

PARVATHAM RAM CHARAN

Assignment 10(IO STREAMS)

.....

1. Write a Program to read the same program file and find the no. of lines, words and characters. Write the result in in to a text file (result.txt)

code:

```
import java.io.*;

public class problem1{

    public static void main(String[] args) throws Exception {

        FileReader fr = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//problem1.java");

        BufferedReader br = new BufferedReader(fr);

        String line = br.readLine();

        int lc=0,wc=0,cc=0;

        while(line !=null){

            lc++;

            cc += line.length();

            String[] words = line.trim().split("\\s+");

            //Splits the trimmed string into an array of words, using one or more
            //whitespace characters (\s+) as the delimiter.

            if(!line.trim().isEmpty()){

                wc +=words.length;

            }

            line=br.readLine();

        }

        fr.close();

        br.close();

        FileWriter fw = new FileWriter("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//probem1result.txt");

        BufferedWriter bw = new BufferedWriter(fw);
```

```

        bw.write("Number of lines : "+lc);

        bw.newLine();

        bw.write("Number of characters : "+cc);

        bw.newLine();

        bw.write("Number of word count : "+wc);

        bw.close();

        fw.close();

        System.out.println("success....");

    }

}

```

//\s+ is a regular expression (regex) used in Java's split() method.

// 1. \s

// In regex, \s means any whitespace character.

// This includes:

// space (' ')

// tab (\t)

// newline (\n)

// carriage return (\r)

// form feed (\f)

// 2. +

// In regex, + means "one or more occurrences".

// So \s+ means one or more whitespace characters in a row.

// 3. \\s+ in Java

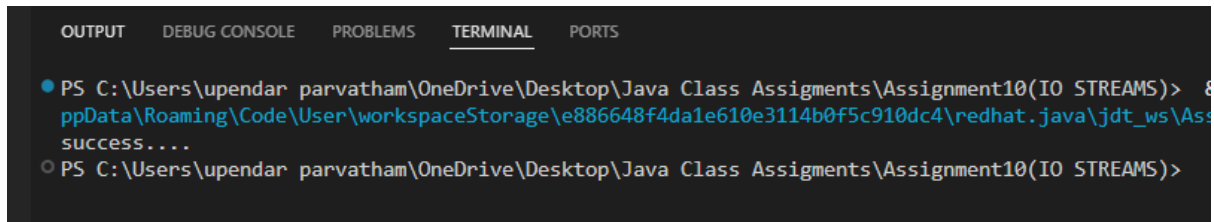
// In Java strings, \ is an escape character.

// So to represent the regex \s+, you must write \\s+ in Java.

// First \ escapes the second \ in the string.

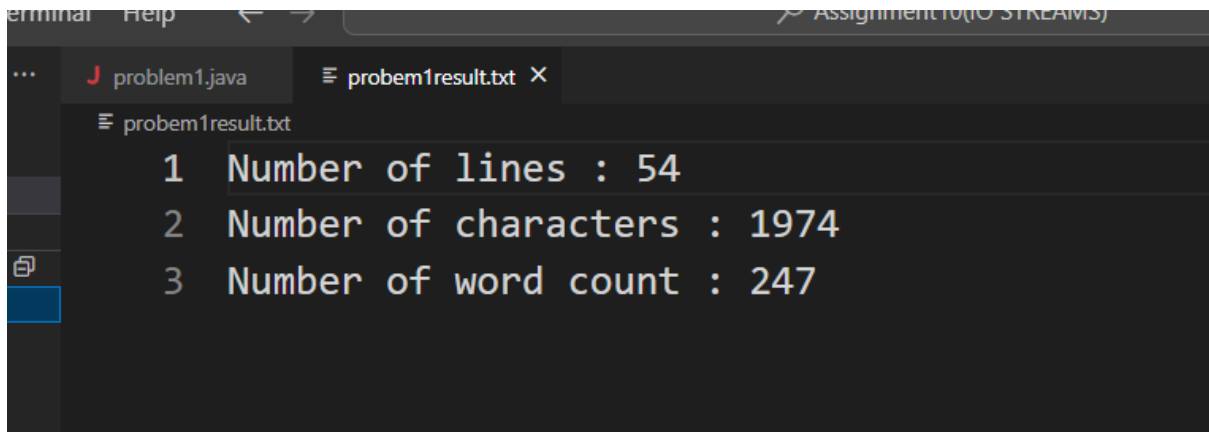
// The regex engine finally sees \s+.

