

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 class question1{
    public static void main(String args[]) {
        System.out.println(eval("-5+8*6"));
        System.out.println(eval("(55+9)%9"));
        System.out.println((int)(eval("20+ -3*5/8")));
        System.out.println(eval("5+15/3*2-8%3"));
    }

    public static int eval(final String str) {
        return new Object() {
            int pos = -1, ch;

            void nextChar() {
                ch = (++pos < str.length()) ? str.charAt(pos) : -1;
            }

            boolean select(int charToSelect) {
                while (ch == ' ') nextChar();
                if (ch == charToSelect) {
                    nextChar();
                    return true;
                }
                return false;
            }

            int eval() {
                nextChar();
                int x = evalExpression();
                return x;
            }

            int evalExpression() {
                int x = evalTerm();
                for (;;) {
                    if (select('+')) x += evalTerm(); // addition
                    else if (select('-')) x -= evalTerm(); // subtraction
                    else return x;
                }
            }
        };
    }
}
```

```

    }
}

int evalTerm() {
    int x = evalFactor();
    for (;;) {
        if (select('*')) x *= evalFactor();
        else if (select('/')) x /= evalFactor();
        else if (select('%')) x %= evalFactor();
        else return x;
    }
}

int evalFactor() {
    if (select('+')) return evalFactor();
    if (select('-')) return -evalFactor();

    int x;
    int startPos = this.pos;
    if (select('(')) { // parentheses
        x = evalExpression();
        select(')');
    } else if ((ch >= '0' && ch <= '9') || ch == '.') {
        while ((ch >= '0' && ch <= '9') || ch == '.') nextChar();
        x = Integer.parseInt(str.substring(startPos, this.pos));
    } else {
        throw new RuntimeException("Unexpected: " + (char)ch);
    }
    return x;
}
}.eval();
}
}

```

## OUTPUT-

```

<terminated> question1 [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (23-Feb-2021, 3:09:16 pm - 3:09:17 pm)
43
1
19
13

```

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-**

[illegible]

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

```

```

<terminated> question3 [Java Application] C:\Program Files\Java\jdk-13.0.1\bin\javaw.exe (22-Feb-2021, 11:06:39 pm – 11:06:40 pm)
Original TreeMap content: {BLUE=#0000FF, GREEN=#008000, RED=#FF0000, YELLOW=#FFFF00}
Reverse order view of the keys: [YELLOW, RED, GREEN, BLUE]

```

**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;**

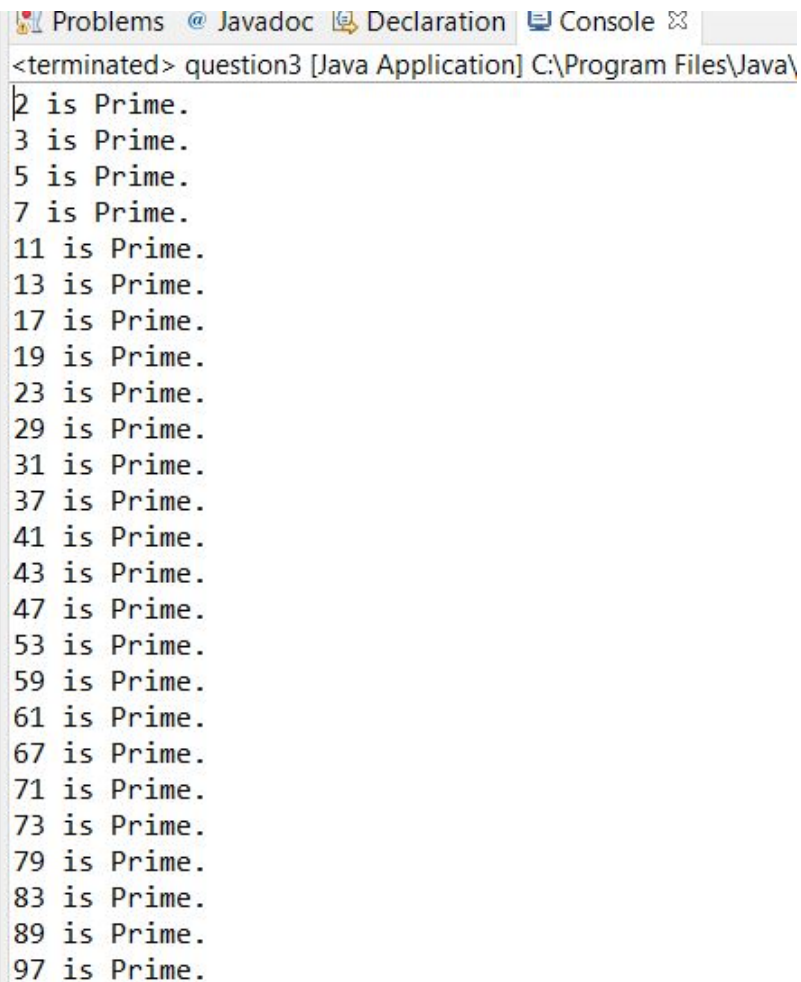
**for(int i=5;i\*i<=n;i=i+6)**

```

        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-



```

Problems @ Javadoc Declaration Console
<terminated> question3 [Java Application] C:\Program Files\Java\
2 is Prime.
3 is Prime.
5 is Prime.
7 is Prime.
11 is Prime.
13 is Prime.
17 is Prime.
19 is Prime.
23 is Prime.
29 is Prime.
31 is Prime.
37 is Prime.
41 is Prime.
43 is Prime.
47 is Prime.
53 is Prime.
59 is Prime.
61 is Prime.
67 is Prime.
71 is Prime.
73 is Prime.
79 is Prime.
83 is Prime.
89 is Prime.
97 is Prime.

```

QUESTION-6 Write a programme to serialize 3 fields out of 5 and deserialize it. Use UUID to prevent 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-**

**sr assignment.Data{AL I idI**

**phoneNumberL emailt Ljava/lang/String;L nameq ~ L serialversionUIDt Ljava/util/UUID;xp**

**t mohit.gupta@accolitedigital.comt**

**Mohit Guptasr java.util.UUID<sup>TM</sup>÷m.../ J leastSigBitsJ**

**mostSigBitsxp**

**d**