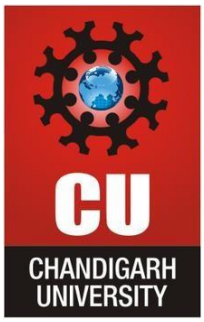
CHANDIGARH UNIVERSITY

UNIVERSITY INSTITUTE OF NGINEERING

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



Submitted By: Vivek Kumar(21BCS8129)	**Submitted To:** Neha Dutta(E12830)
Subject Name	Design and Analysis of Algorithm Lab
Subject Code	20CSP-312
Branch	Computer Science and Engineering
Semester	5^{th}

Experiment - 10

Student Name: Vivek Kumar | **UID: 21BCS8129**
Branch: BE-CSE(LEET) | **Section/Group: 20BCS-WM-616/A**
Semester: 5th | **Date of Performance: 07/11/2022**
Subject Name: DAA Lab | **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):

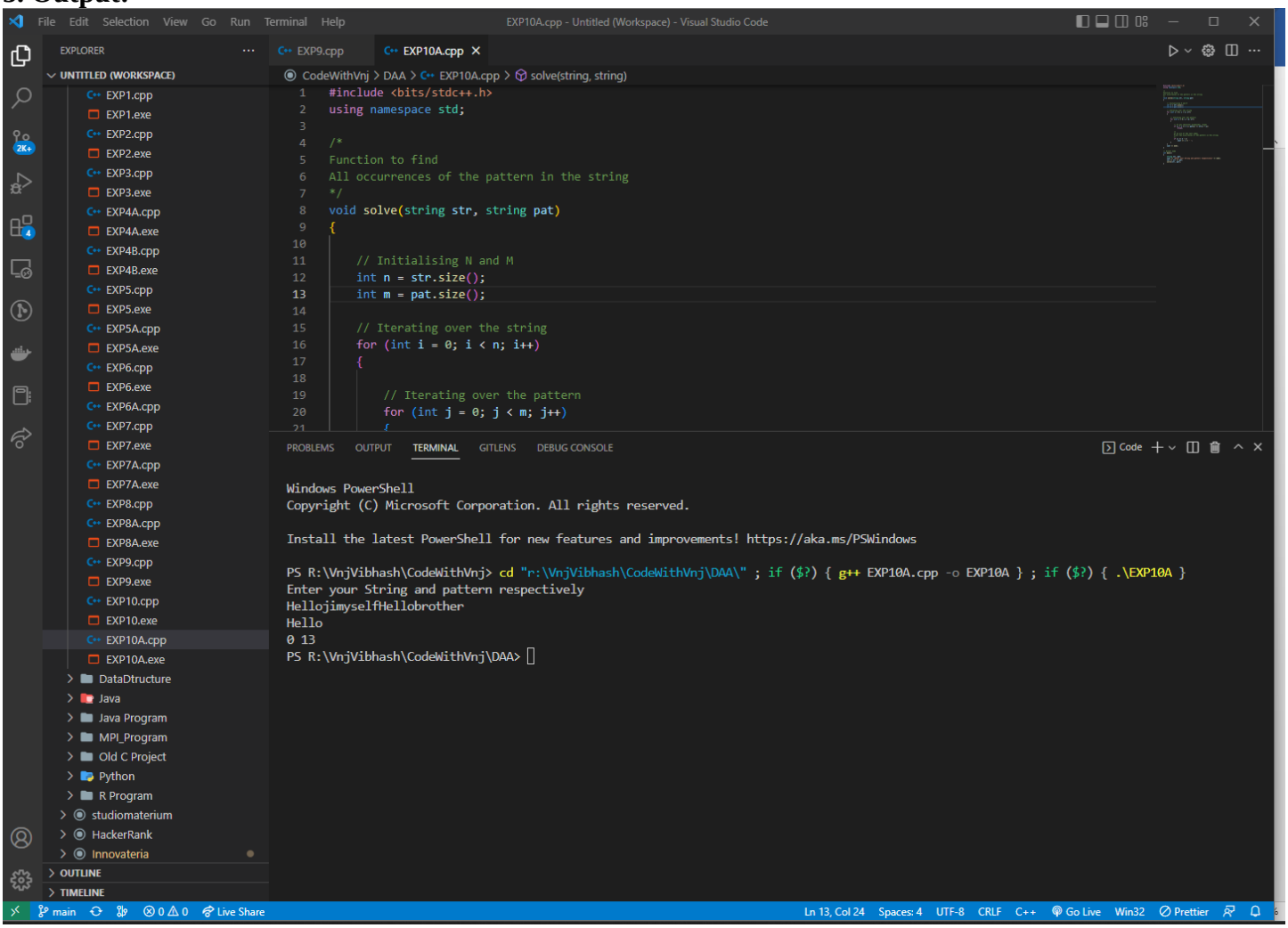
- Laptop or PC.
- Operation system (Mac, Windows, Linux, or any)
- Vs-Code with MinGw or any C++ Compiler

4. Steps for experiment/practical/Code:

```cpp
#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:



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:	