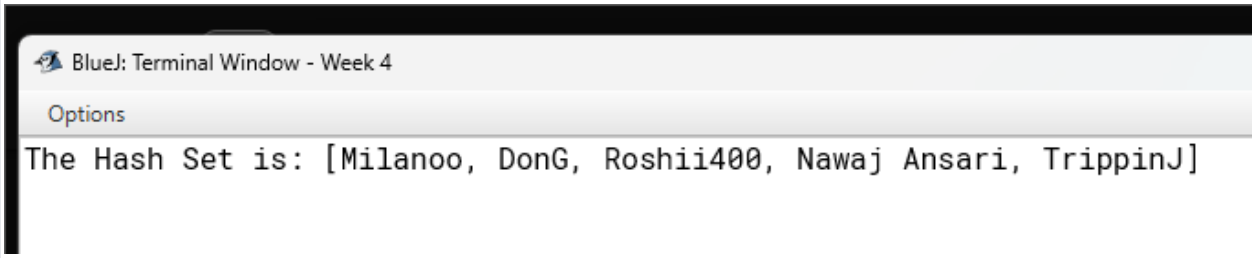


Group C

1. Write a Java program to append the specified element to the end of a hash set.

Ans:

```java
import java.util.HashSet;
public class GCQ1{
    public static void main(String [] args){
        HashSet<String> list = new HashSet<String>();
        list.add("DonG");
        list.add("Roshii400");
        list.add("Milanoo");
        list.add("TrippinJ");
        list.add("Nawaj Ansari");

        System.out.println("The Hash Set is: "+list);

    }
    }
```



2. Write a Java program to compare two sets and retain elements which are same on both sets.

Ans:

GCQ2 - Week 4

Class Edit Tools Options

GCQ2 ×

Compile Undo Cut Copy Paste Find... Close

```java
import java.util.HashSet;
public class GCQ2{
    public static void main(String [] args){
        HashSet<String> list1 = new HashSet<String>();
        list1.add("DonG");
        list1.add("Roshii400");
        list1.add("Milanoo");
        list1.add("TrippinJ");
        list1.add("Nawaj Ansari");

        System.out.println("The Hash Set is: "+list1);
        HashSet<String> list2 = new HashSet<String>();
        list2.add("DonG");
        list2.add("Roshii400");
        list2.add("Milanoo");
        list2.add("Retro");
        list2.add("Lost");

        System.out.println("The Hash Set is: "+list2);
        list1.retainAll(list2);
        System.out.println("Hashset content after retaining: ");
        System.out.println(list1);

    }
    }
```

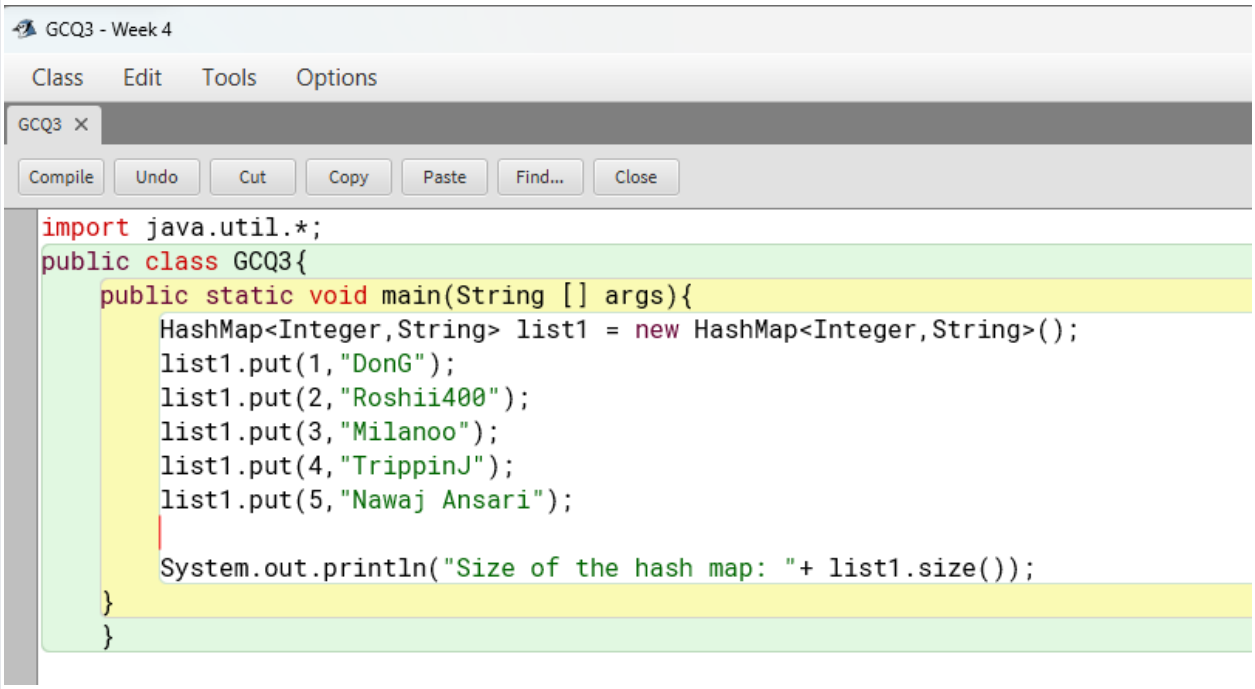
BlueJ: Terminal Window - Week 4

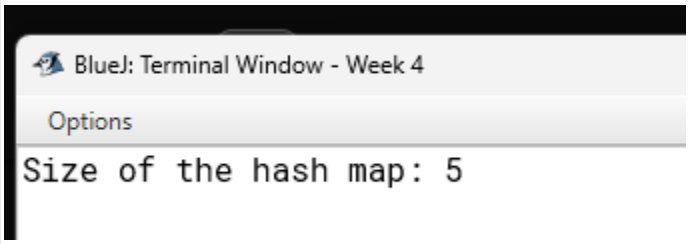
Options

```
The Hash Set is: [Milanoo, DonG, Roshii400, Nawaj Ansari, TrippinJ]
The Hash Set is: [Lost, Milanoo, DonG, Roshii400, Retro]
Hashset content after retaining:
[Milanoo, DonG, Roshii400]
```

