

Question –

Write a menu driven program to perform following string manipulation functions (without using inbuilt functions)

- a) Show address of each character in the string.
- b) Concatenate 2 strings.
- c) Compare 2 strings.
- d) Calculate length of the string.
- e) Convert all lowercase characters to uppercase.
- f) Reverse the string.
- g) Insert a string into another string at a specified position.

Code –

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

class PROVIDER
{
private:
    string str;

public:
    PROVIDER(string str)
    {
        this->str = str;
    }
    void showAddress()
    {
        cout << "Address: " << &str << endl;
    }
    void concatenate(string str1)
    {
        cout << "Concatenated String: " << str + str1 << endl;
    }
    void compare(string str1)
    {
        if (str == str1)
            cout << "Strings are equal" << endl;
        else
            cout << "Strings are not equal" << endl;
    }
}
```

```
}  
int calcLength()  
{  
    int counter = 0;  
    while (str[counter] != '\0')  
    {  
        counter++;  
    }  
    // cout << "Length of string: " << counter << endl;  
    return counter;  
}  
void toUpperCase()  
{  
    string str2 = "";  
    for (char ch : str)  
    {  
        str2 += toupper(ch);  
    }  
    cout << "Uppercase String: " << str2 << endl;  
}  
void reverse()  
{  
    string str2 = "";  
    for (int i = calcLength() - 1; i >= 0; i--)  
    {  
        str2 += str[i];  
    }  
    cout << "Reversed String: " << str2 << endl;  
}  
void insertString(string str1, int pos)  
{  
    string str2 = "";  
    string str3 = "";  
  
    for (int i = 0; i < pos; i++)  
    {  
        str2 += str[i];  
    }  
    for (int i = pos; i < calcLength(); i++)  
    {  
        str3 += str[i];  
    }  
    cout << "Inserted String: " << str2 + str1 + str3 << endl;  
}  
};
```

```
int main()
{
    PROVIDER p("123 Main St, City, Country");
    p.showAddress();
    p.concatenate(" - Apt 4B");
    p.compare("123 Main St, City, Country");
    cout << p.calcLength() << endl;
    p.toUpperCase();
    p.reverse();
    p.insertString(" - Apt 4B", 12);
    p.insertString(" - Apt 4B", 2);
    return 0;
}
```

Output –

```
Address: 0x59cdfff5e0
Concatenated String: 123 Main St, City, Country - Apt 4B
Strings are equal
26
Uppercase String: 123 MAIN ST, CITY, COUNTRY
Reversed String: yrtnuoC ,ytiC ,tS niaM 321
Inserted String: 123 Main St, - Apt 4B City, Country
Inserted String: 12 - Apt 4B3 Main St, City, Country
```