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## 30.1 LAB: Drawing an upside down triangle



This section has been set as optional by your instructor.

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Write a recursive function called DrawTriangle() that outputs lines of '\*' to form an upside down isosceles triangle. Function DrawTriangle() has one parameter, an integer representing the base length of the triangle. Assume the base length is always odd and less than 20. Output 9 spaces before the first '\*' on the last line for correct formatting.

Hint: The number of '\*' decreases by 2 for every line drawn.

Ex: If the input of the program is:

3

the function DrawTriangle() outputs:

\*\*\*

Ex: If the input of the program is:

19

the function DrawTriangle() outputs:

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Note: No space is output before the first '\*' on the first line when the base length is 19.

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LAB ACTIVITY

30.1.1: LAB: Drawing an upside down triangle

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## main.cpp Load default template... 1 #include <iostream> 2 using namespace std; 4 /\* TODO: Write recursive DrawTriangle() function here. \*/ 5 6 7 int main() { int baseLength; 8 9 10 cin >> baseLength; DrawTriangle(baseLength); 11 12 return 0; 13 }

**Develop mode** 

**Submit mode** 

Run your program as often as you'd like, before submitting for grading. Below, type any needed input values in the first box, then click **Run program** and observe the program's output in the second box.

## Enter program input (optional)

If your code requires input values, provide them here.

Run program

Input (from above)

 $\rightarrow$ 

main.cpp
(Your program)

Outp

Program output displayed here

Coding trail of your work What is this?

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History of your effort will appear here once you begin working on this zyLab.

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## 30.2 LAB: Reverse a string



This section has been set as optional by your instructor.

Write a recursive function called ReverseString() that takes in a string as a parameter and returns the string in reversed order. The main function is provided to read a string from the user and call the ReverseString() function.

Ex: If the input of the program is:

```
Hello
```

the ReverseString() function returns and the program outputs:

```
Reverse of "Hello" is "olleH".
```

Ex: If the input of the program is:

```
Hello, world!
```

the ReverseString() function returns and the program outputs:

```
Reverse of "Hello, world!" is "!dlrow ,olleH".
```

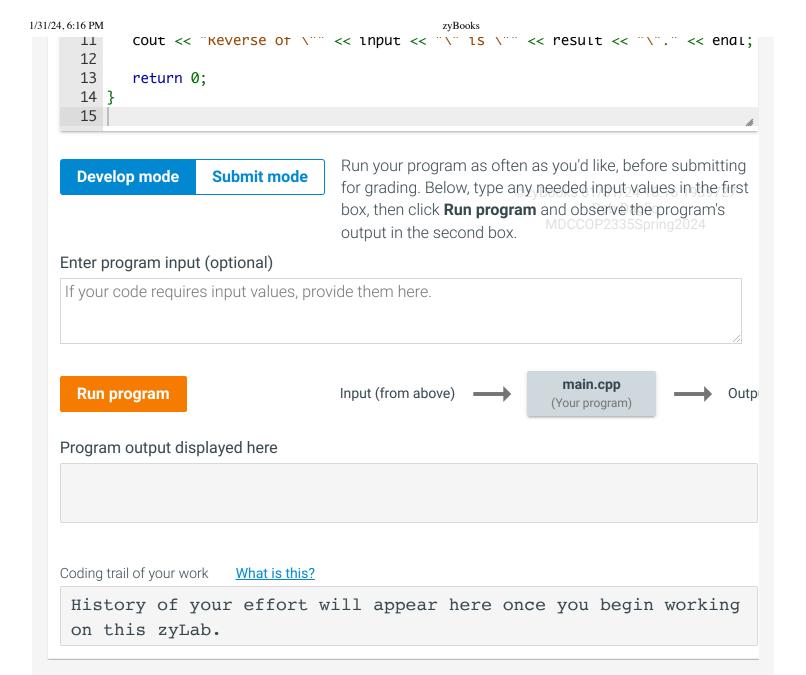
Hint: Move the first character to the end of the returning string and pass the remaining sub-string to the next ReverseString() function call.

LAB **ACTIVITY** 

30.2.1: LAB: Reverse a string



```
main.cpp
                                                               Load default template...
1 #include <iostream>
2 using namespace std;
4 /* TODO: Write recursive ReverseString() function here. */
6 int main() {
7
     string input, result;
8
9
     getline(cin, input);
     result = ReverseString(input);
```



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