LAB 09 TASKS (STRINGS)

Question#01) Write a C++ code to count the number of a's in a string?

Source Code

```cpp
#include <iostream>
#include <string>
using namespace std;

int main() {
    string input;
    int count = 0;

    cout << "Enter a string: ";
    getline(cin, input);

    for (char c : input) {
        if (c == 'a' || c == 'A') { // Counts both lowercase and uppercase 'a'
            count++;
        }
    }

    cout << "The number of 'a's in the string: " << count << endl;
    return 0;
}
```

Output

```
Enter a string: Assalamualaikum
The number of 'a's in the string: 5

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Process exited after 17.21 seconds with return value 0
Press any key to continue . . .
```

Question#02) Write a program in C++ to read a sentence and replace lowercase characters by uppercase and vice-versa.

Source Code

```cpp
#include <iostream>
#include <string>
using namespace std;

int main() {
    string input;
    cout << "Enter a sentence: ";
    getline(cin, input);

    for (char &c : input) {
        if (islower(c))
            c = toupper(c);
        else if (isupper(c))
            c = tolower(c);
    }

    cout << "Modified string: " << input << endl;
    return 0;
}
```

Output

```
Enter a sentence: hELLO wORLD!
Modified string: Hello World!

--------------------------------
Process exited after 233.2 seconds with return value 0
Press any key to continue . . .
```

Question #03) Write a C++ program to remove characters in String except.

Source Code

```cpp
#include <iostream>
#include <string>
using namespace std;

int main() {
    string input, result;
    cout << "Enter a string: ";
    getline(cin, input);

    for (char c : input) {
        if (isalpha(c)) {
            result += c;
        }
    }

    cout << "String with only alphabets: " << result << endl;
    return 0;
}
```

Output

```
Enter a string: H@e#ll0o
String with only alphabets: Hello

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Process exited after 20.93 seconds with return value 0
Press any key to continue . . .
```

Question #04) Write a C++ program to concatenate one string after the other without using any library function.

Source Code

```cpp
#include <iostream>
using namespace std;

int main() {
    char str1[100], str2[100], result[200];
    int i = 0, j = 0;

    cout << "Enter first string: ";
    cin.getline(str1, 100);
    cout << "Enter second string: ";
    cin.getline(str2, 100);

    while (str1[i] != '\0') {
        result[i] = str1[i];
        i++;
    }

    while (str2[j] != '\0') {
        result[i] = str2[j];
        i++;
        j++;
    }
    result[i] = '\0';

    cout << "Concatenated string: " << result << endl;
    return 0;
}
```

Output

```
Enter first string: Honey
Enter second string: Bee
Concatenated string: HoneyBee

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Process exited after 280.4 seconds with return value 0
Press any key to continue . . .
```

Question #05) Write a C++ program which stores names of five cities and print the names of only those cities which start from K.

Source Code

```cpp
#include <iostream>
#include <string>
using namespace std;

int main() {
    string cities[5];

    cout << "Enter names of 5 cities:\n";
    for (int i = 0; i < 5; i++) {
        cout << "City " << i + 1 << ": ";
        getline(cin, cities[i]);
    }

    cout << "\nCities starting with 'K':\n";
    for (const string &city : cities) {
        if (!city.empty() && (city[0] == 'K' || city[0] == 'k')) {
            cout << city << endl;
        }
    }
    return 0;
}
```

Output

```
Enter names of 5 cities:
City 1: Karachi
City 2: Lahore
City 3: Islamabad
City 4: Multan
City 5: Peshawar

Cities starting with 'K':
Karachi

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Process exited after 74.42 seconds with return value 0
Press any key to continue . . .
```