SET A

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Que-1)

Define a method which accepts a 4-digit value as number and checks whether the number is armstrong or not.

Armstrong number: An Armstrong number is an n-digit number that is equal to the sum of the nth powers of its digits.

For this program we need 4-digit armstrong number and is calculated as
input: 1634 is a 4-digit armstrong number defined as
1^4 + 6^4 + 3^4 + 4^4 = 1 + 1296 + 81 + 256 = 1634

Write the method with the following specifications:

Name of method checkArmStrong()
which accepts an integer value as argument and return the String as specified below.
Arguments: one argument of type integer
Return Type: an String value

Specifications: The value returned by the method checkArmStrong() is determined by the following rules:

If the input value is negative, return "-1" as string.
If the input value is not an 4-digit number, return "-2" as string.
If the input value is an 4-digit number and is an armstrong, return "ArmStrong Number" as string otherwise return "Not ArmStrong Number" as string.

Note: The string values you are returning are case sensitive.

Que-2)

Define a method which accepts a value as number and returns the sum of factors of the value.

Write the method with the following specifications:

Name of method getSumOfFactors() which accepts an integer value as argument and return a String.
Arguments: one argument of type integer
Return Type: integer value

Specifications: The value returned by the method getSumOfFactors() is determined by the following rules:

Value must not be negative. If yes, then return -1
Value must not be 0. If yes, then return -2.

SET B

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Que-1)

Define a Method that checks for whether a given input is a prime number or not, and return a string.

Write the method with following specifications

Name of method : checkPrime
Arguments : 1 Integer Argument
Return Type : A String value

Value must not be negative. If yes, then return -1 as string.
Value must not be 0 or 1. If yes, then return -2 as string.
If value is a prime number, then return true as string otherwise return false as string.

Que-2)

Define a method which accepts 1 numeric argument and returns a pattern of numbers as a string.

Write the method with following specifications

Name of method : NumberPattern4
Arguments : 1 Integer Argument // Represents Number of Rows.
Return Type : A String value

Value must not be negative. If yes, then return -1 as string.
Value must not be 0. If yes, then return -2 as string.
Value is rows.
Pattern must be created using numbers separated by single blankspace
Example :

Input: 5
Output:
1
1 2
3 5 8
13 21 34 55
89 144 233 377 610

SET C

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Que-1)

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Define a method which returns a string of all numbers between 1 and the given input value.

Write the method with following specifications

Name of method : getFourPerLine
Arguments : 1 argument of type int
Return Type : A String value

Value must not be negative. If yes, then return -1 as string.
Value must not be 0. If yes, then return -2 as string.
Value must not be greater than 99. If yes, then return -3 as string.
Numbers in range must be returned as one string with every value separated by single blankspace.
Ensure a new line after every set of 4 values.

Que-2)

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Define a method which returns Collatz sequence for a give input value.

Write the method with the following specifications:

Name of method : getCollatzSequence(int num) // which accepts an integer value as argument and return a string.
Arguments: one argument of type integer
Return Type: string

Specifications: The value returned by the method getCollatzSequence() is determined by the following rules:

If the given value is 5, return a string of Collatz Sequence as 5 16 8 4 2 1
If the given value is negative, return "Error"

Note:

At each stage you must add the numbers to the output string and form the output as shown above.

The numbers in the output string must be separated by a space as shown above.

The output must include the given number and 1.

If the number does not converge to 1 in 100 tries the return the String Does not Converge.