

### Experiment No. - 1.3

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**Section/Group: A**

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**Subject Name: ADVANCED PROGRAMMING LAB**

**Subject Code: 20CSP-334**

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

You are given a string containing characters “A” and “B” only, your task is to change it into a string such that there are no adjacent matching characters, to do this , you are allowed to delete 0 or more characters in the string, your task is to find the minimum number of required deletions.

**2. Task to be done:**

You are given a string containing characters “A” and “B” only, your task is to change it into a string such that there are no adjacent matching characters, to do this , you are allowed to delete 0 or more characters in the string, your task is to find the minimum number of required deletions.

**3. Steps for practical:**

1. Include the header files.
2. Take the string as input.
3. Make a count variable to count to count the number of deletions required.
4. Iterate through the string’s each character through for loop , and compare , adjacent elements, if they are same then increase the count variable.

5. Finally, output the minimum number of characters required to be deleted, by printing count variable value.

#### 4. Code:

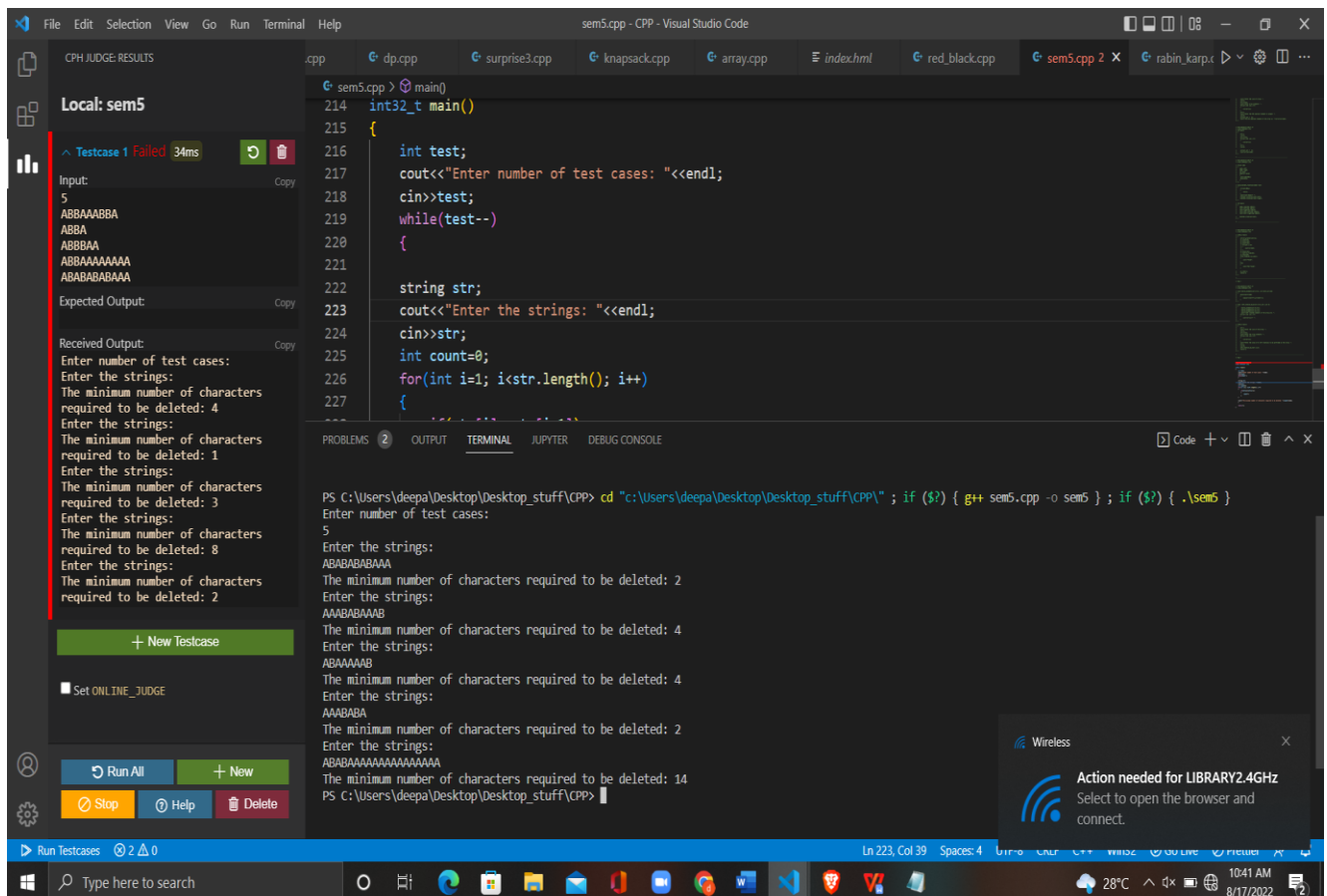
```
#include<bits/stdc++.h>
using namespace std;

int32_t main()
{
    int test;
    cout<<"Enter number of test cases: "<<endl;
    cin>>test;
    while(test-->0)
    {
        string str;
        cout<<"Enter the strings: "<<endl;
        cin>>str;
        int count=0;
        for(int i=1; i<str.length(); i++)
        {
            if(str[i]==str[i-1])
            {
                count++;
            }
        }

        cout<<"The minimum number of characters required to be deleted:
"<<count<<endl;
    }
}
```

```
    return 0;
}
```

## 5. Output:



The screenshot shows a Visual Studio Code editor with a C++ file named `sem5.cpp`. The code implements a function `main()` that takes an integer `test` and a string `str` as input. It prompts the user to enter the number of test cases and then for each case, it prompts for a string and the minimum number of characters to be deleted. The code then calculates the minimum number of deletions required for each string and prints the result.

The output window shows the execution results for a test case. The input string is `ABBAABBA` and the minimum number of characters required to be deleted is `4`. The output string is `ABBA`.

```
PS C:\Users\deepa\Desktop\Desktop_stuff\CPP> cd "c:\Users\deepa\Desktop\Desktop_stuff\CPP" ; if ($?) { g++ sem5.cpp -o sem5 } ; if ($?) { .\sem5 }
Enter number of test cases:
5
Enter the strings:
ABBAABBA
The minimum number of characters required to be deleted: 4
Enter the strings:
The minimum number of characters required to be deleted: 1
Enter the strings:
The minimum number of characters required to be deleted: 3
Enter the strings:
The minimum number of characters required to be deleted: 8
Enter the strings:
The minimum number of characters required to be deleted: 2
PS C:\Users\deepa\Desktop\Desktop_stuff\CPP>
```

PROBLEMS 2 OUTPUT TERMINAL JUPYTER DEBUG CONSOLE

Code + - [ ] ^ >

```
PS C:\Users\deepa\Desktop\Desktop_stuff\CPP> cd "c:\Users\deepa\Desktop\Desktop_stuff\CPP\" ; if ($?) { g++ sem5.cpp -o sem5 } ; if ($?) { .\sem5 }
Enter number of test cases:
5
Enter the strings:
ABABABABAAA
The minimum number of characters required to be deleted: 2
Enter the strings:
AAABABAAAB
The minimum number of characters required to be deleted: 4
Enter the strings:
ABAAAAAB
The minimum number of characters required to be deleted: 4
Enter the strings:
AAABABA
The minimum number of characters required to be deleted: 2
Enter the strings:
ABABAAAAAAAAAAAA
The minimum number of characters required to be deleted: 14
PS C:\Users\deepa\Desktop\Desktop_stuff\CPP> [ ]
```