Problem Statement 3:

Create a Java application that reads a text file, counts the occurrences of each word and displays the frequency of each word.

Solution:

```
import java.io.File;
import java.io.IOException;
import java.util.Scanner;
import java.io.FileNotFoundException;
import java.util.HashMap;
import java.io.FileWriter;

public class Assignment3 {
   public static void main(String[] args) {

       // creation of the file : example.txt
       try {
           File myObj = new File("example.txt");
           if(myObj.createNewFile()){
               System.out.println("File Created successfully: "+myObj.getName());
           }
           else{
               System.out.println("File Already Exists!");
           }
       }catch(IOException e){
           System.out.println("An Error Occurred");
           e.printStackTrace();
       }

//        writing to the file example.txt
//        try{
//         FileWriter mywriter = new FileWriter("example.txt");
//         mywriter.write("mango banana apple mango pineapple kiwi orange grapes pomegranate");
//         mywriter.close();
//            System.out.println("Successfully written to the file.");
//        }catch(IOException e){
//            System.out.println("Error Occurred..");
//            e.printStackTrace();
//        }



       // creation of HashMap and counting frequencies of each word in the file
```

```
    HashMap<String,Integer> wordCounts = new HashMap<String, Integer>();
    try{
        File myObj= new File("example.txt");
        Scanner scanner= new Scanner(myObj);

        // Reading the file line by line
        while(scanner.hasNextLine()){
            String line= scanner.nextLine();//store the current line
            String[] words_in_line=line.split("\\s+");// split the current line into an array of strings
         for(String word:words_in_line){
            if(!word.isEmpty())wordCounts.put(word, wordCounts.getOrDefault(word,0)+1);}
        }
        scanner.close();
        System.out.println("Count of Occurrences of each word in the file "+myObj.getName()+" are :");
        System.out.println("Word\t\tCountOfOccurrences\n");
        for(String word:wordCounts.keySet()){
            System.out.println(word+"\t\t"+wordCounts.get(word));
        }
    }catch(FileNotFoundException e){
        System.out.println("Error Reading File "+e.getMessage());
        e.printStackTrace();
    }
  }
}
```

Content of example.txt file which i am using for Testing

```
mango banana apple mango pineapple kiwi orange grapes pomegranate apple
mango banana apple mango pineapple kiwi orange grapes pomegranate apple
mango banana apple mango pineapple kiwi orange grapes pomegranate apple
```

Output:

```
Count of Occurrences of each word in the file example.txt are :
Word        CountOfOccurrences

banana      3
orange      3
apple       6
kiwi        3
pineapple       3
pomegranate     3
mango       6
grapes      3
```