Output:



```
OUTPUT  DEBUG CONSOLE  PROBLEMS  TERMINAL  PORTS

● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)> 8
ppData\Roaming\Code\User\workspaceStorage\e886648f4da1e610e3114b0f5c910dc4\redhat.java\jdt_ws\As
success....
○ PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)>
```



```
terminal  Help  Assignment10(IO STREAMS)

...  J problem1.java  problem1result.txt x
    problem1result.txt
1  Number of lines : 54
2  Number of characters : 1974
3  Number of word count : 247
```

.....

2. Write a program to read the same program file and write it to other file with the lines number added before each line, starting from 1.

```
import java.io.*;

public class problem2 {

    public static void main(String[] args) throws Exception{

        FileReader fr = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//problem2.java");

        BufferedReader br = new BufferedReader(fr);

        FileWriter fw = new FileWriter("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//problem2result.java");

        BufferedWriter bw = new BufferedWriter(fw);

        String line;

        int lc=1;
```

```

while((line=br.readLine())!=null){
    fw.write((lc++)+" "+line+"\n");
}

fr.close();

br.close();

fw.close();

bw.close();

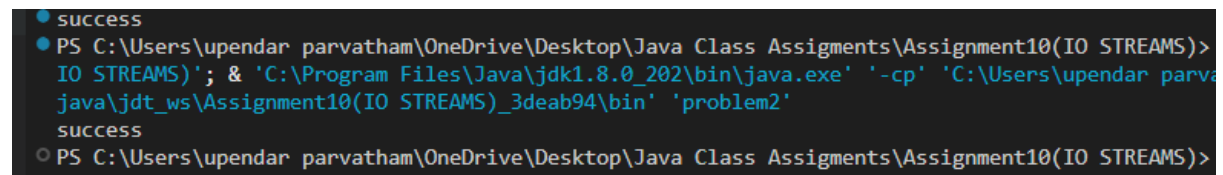
System.out.println("success");

}

}

```

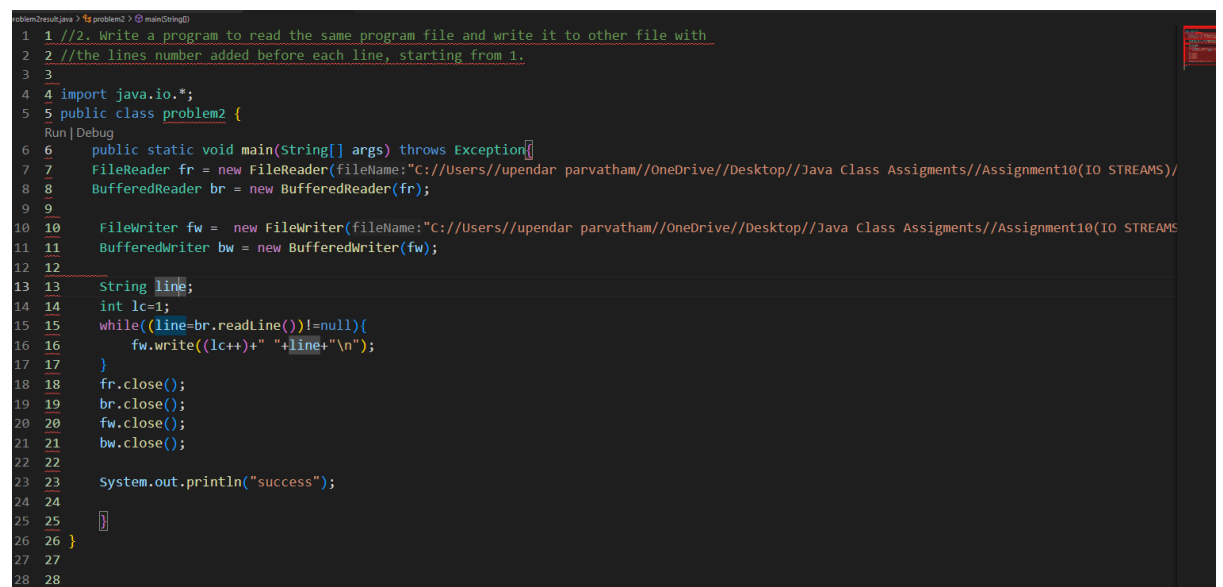
Output:



```

● success
● PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)>
  IO STREAMS'; & 'C:\Program Files\Java\jdk1.8.0_202\bin\java.exe' '-cp' 'C:\Users\upendar parva
  java\jdt_ws\Assignment10(IO STREAMS)_3deab94\bin' 'problem2'
  success
○ PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)>

