CS101-B
Semester Project
Deadline 27th December 2022
Group size: Max. 2 students

Problem Statement

Description

In this project, you have two tasks. In the first task, you are required to implement a C++ code which will implement various functions on ***char*** type pointers. This code will contain member functions to manipulate and access the ***char*** points representing various words/sentences in various ways. Whereas, in the second task, you have to utilize the function created in task 1 to implement a game.

Task-1

Requirements

1. Two or more character pointers (which is used to store the string).
2. Write all functions mentioned in Table 1.
3. In main, test all the functions. Print string(s) before and after every operation.

Note: Do not use C/C++ string library functions.

Suppose following two **char** pointers are initialized in the **main()**
char *a=”ABCDEFG”;
char *a=”1234567”;

Table 1: Functions

Functions	Usage/Operator	Example
add	String concatenation	c = add(a, b); // c = “ABCDEDG123456”
addEql	String concatenation	addEql(a,b); // a = “ABCDEDG123456”

get/setChar	Get/Set individual characters	char d = getChar(a,1);
		// d = ‘B’
		getChar(b,4,1);
		// b = “123416”

isEqual	Test string equality	bool t = isEqual(a,b);
		// t = false
		bool p = isEqual(a,a);
		// p = true

isGreater	String comparison	if(isGreater(a,b)) // Condition true
		{
		...
		...
		}

isSmaller	String comparison	if(isSmaller(a,b)) // Condition false
		{

		... ... }

getSubstring	Get sub-string	char *c;
		c = getSubstring(0, 3);
		// c = “ABCD”

shiftLeft	String left shift	char *c;
		c = shiftLeft (a, 1);
		// c = “A” and a = “BCDEFG”
		c = shiftLeft(a, 3);
		// c = “BCD” and a = “EFG”

shiftRight	String right shift	char *c;
		c = shiftRight(a, 1);
		// c = “G” and a = “ABCDEF”
		c = shiftRight(a, 3);
		// c = “FED” and a = “ABC”

Task-2

In this task you have to develop the game “Hang the Man”. The concept of the game is, computer will think of any country/city, it will display underscores which will be equivalent to the length of the country/city name the computer has thought of.

For example in case computer thinks China then it will display _ _ _ _ _

The user may enter any character as his option. If the chosen character is not in the name of city/country user looses 1 chance out of 8 possible chances of mistake and one component of human body is displayed per mistake (see the snap below). Otherwise, the chosen character is replaced in the underscore.

```
(·.·)
/|\
 |
/\
```

Note: You must NOT use any built in function for string processing.

Constraints:

1. Once a character is chosen, it cannot be chosen again.
2. Maximum number of mistakes is 11 (i.e., when the body is completed).
3. Display the number of chances left for the user
4. Clear the screen and display latest data on each iteration of user input.
5. At the end, show the result, i.e., win/loose with the correct answer that will be the name of the city/country.

Submission Guidelines:

- Please email your project at CS101B2022@gmail.com
- Email subject must be, CS101-Prj-YourRegNo2-YourRegNo2. For example CS101-Prj-2022234-2022111
- Your submission file must also be named CS101-Prj-YourRegNo1-YourRegNo2. For example CS101-Prj-2022234-2022111