

44. Wildcard Matching

Given an input string (`s`) and a pattern (`p`), implement wildcard pattern matching with support for `'?'` and `'*'`.

`'?'` Matches any single character.

`'*'` Matches any sequence of characters (including the empty sequence).

The matching should cover the **entire** input string (not partial).

Note:

- `s` could be empty and contains only lowercase letters `a-z`.
- `p` could be empty and contains only lowercase letters `a-z`, and characters like `?` or `*`.

Example 1:

Input:

`s = "aa"`

`p = "a"`

Output: `false`

Explanation: `"a"` does not match the entire string `"aa"`.

Example 2:

Input:

`s = "aa"`

`p = "*"`

Output: `true`

Explanation: `'*'` matches any sequence.

Example 3:

Input:

`s = "cb"`

`p = "?a"`

Output: `false`

Explanation: `'?'` matches `'c'`, but the second letter is `'a'`, which does not match `'b'`.

Example 4:

Input:

`s = "adceb"`

`p = "*a*b"`

Output: `true`

Explanation: The first `'*'` matches the empty sequence, while the second `'*'` matches the substring `"dce"`.

Example 5:

Input :

s = "acdcb"

p = "a*c?b"

Output: false

Intution:

we will create a 2d dp matrix of s.length() * p.length()

we will solve this question by dynamic programming

dp[i][j] represents whether substring [0...i-1] of p matches with substring [0...j-1] of s

look at code you will understand clearly,

CODE:

```
bool isMatch(string s, string p) {
    int m = p.length();
    int n = s.length();
    bool dp[m+1][n+1];
    dp[0][0] = true;
    for(int i=1;i<=n;i++)
    {
        dp[0][i] = false;
    }
    for(int i=1;i<=m;i++){
        if(p[i-1] == '*')
            dp[i][0] = dp[i-1][0];
        else
            dp[i][0] = false;
    }
    for(int i=1;i<=m;i++)
        for(int j=1;j<=n;j++){
            if(p[i-1] == '*')
                dp[i][j] = dp[i-1][j] || dp[i][j-1] || dp[i-1][j-1];
            else if(p[i-1] == '?' || p[i-1] == s[j-1])
                dp[i][j] = dp[i-1][j-1];
            else
                dp[i][j] = false;
        }
    return dp[m][n];
}
```