```



```

problemResult.java > 1 problem2 > 2 mainString()
1 1 //2. Write a program to read the same program file and write it to other file with
2 2 //the lines number added before each line, starting from 1.
3 3
4 4 import java.io.*;
5 5 public class problem2 {
6 6     public static void main(String[] args) throws Exception{
7 7         FileReader fr = new FileReader(fileName:"C://Users//upendar parvatham//OneDrive//Desktop//Java Class Assignments//Assignment10(IO STREAMS)/
8 8         BufferedReader br = new BufferedReader(fr);
9 9
10 10         FileWriter fw = new FileWriter(fileName:"C://Users//upendar parvatham//OneDrive//Desktop//Java Class Assignments//Assignment10(IO STREAMS
11 11         BufferedWriter bw = new BufferedWriter(fw);
12 12
13 13         String line;
14 14         int lc=1;
15 15         while((line=br.readLine())!=null){
16 16             fw.write((lc++)+" "+line+"\n");
17 17         }
18 18         fr.close();
19 19         br.close();
20 20         fw.close();
21 21         bw.close();
22 22
23 23         System.out.println("success");
24 24
25 25     }
26 26 }
27 27
28 28

```

3. Write a Java program to read first 3 lines from a file.

```
import java.io.BufferedReader;

import java.io.FileReader;

public class problem3 {

    public static void main(String[] args) throws Exception {

        FileReader fr = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//problem1.java");

        BufferedReader br = new BufferedReader(fr);

        String line="";

        int lc=0,max=3;

        while( ((line=br.readLine()) != null) &&  lc < max){

            System.out.println(line);

            lc++;

        }

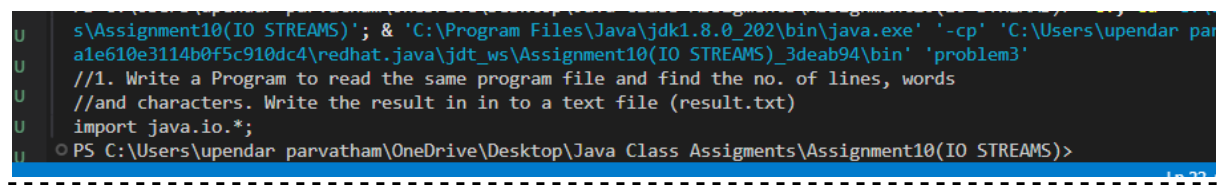
        br.close();

        fr.close();

    }

}
```

Output:



```
s\Assignment10(IO STREAMS)'; & 'C:\Program Files\Java\jdk1.8.0_202\bin\java.exe' '-cp' 'C:\Users\upendar par
a1e610e3114b0f5c910dc4\redhat.java\jdt_ws\Assignment10(IO STREAMS)_3deab94\bin' 'problem3'
//1. Write a Program to read the same program file and find the no. of lines, words
//and characters. Write the result in in to a text file (result.txt)
import java.io.*;
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)>
```

