Question 1: Write a Java program to print the result of the following operations

.a) -5 + 8 * 6 b) (55+9) % 9

c) 20 + -3*5 / 8 d) 5 + 15 /3*2-8 % 3

CODE-

```
public static void main(String[] args)
        {
            Scanner inp = new Scanner(System.in);
            System.out.println("Enter the number of Expressions");
          int n= inp.nextInt();
          for(int co=0;co<n;co++) {
                Stack<Integer> op  = new Stack<Integer>();
                Stack<Double> val = new Stack<Double>();
                Stack<Integer> optmp  = new Stack<Integer>();
                Stack<Double> valtmp = new Stack<Double>();
                System.out.println("\nEnter expression\n");
                String input = inp.next();
                input = "0" + input;
                input = input.replaceAll("-","+-");
                String temp = "";
                for (int i = 0;i < input.length();i++)
                {
                   char ch = input.charAt(i);
                   if (ch == '-')
                      temp = "-" + temp;
                   else if (ch != '+' &&  ch != '*' && ch != '/')
                     temp = temp + ch;
                   else
                   {
                      val.push(Double.parseDouble(temp));
                      op.push((int)ch);
                      temp = "";
                   }
                }
                val.push(Double.parseDouble(temp));
                char operators[] = {'/','*','+'};
                for (int i = 0; i < 3; i++)
                {
                   boolean it = false;
                   while (!op.isEmpty())
                   {
                      int optr = op.pop();
                      double v1 = val.pop();
                      double v2 = val.pop();
```

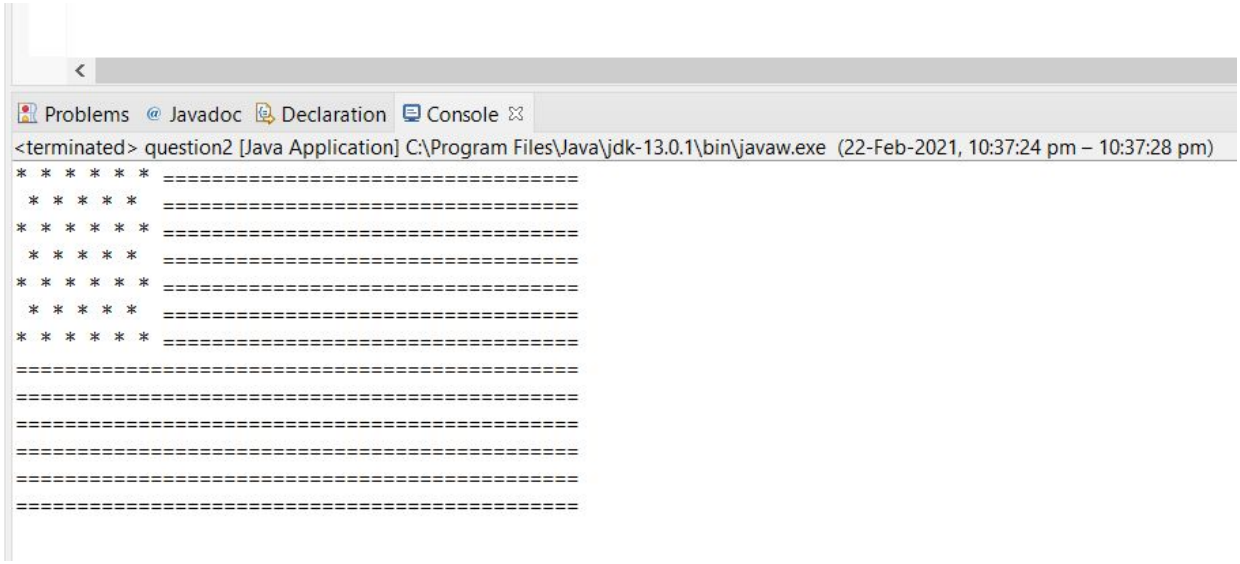
```
                    if (optr == operators[i])
                    {
                        if (i == 0)
                        {
                            valtmp.push(v2 / v1);
                            it = true;
                            break;
                        }
                        else if (i == 1)
                        {
                            valtmp.push(v2 * v1);
                            it = true;
                            break;
                        }
                        else if (i == 2)
                        {
                            valtmp.push(v2 + v1);
                            it = true;
                            break;
                        }
                    }
                    else
                    {
                        valtmp.push(v1);
                        val.push(v2);
                        optmp.push(optr);
                    }
                }
                while (!valtmp.isEmpty())
                    val.push(valtmp.pop());
                while (!optmp.isEmpty())
                    op.push(optmp.pop());
                if (it)
                    i--;
            }
            System.out.println(val.pop());
        }
}
```