3. Write a Java program to count the number of key-value mappings in a hash table

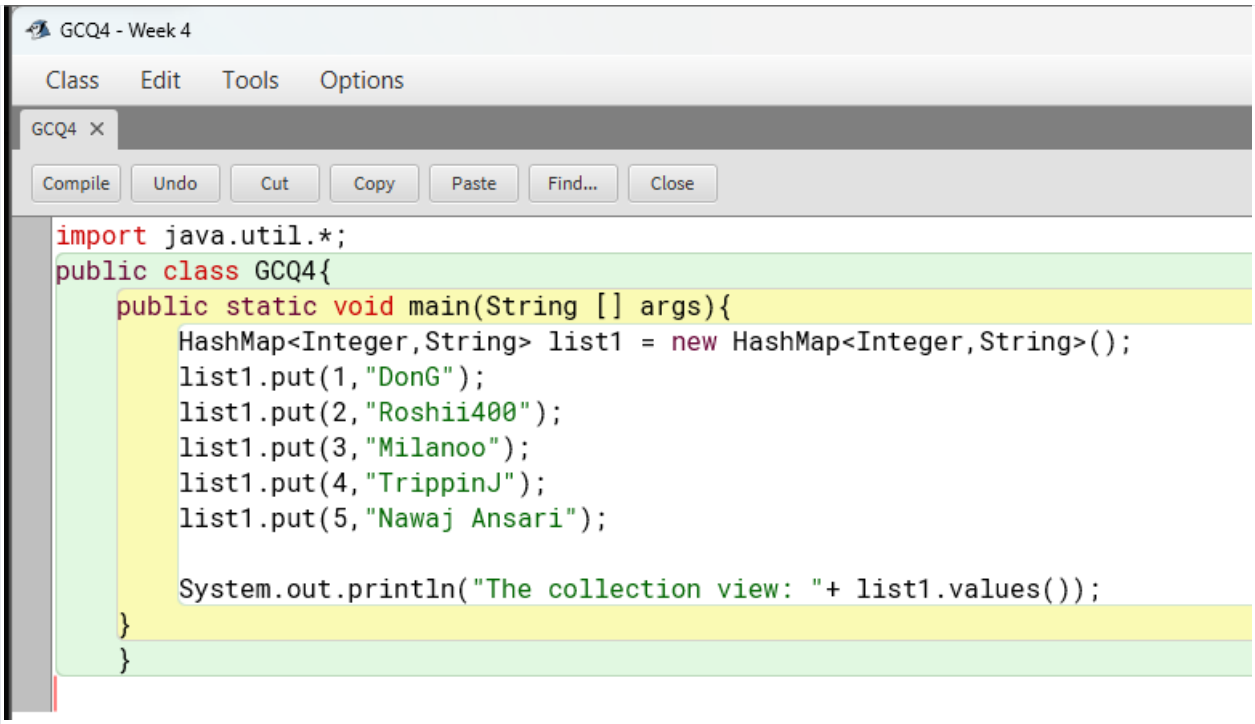
Ans:

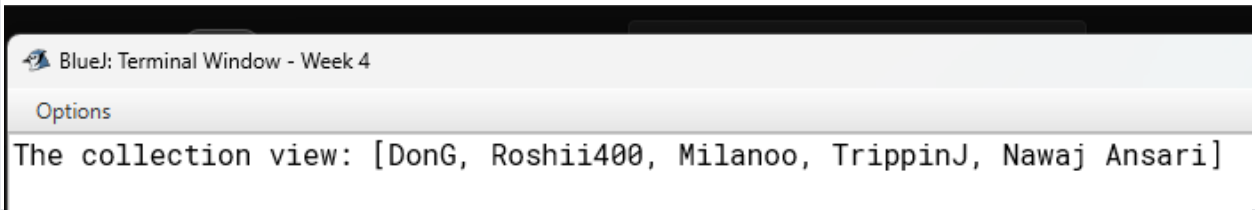




4. Write a Java program to get a collection view of the values contained in this map

Ans:


GCQ4 - Week 4
Class Edit Tools Options
GCQ4
Compile Undo Cut Copy Paste Find... Close
import java.util.*;
public class GCQ4{
public static void main(String [] args){
HashMap<Integer,String> list1 = new HashMap<Integer,String>();
list1.put(1,"DonG");
list1.put(2,"Roshii400");
list1.put(3,"Milanoo");
list1.put(4,"TrippinJ");
list1.put(5,"Nawaj Ansari");
System.out.println("The collection view: "+ list1.values());
}
}


BlueJ: Terminal Window - Week 4
Options
The collection view: [DonG, Roshii400, Milanoo, TrippinJ, Nawaj Ansari]

(Optional)

Group D

1. Building a Rock Paper Scissor game in java

Ask the user to enter in their move.

Make a list of valid moves.

Check if the user entered a valid move by looking at the list of valid moves. (If the move is in the list, it is valid move)

Randomly generate the opponent's move. (Randomly choose one move from the list of valid moves)

Display the result to user

Use a loop to continue asking the user for their move.

Check if the user wants to quit.