4. Write a Java program to find the longest word in a text file.

```
import java.io.BufferedReader;

import java.io.FileReader;

public class problem4 {
```

```

public static void main(String[] args) throws Exception{

    FileReader fr = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//sample.txt");

    BufferedReader br = new BufferedReader(fr);


    String maxword="";
    String word="";
    String line = "";
    while((line=br.readLine()) != null){

        String[] arr = line.trim().split("\\s+");
        for(String str : arr){
            str = str.replaceAll("[^a-zA-Z]", "");
            if(maxword.length() < str.length()){
                maxword= str;
            }
        }
    }
    br.close();
    fr.close();

    System.out.println("The longest word in the file is: " +maxword);

}
}

```

//[a-zA-Z] → matches all letters (lowercase a-z and uppercase A-Z)

//^ inside [] → negates the set, so [^a-zA-Z] means anything that is NOT a letter (numbers, punctuation, spaces, symbols).

//[^a-zA-Z] is a regex that matches any character that is not a letter (neither lowercase a–z nor uppercase A–Z).

pple.txt

```
1 Java is a powerful programming language
2 It is widely used for software development
3 Serialization, inheritance, polymorphism, encapsulation
4 Streams, files, and exception handling are important topics
5 Practice makes perfect in coding challenges
6
```

Output:

```
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)> &
ppData\Roaming\Code\User\workspaceStorage\e886648f4da1e610e3114b0f5c910dc4\redhat.java\jdt_ws\Assig
● The longest word in the file is: Serialization
○ PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)>
```

.....

5. Write a program to implement Caesar cipher using files.

Write to the file (enc_message.txt) with using caesar cipher with
the displacement value = 3.

Read the file (enc_message.txt) and decode the Cipher text and write it into
a file (dec_message.txt)

```
import java.io.*;
```

```
public class problem5 {
```

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

```
        FileReader fr = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//sample.txt");
```

```
        BufferedReader br = new BufferedReader(fr);
```

```
        int displacement = 3;
```

```
        StringBuilder original = new StringBuilder();
```

```
        String line;
```

```
        while ((line = br.readLine()) != null) {
```

```
            original.append(line).append('\n');
```

```
        }
```

```

// Encrypt the message

StringBuilder encrypt = new StringBuilder();
for (char ch : original.toString().toCharArray()) {
    if (Character.isUpperCase(ch)) {
        encrypt.append((char) ('A' + (ch - 'A' + displacement) % 26));
        //c = 'Z'
        // 'Z' - 'A' = 25
        // 25 + 3 = 28
        // 28 % 26 = 2
        // 'A' + 2 = 'C'

    } else if (Character.isLowerCase(ch)) {
        encrypt.append((char) ('a' + (ch - 'a' + displacement) % 26));
    } else {
        encrypt.append(ch); // keep spaces, punctuation, numbers as is
    }
}

```

```

FileWriter fw = new FileWriter("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//enc_mssage.txt");

```

```

BufferedWriter bw = new BufferedWriter(fw);
bw.write(encrypt.toString());
bw.close();
fw.close();
br.close();
fr.close();

```

```

System.out.println("Encrypted text saved in enc_mssage.txt");

```

```

// Decrypt

```

```

FileReader fr2 = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java
Class Assignments//Assignment10(IO STREAMS)//enc_mssage.txt");