Question 2: Write a Java program to print an American flag on the screen.
Ans-

CODE-

```
package assignment;

public class question2 {
	public static void main(String[] args) {
		String pattern1 = "* * * * * * ==================================\n * * * * *  ==================================";
		String pattern2 = "==============================================";
		for (int i = 0; i < 4; i++) {
		System.out.println(pattern1);
		}
		System.out.println("* * * * * * ==================================");
		for (int i = 0; i < 6; i++) {
		System.out.println(pattern2);
		}
		}
}
```

SCREENSHOT-



QUESTION-3 Write a Java program to replace each substring of a given string that matches the given regular expression with the given replacement.

CODE-

```
public static void main(String[] args) {
        Scanner inp=new Scanner(System.in);

        System.out.println("Enterstring: ");
        String oriString=inp.nextLine();

        System.out.println("Enter to be replaced word: ");
        String regEx=inp.nextLine();

        System.out.println("Enter the regex to be replaced with: ");
        String replacedWord=inp.nextLine();

        String replacedString=oriString.replaceAll(regEx, replacedWord);

        System.out.println("Original String: "+oriString);
        System.out.println("New String: "+replacedString);

    }
```

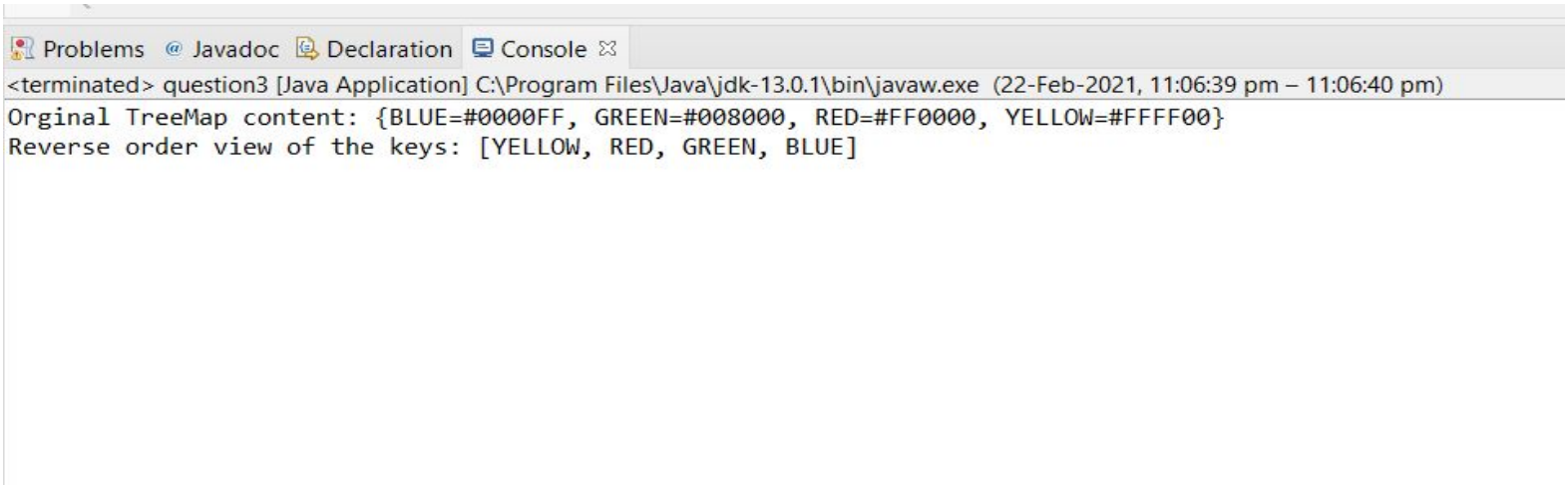
```
<terminated> question3 [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe  (22-Feb-2021, 10:49:44 pm – 10:50:08 pm)
Enterstring:
Hello User,Hope the User is doing great.User are very good and helps alot
Enter to be replaced word:
User
Enter the regex to be replaced with:
Accolite Employees
Original String: Hello User,Hope the User is doing great.User are very good and helps alot
New String: Hello Accolite Employees,Hope the Accolite Employees is doing great.Accolite Employees are very good and helps alot
```

