ACSL

American Computer Science League

**008 2015 - 2016**

**All-Star #8**

**ACSL STR**

**PROBLEM:** For this program you will be asked to code an algorithm that replicates the ACSL STR function. The format and definition for the STR function is:

STR (float-expression, length, decimal) – Converts a given floating point number to a formatted string value**.**

LENGTH - Optional. The length of the field in which the string is to be printed. That includes all digits, decimals points, signs, etc. If length is not specified, it will default to 10.

DECIMAL - Optional. The number of decimal places to display in the printed string. If decimal is not specified, it will default to 0. The STR function will round the result if decimal is fewer than the number of decimal places in the float-expression and add 0’s if it is more.

If the float-expression can’t be printed in the given format, print number symbols in the format of length.decimal. If that is not possible, print ERROR.

A length value greater than the length of the float-expression is right-justified with # symbols filling in on the left.

Examples:

STR(12**,** 10, 0) prints ########12

STR(1223**,** 2) prints ##

STR(1223**,** 2, 2 ) prints ERROR

STR(125.5, 5, 2) prints ##.##

Rounding up occurs when the digit to the right is 5 or greater. Rounding down occurs when the digit to the right is less than 5. If the value is negative the opposite of the rule applies as -0.75 rounds down to -0.8 and -0.74 rounds up to -0.7.

**INPUT:** There will be 10 lines of input. Each line will contain a string that represents the argument(s) for the STR function.

**OUTPUT:** For each line of input print the result of applying the STR function.

**SAMPLE INPUT** **SAMPLE OUTPUT**  
1. 123 1. #######123  
2. 123.5 2. #######124  
3. 123.5, 5, 1 3. 123.5  
4. 123.456, 7, 3 4. 123.4565. 123.456, 7, 1 5. ##123.5  
6. 123.456, 7, 0 6. ####123  
7. 123.456, 7, 8 7. ERROR  
8. 123.456, 10, 2 8. ####123.46  
9. 123.45, 7, 3 9. 123.450  
10. -123.45, 7, 1 10. #-123.5

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**ACSL SQL**

**TEST DATA**

**TEST INPUT** **TEST OUTPUT**

1. 197, 5 1. ##197

2. 56, 4, 1 2. 56.0

3. 4.98, 6, 1 3. ###5.0

4. 27.36, 5, 3 4. #.###

5. 1, 1, 1 5. ERROR

6. 458.2, 7, 2 6. #458.20

7. 232.159, 6, 2 7. 232.16

8. -64.324, 5, 1 8. -64.3

9. 1, 2, 1 9. .#

10. 2405.938, 4 10. 2406