```



```
BufferedReader br2 = new BufferedReader(fr2);
```

```
StringBuilder encryptMessage = new StringBuilder();
```

```
while ((line = br2.readLine()) != null) {
```

```
    encryptMessage.append(line).append("\n");
```

```
}
```

```
br2.close();
```

```
fr2.close();
```

```
StringBuilder decrypt = new StringBuilder();
```

```
for (char ch : encryptMessage.toString().toCharArray()) {
```

```
    if (Character.isUpperCase(ch)) {
```

```
        decrypt.append((char) ('A' + (ch - 'A' - displacement + 26) % 26));
```

```
        //c = 'C'
```

```
        //'C' - 'A' = 2
```

```
        //2 - 3 = -1
```

```
        //-1 + 26 = 25
```

```
        //25 % 26 = 25
```

```
        //'A' + 25 = 'Z'
```

```
    } else if (Character.isLowerCase(ch)) {
```

```
        decrypt.append((char) ('a' + (ch - 'a' - displacement + 26) % 26));
```

```
    } else {
```

```
        decrypt.append(ch);
```

```
    }
```

```
}
```

```
FileWriter fw2 = new FileWriter("C://Users//upendar parvatham//OneDrive//Desktop//Java  
Class Assignments//Assignment10(IO STREAMS)//dec_mssage.txt");
```

```
BufferedWriter bw2 = new BufferedWriter(fw2);
```

```
bw2.write(decrypt.toString());
```

```

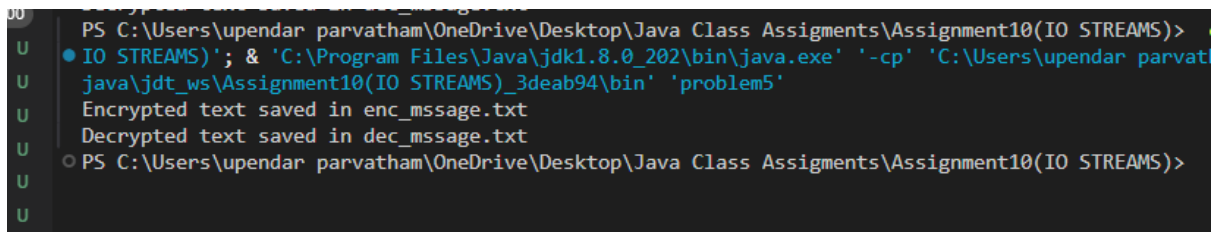
        bw2.close();

        fw2.close();

        System.out.println("Decrypted text saved in dec_mssage.txt");
    }
}

```

Output:

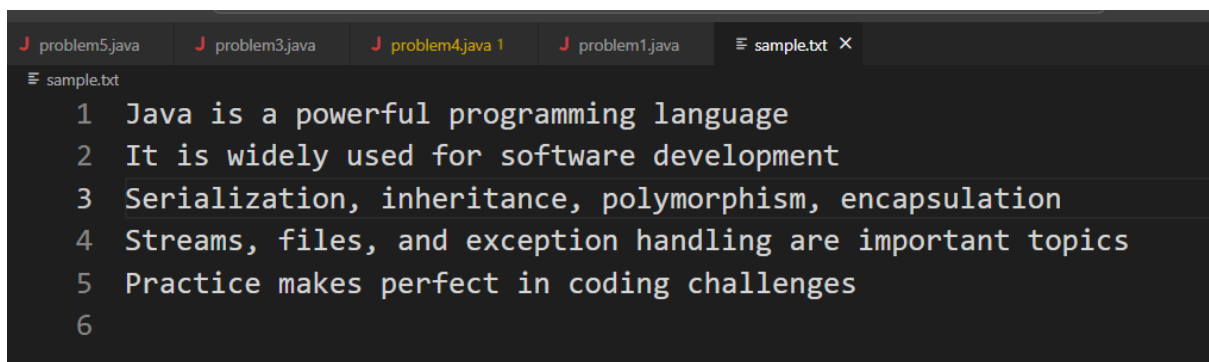


```

PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)> java -cp 'C:\Program Files\Java\jdk1.8.0_202\bin\java.exe' -cp 'C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)_3deab94\bin' 'problem5'
Encrypted text saved in enc_mssage.txt
Decrypted text saved in dec_mssage.txt
PS C:\Users\upendar parvatham\OneDrive\Desktop\Java Class Assignments\Assignment10(IO STREAMS)>