Question-4 Write a Java program to get a reverse order view of the keys contained in a given map.

CODE-

```
public static void main(String args[]) {

   TreeMap <String,String> tree_map = new TreeMap <String,String> ();


     tree_map.put("RED", "#FF0000");
```

```
        tree_map.put("BLUE", "#0000FF");
        tree_map.put("GREEN", "#008000");
        tree_map.put("YELLOW", "#FFFF00");

        System.out.println("Orginal TreeMap content: " + tree_map);
        System.out.println("Reverse order view of the keys: " +
tree_map.descendingKeySet());
    }
```



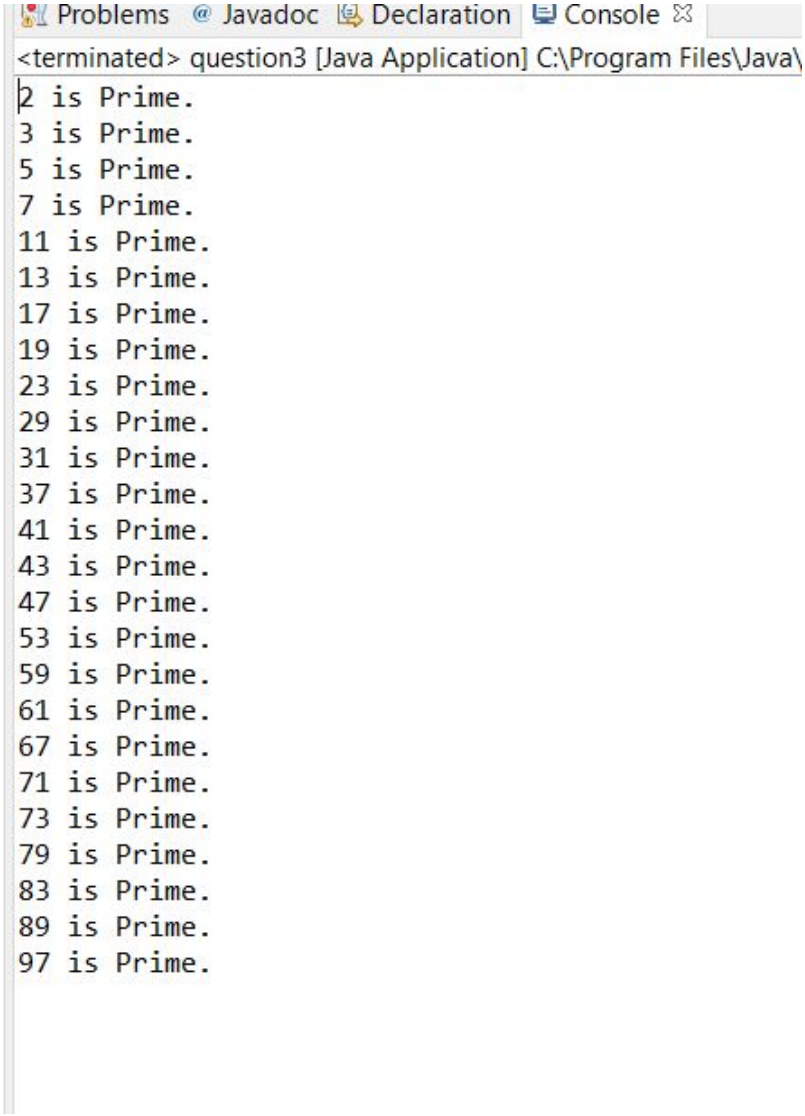
QUESTION-5 **Write your own unchecked Exception and throw it from you counter programme which counts 1 to 100.When you get Prime no while counting then throw this Exception and catch this to print you exception message.**

