1 How to represent and manipulate strings, i.e., a sequence of characters?

Please read Chapter 8.1, 8.2 on C-string, and C++ string class (of Problem Solving with C++, 8th edition, Walter Savitch) or other C++ testbooks.

Executive Summary.

(a) C-string is just an array of char, using terminating char to indicate the end. C standard library provides functions that work on them (strlen, strcpy, strcat, strcmp, ...).

Want to find out more? Run the following command in terminal: man strcat, which means show online manual for function strcat.

```
char greeting[20]={'H','E','L','L','O','\0','A','B'};
char anotherString[100];

cout <<greeting << endl; //only display HELLO, as the \0 terminate the C string.

strcpy (greeting, anotherString); //might overflow the array greetings,
// depends on how long is the string stored in anotherString
// This is source for a lot of bugs!
```

(b) C++ standard string class is a much more sophisticated StringVar class (that you’ve studied), and standardized (i.e., you can expect same interface in all different implementation of the library). It hides the detail from you, for example, how large is the array used for the object, growing the array when needed...

Want to find out more, for example, what constructors and member functions are provided for the string class: google C++ string!

```
string greetings ("Hello"); //constructor!
string name = "C++ Coder"; //constructor called, and assignment operator
// called
string banner = greetings+"","+name; //we don’t need to worry about overflowing
// array used by banner object
// programmers who overload operator+ took care of that!
banner += "!!!";

banner[0] = '*'; // modify the first char in the string banner to *
// i.e., string class has overload "element of" operator, []
cout <<banner<<endl; // this will display:
// *!!Hello,C++ Coder!!!
```