

**CHANDIGARH UNIVERSITY  
UNIVERSITY INSTITUTE OF NGINEERING  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**



<b>Submitted By:</b> Vivek Kumar(21BCS8129)		<b>Submitted To:</b> Neha Dutta(E12830)	
<b>Subject Name</b>	Design and Analysis of Algorithm Lab		
<b>Subject Code</b>	20CSP-312		
<b>Branch</b>	Computer Science and Engineering		
<b>Semester</b>	5 <sup>th</sup>		

## Experiment - 10

**Student Name: Vivek Kumar**

**Branch: BE-CSE(LEET)**

**Semester: 5<sup>th</sup>**

**Subject Name: DAA Lab**

**UID: 21BCS8129**

**Section/Group: 20BCS-WM-616/A**

**Date of Performance: 07/11/2022**

**Subject Code: 20CSP-312**

### 1. Aim/Overview of the practical:

Code and Analyze to find all occurrences of a pattern P in a given string S.

### 2. Task to be done/ Which logistics used:

Code and Analyze to find all occurrences of a pattern P in a given string S.

### 3. Requirements (For programming-based labs):

- Laptop or PC.
- Operation system (Mac, Windows, Linux, or any)
- Vs-Code with MinGw or any C++ Compiler

### 4. Steps for experiment/practical/Code:

```
#include <bits/stdc++.h>
using namespace std;

/*
Function to find
All occurrences of the pattern in the string
*/
void solve(string str, string pat)
{
    // Initialising N and M
    int n = str.size();
    int m = pat.size();

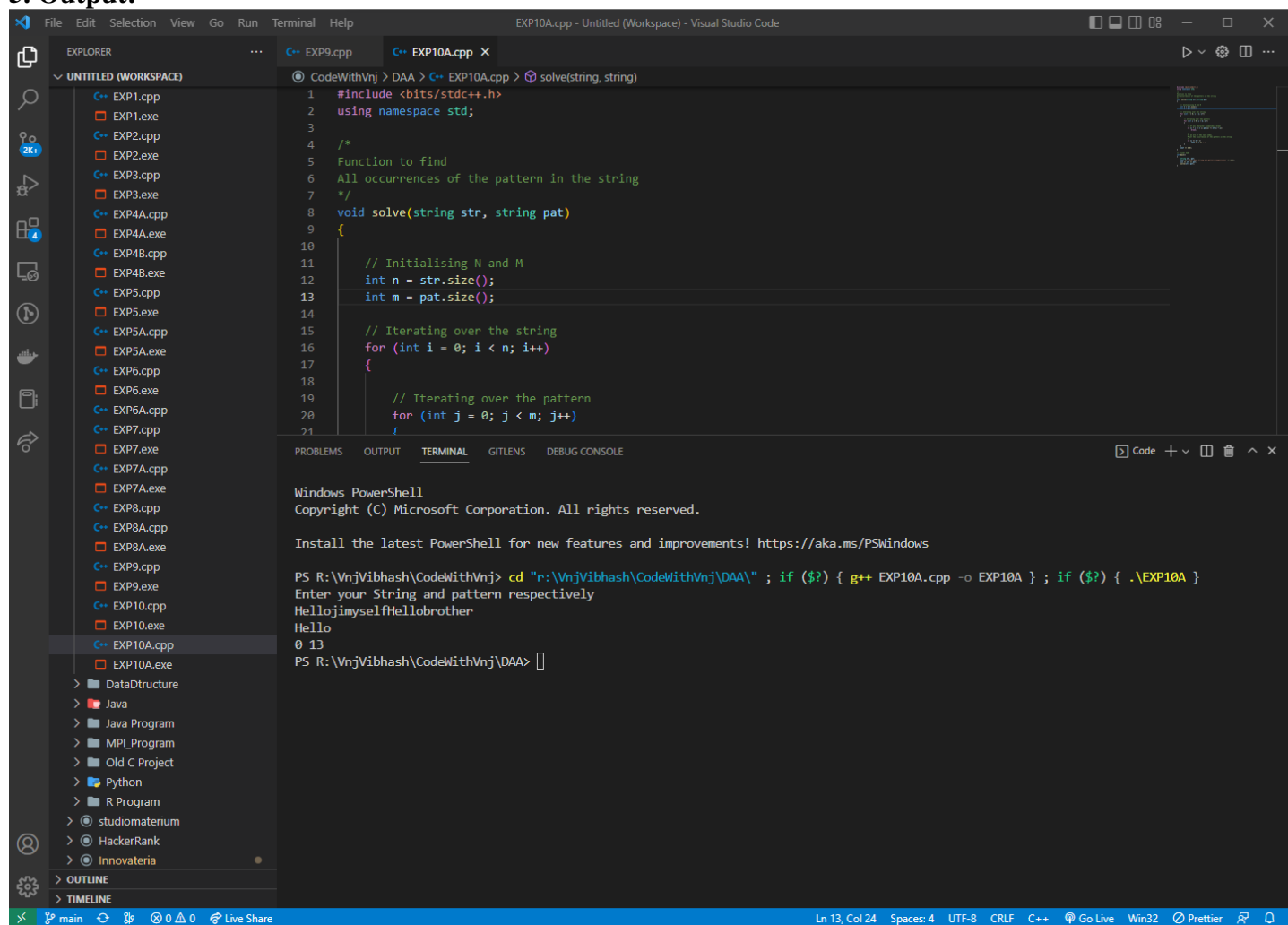
    // Iterating over the string
    for (int i = 0; i < n; i++)
    {
        // Iterating over the pattern
        for (int j = 0; j < m; j++)
        {
```

```
// If any character mismatches, break
if (i + j >= n || pat[j] != str[i + j])
    break;

/*
If we are at the last index,
Print the occurrences of the pattern in the string
*/
if (j == m - 1)
    cout << i << ' ';
}
}
cout << endl;
}

// Driver Code
int main()
{
    string str, pat;
    cout << "Enter your String and pattern respectively" << endl;
    cin >> str >> pat;
    solve(str, pat);
}
```

## 5. Output:



```

1  #include <bits/stdc++.h>
2  using namespace std;
3
4  /*
5  Function to find
6  All occurrences of the pattern in the string
7  */
8  void solve(string str, string pat)
9  {
10
11     // Initialising N and M
12     int n = str.size();
13     int m = pat.size();
14
15     // Iterating over the string
16     for (int i = 0; i < n; i++)
17     {
18
19         // Iterating over the pattern
20         for (int j = 0; j < m; j++)
21         {

```

Windows PowerShell  
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! <https://aka.ms/PSWindows>

PS R:\VnjVibhash\CodeWithVnj> cd "r:\VnjVibhash\CodeWithVnj\DA" ; if (\$?) { g++ EXP10A.cpp -o EXP10A } ; if (\$?) { .\EXP10A }  
Enter your String and pattern respectively  
HellojimyselfHellobrother  
Hello  
0 13  
PS R:\VnjVibhash\CodeWithVnj\DA>

## Learning outcomes (What I have learnt):

1. How to solve the Pattern Matching Algorithm using dynamic programming.

## Evaluation Grid (To be created per the faculty's SOP and Assessment guidelines):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes. (To be submitted at the end of the day).		
2.	Post-Lab Quiz Result.		
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		



	Signature of Faculty (with Date):	Total Marks Obtained:	
--	-----------------------------------	--------------------------	--