

Task 1:

Construct a class *String* which represents an array of characters.

Redefine operators +, += (to concatenate two *CString*), =, [], << (to display the array of characters), >> (to input a new string from keyboard), <, >, <=, >=, ==, != (to compare two strings).

Implement the following *main* function. Try to identify the lines where the copy constructor and the operator= are called.

```
int main(int argc, char* argv[])
{
    String s1 = "Univer";    String s2 = "cidade";
    String s3 = " de ";     String s4;
    s4 = "Aveiro";

    String uni = s1 + s2 + s3;
    uni += s4;
    String uni2, uni3;
    uni2 = uni3 = uni;
    uni = uni;
    cout << uni << uni2 << uni3 << endl;

    cout << "Ola! " + uni << endl;

    assert (s1 < s2);
    assert (s4 <= uni);
    assert (s2 > s3);
    assert (uni3 == uni);
    assert (s1 != s2);
    assert (s1 < "aaa");
    assert ("aaa" != s2);

    String empty;
    uni2 = empty;

    cout << s3[2] << endl;
    cout << (s1 + s2)[2] << endl;

    cout << "Introduza nome de uma cidade" << endl;
    cin >> s4;
    if (s4 == "Porto")
        s3[2] = 'o';

    cout << uni2+s1+s2+s3+s4 << endl;

    return 0;
}
```