```

Sample.txt

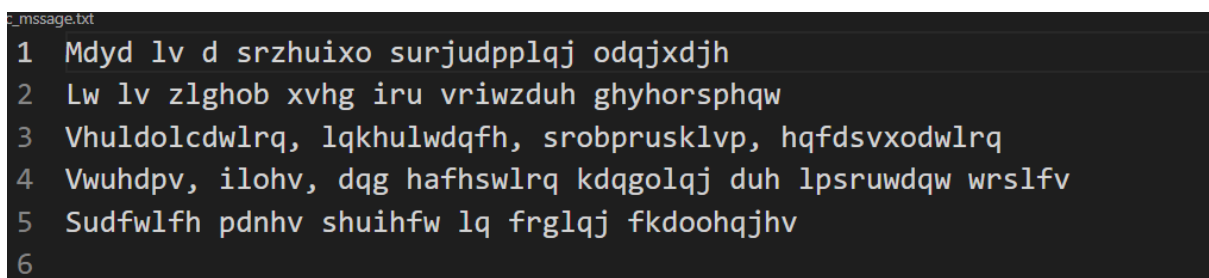


```

1 Java is a powerful programming language
2 It is widely used for software development
3 Serialization, inheritance, polymorphism, encapsulation
4 Streams, files, and exception handling are important topics
5 Practice makes perfect in coding challenges
6

```

Enc_msge.txt:

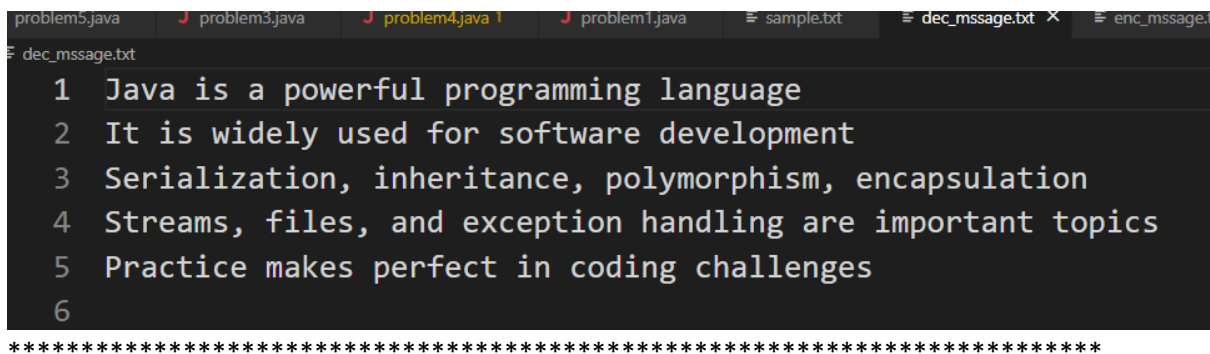


```

1 Mdyd lv d srzhuixo surjudpplqj odqjxdjh
2 Lw lv zlghob xvhg iru vriwzduh ghyhorsphqw
3 Vhuldolcdwlrq, lqkhulwdqfh, srobprusklvp, hqfdsvxodwlrq
4 Vwuhdpv, ilohv, dqg hafhswlrq kdqgolqj duh lpsruwdqw wrslfv
5 Sudfwlfb pdnhv shuihfw lq frglqj fkdoohqjhv
6

```

Dec_msge:

A screenshot of a code editor window. The title bar shows several tabs: 'problem5.java', 'problem3.java', 'problem4.java', 'problem1.java', 'sample.txt', 'dec_msage.txt', and 'enc_msage.txt'. The 'dec_msage.txt' tab is active, showing a file with 6 lines of text. The text is as follows:

```
1 Java is a powerful programming language
2 It is widely used for software development
3 Serialization, inheritance, polymorphism, encapsulation
4 Streams, files, and exception handling are important topics
5 Practice makes perfect in coding challenges
6
```

Below the text, there is a line of asterisks:

```
*****
```

6. Write a program to find unique words in file

```
import java.io.*;

import java.util.HashMap;

import java.util.HashSet;

import java.util.*;

public class problem6 {

    public static void main(String[] args) throws Exception {

        FileReader fr = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assignments//Assignment10(IO STREAMS)//sample2.txt");

        BufferedReader br = new BufferedReader(fr);

        HashMap<String,Integer> hp = new HashMap<>();

        String line = "";

        while((line=br.readLine()) != null){

            String[] arr = line.trim().split("\\s+");

            for(String str: arr){

                hp.put(str, hp.getOrDefault(str, 0) + 1);

            }

        }

        for(Map.Entry<String,Integer> it : hp.entrySet()){

            if(it.getValue() == 1){

                System.out.println(it.getKey());

            }

        }

    }

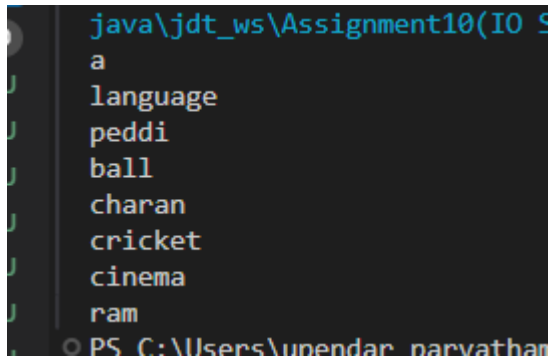
}
```

```

    }
}
}

