```
package stringmatching_kmp;

import java.io.BufferedReader;
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.io.IOException;
import java.util.Scanner;

public class StringMatching_KMP {
   public static void main(String[] args) throws FileNotFoundException, IOException {
      Scanner sc = new Scanner(System.in);
      File f = new File("C:\\Users\\Asus\\Documents\\NetBeansProjects\\StringMatching_KMP\\src\\comp.txt");
      BufferedReader br = new BufferedReader(new FileReader(f));
      String s = "";
      String s1="";
      while((s=br.readLine()) != null ){
         s1+=s;
      }
      System.out.println(s1);
      char[] str = s1.toCharArray();//"computer is a device hepls to compute the computable
operations".toCharArray();
      System.out.println("Enter the Pattern");
      char[] pat = sc.next().toCharArray();
      KMP_Alog k = new KMP_Alog();
      int[] table = k.KMP(pat);
      k.print(table);
      PatternMatching p = new PatternMatching();
      p.compare(str, pat, table);
   }
}

class PatternMatching{
   void compare(char[] str,char[] pat,int[] tab){
      int i=0,j=0,k=0;
      int count=0;
      while(i<=str.length-1){
         if(str[i]==pat[j]){
            k++;
            if(j==pat.length-1){
               count++;
            }
            i++;j++;
            if(j>=pat.length)
               j=0;

         }else{
            if(k==0){
               i++;
            }else{
               j=tab[j];
            }
            k=0;
```

```
        }
      }
      System.out.println("No of occurances: "+count);
   }

}

class KMP_Alog {
   int[] KMP(char[] pat){
      int[] pre_tab = new int[pat.length];
      int i=1,j=0;
      pre_tab[j]=0;
      while(i<pat.length){
         if(compare(i,j,pat)){
            pre_tab[i]=j+1;
            i++;j++;
         }else{
            j=goBack(i, j, pat, pre_tab);
            if(j==-1){
               pre_tab[i]=0;
               i++;
               j=0;
            }else{
               continue;
            }
         }
      }

      return pre_tab;
   }
   boolean compare(int i,int j,char[] pat){
      if(pat[i]==pat[j]){
         return true;
      }
      return false;
   }
   int goBack(int i,int j,char[] pat,int[] table){
      int k;
      if(j==0){
         return -1;
      }
      return table[j];
   }
   void print(int[] table){
      System.out.println("------Prefix Table------");

      for(int i=0;i<table.length;i++)
         System.out.print("| "+table[i]);
      System.out.print("|");
      System.out.println("");
      System.out.println("-------------------------");
   }
}
```

---------output----------
A computer is a machine that can be instructed to carry out sequences of arithmetic or logical operations automatically via computer programming. Modern computers have the ability to follow generalized sets of operations, called programs. These programs enable computers to perform an extremely wide range of tasks. A "complete" computer including the hardware, the operating system (main software), and peripheral equipment required and used for "full" operation can be referred to as a computer system. This term may as well be used for a group of computers that are connected and work together, in particular a computer network or computer cluster.Computers are used as control systems for a wide variety of industrial and consumer devices. This includes simple special purpose devices like microwave ovens and remote controls, factory devices such as industrial robots and computer-aided design, and also general purpose devices like personal computers and mobile devices such as smartphones. The Internet is run on computers and it connects hundreds of millions of other computers and their users.
Enter the Pattern
computer
------Prefix Table------
| 0| 0| 0| 0| 0| 0| 0| 0|

No of occurances: 13