Task 2: Naive Pattern Search

Implement the naive pattern searching algorithm to find all occurrences of a pattern within a given text string. Count the number of comparisons made during the search to evaluate the efficiency of the algorithm.

```
package com.wipro.assignment;
public class NaivePatternSearch {
    public static void
search(String text, String
pattern) {
        int textLength =
text.length();
        int patternLength =
pattern.length();
        int comparisons = 0;

        // Iterate through the
text
        for (int i = 0; i <=
textLength - patternLength; i++) {
            int j;
```

```
            // Check for pattern
match starting at position i
            for (j = 0; j <
patternLength; j++) {
                comparisons++;
                if (text.charAt(i
+ j) != pattern.charAt(j)) {
                    break;
                }
            }

            // If the inner loop
finished without breaking, we
found a match
            if (j ==
patternLength) {

System.out.println("Pattern found
at index " + i);
            }
        }
```

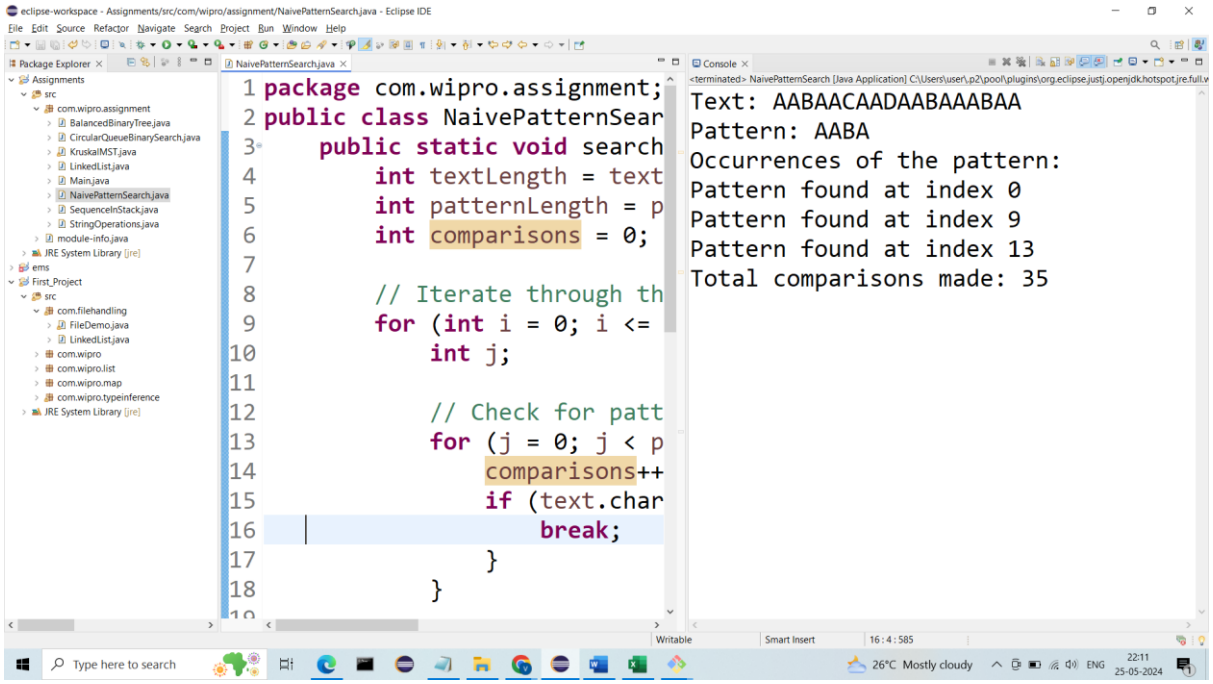
```
        System.out.println("Total
comparisons made: " +
comparisons);
    }

    public static void
main(String[] args) {
        String text =
"AABAACAADAABAAABAA";
        String pattern = "AABA";
        System.out.println("Text:
" + text);

System.out.println("Pattern: " +
pattern);

System.out.println("Occurrences of
the pattern:");
        search(text, pattern);
    }
}
```

Output: -


eclipse-workspace - Assignments/src/com/wipro/assignment/NaivePatternSearch.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Package Explorer
Assignments
src
com.wipro.assignment
BalancedBinaryTree.java
CircularQueueBinarySearch.java
KruskalMST.java
LinkedList.java
Main.java
NaivePatternSearch.java
SequenceInStack.java
StringOperations.java
module-info.java
JRE System Library [jre]
ems
First_Project
src
com.filehandling
FileDemo.java
LinkedList.java
com.wipro
com.wipro.list
com.wipro.map
com.wipro.typeinference
JRE System Library [jre]
NaivePatternSearch.java
1 package com.wipro.assignment;
2 public class NaivePatternSear
3 public static void search
4 int textLength = text
5 int patternLength = p
6 int comparisons = 0;
7
8 // Iterate through th
9 for (int i = 0; i <=
10 int j;
11
12 // Check for patt
13 for (j = 0; j < p
14 comparisons++
15 if (text.char
16 break;
17 }
18 }
Console
<terminated> NaivePatternSearch [Java Application] C:\Users\user\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.w
Text: AABAACAADAABAAABAA
Pattern: AABA
Occurrences of the pattern:
Pattern found at index 0
Pattern found at index 9
Pattern found at index 13
Total comparisons made: 35
Writable
Smart Insert
16 : 4 : 585
Type here to search
26°C Mostly cloudy
ENG
22:11
25-05-2024