```

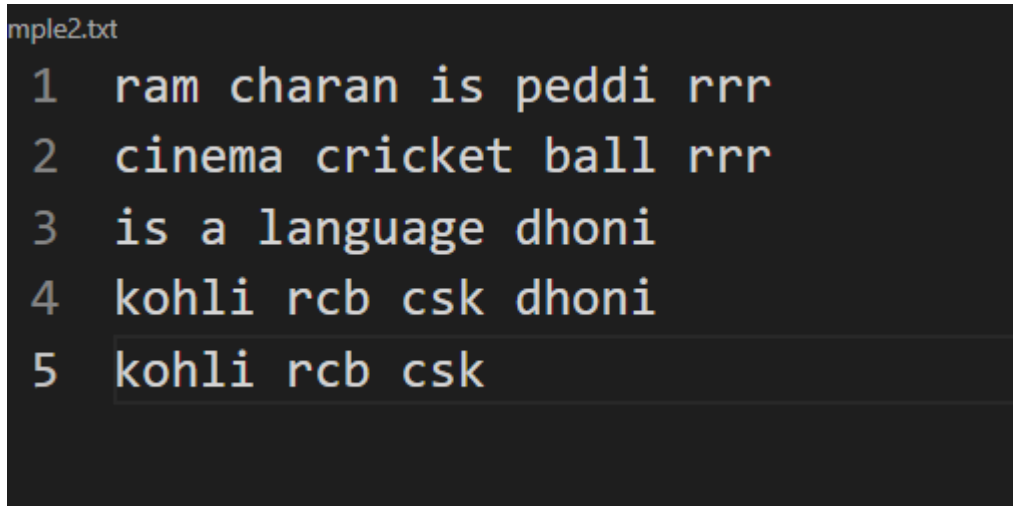
Output:



```

java\jdt_ws\Assignment10\IO S
a
language
peddi
ball
charan
cricket
cinema
ram
PS C:\Users\unendar_paryathan

```



```

mple2.txt
1 ram charan is peddi rrr
2 cinema cricket ball rrr
3 is a language dhoni
4 kohli rcb csk dhoni
5 kohli rcb csk

```

7. Write a program to find duplicate words in a file

```

import java.io.BufferedReader;
import java.io.FileReader;
import java.util.HashMap;
import java.util.Map;

public class problem7 {
    public static void main(String[] args) throws Exception {

```

```

FileReader fr = new FileReader("C://Users//upendar parvatham//OneDrive//Desktop//Java Class
Assigments//Assignment10(IO STREAMS)//sample2.txt");

BufferedReader br = new BufferedReader(fr);

HashMap<String,Integer> hp = new HashMap<>();

String line = "";
while((line=br.readLine()) != null){

    String[] arr = line.trim().split("\\s+");

    for(String str: arr){

        hp.put(str, hp.getOrDefault(str,0)+1);

    }

}

for(Map.Entry<String,Integer> it : hp.entrySet()){

    if(it.getValue()>=2){

        System.out.println(it.getKey());

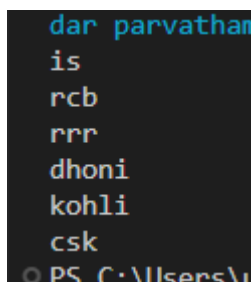
    }

}

}

```

Output:



```

PS C:\Users\upendar parvatham
dar parvatham
is
rcb
rrr
dhoni
kohli
csk

```

.....