CODE-

```
package assignment;
import java.util.*;
import java.util.Map.Entry;

class ExceptPrimeNumber extends Exception{

}

public class question3 {
    public static boolean checkPrimeNumber(int n) {
        if(n<=1)
            return false;
        if(n<=3)
            return true;
        if(n%2==0||n%3==0)
            return false;
        for(int i=5;i*i<=n;i=i+6)
```

```
                if(n%i==0 || n%(i+2)==0)
                        return false;
                return true;
        }
        public static void main(String[] args) {
                int count=1;
                while(count<=100) {
                        try {
                                if(checkPrimeNumber(count))
                                        throw new ExceptPrimeNumber();
                        }
                        catch(ExceptPrimeNumber e) {
                                System.out.println(count+" is Prime.");
                        }
                        finally {
                                count++;
                        }
                }
        }
}
```

OUTPUT-



QUESTION-6 Write a programme to serialize 3 fields out of 5 and deserialize it. Use UUID to prvent object mutation.

CODE-

```
package assignment;
import java.io.*;
import java.util.*;

class Data implements Serializable {
	 UUID serialversionUID = new UUID(100,10);
	 int id;
	 int phoneNumber;
	 String email;
	 String name;


	 public Data(int id, String name,String email, int phoneNumber)
	 {
		 this.id = id;
		 this.name = name;
		 this.phoneNumber = phoneNumber;
		 this.email = email;
	 }
}
public class question3{
	 public static void display(Data d){
		 System.out.println("ID Data: " + d.id);
		 System.out.println("Name Data: " + d.name);
		 System.out.println("phoneNumber Data: " + d.phoneNumber);
		 System.out.println("email Data: " + d.email);
	 }
	 public static void main(String []args){
		 Data d1 = new Data(1, "Mohit Gupta","mohit.gupta@accolitedigital.com",
952);
		 try {
			 System.out.println("\nSerializing\n");
			 FileOutputStream file = new FileOutputStream("dataFile.txt");
			 ObjectOutputStream out = new ObjectOutputStream(file);
			 out.writeObject(d1);
			 out.close();
			 file.close();
			 System.out.println("Data before deserialization:\n ");
			 display(d1);
```

```
            }
            catch (Exception e) {
                System.out.println("Exception Caught");
            }
            d1 = null;
            try {
                System.out.println("\nDeserializing\n");
                FileInputStream file = new FileInputStream("dataFile.txt");
                ObjectInputStream in = new ObjectInputStream(file);
                d1 = (Data) in.readObject();
                in.close();
                file.close();
                System.out.println("\n\nData after deserialization:\n ");
                display(d1);
            }
            catch (Exception e) {
                System.out.println("Exception Caught");
            }
        }

}
```

OUTPUT

```
Serializing

Data before deserialization:

ID Data: 1
Name Data: Mohit Gupta
phoneNumber Data: 952
email Data: mohit.gupta@accolitedigital.com

Deserializing



Data after deserialization:

ID Data: 1
Name Data: Mohit Gupta
phoneNumber Data: 952
email Data: mohit.gupta@accolitedigital.com
```

SERIALIZED FILE DATA-

¬í sr assignment.DataÐOô{ÅL I idl
phoneNumberL emailt Ljava/lang/String;L nameq ~ L serialversionUIDt Ljava/util/UUID;xp
¸t mohit.gupta@accolitedigital.comt
Mohit Guptasr java.util.UUID¼™÷˜m…/ J leastSigBitsJ
mostSigBitsxp
d