Example Calculation Question - use with various platforms and frameworks

**QUESTION ONE - Dangerous Animals**

The purpose of this method is to give Zoo keepers a rating number for how dangerous an animal is so they can be especially careful with the most dangerous animals.

Note: This is NOT based on any real-life animal management experience and should not be used for that purpose.

|  |  |
| --- | --- |
| Inputs | **length** in metres  **weight** in kilograms  **yearOfBirth**  **speciesCode** |
| Output | **dangerScore** |
| Main Calculation | **dangerScore = ((weight/length)\* 5) + ((age/weight) \* speciesFactor)**  Inputs need processing to give derived values to use in the formula  **age** is the age of the animal measured in years. You need to work this out from the input **yearOfBirth**  You need to work out the **speciesFactor** value from the input **speciesCode** using data supplied in the table below: |

Species Input SpeciesCode SpeciesFactor

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Snake "sn" 6

Tiger "ti" 5

Lion "li" 4.3

Meerkat "me" 3.7

Kiwi "ki" 12.4

Include code for any relevant validations.

Return suitable error messages for error conditions.  
Include relevant self-documentation eg comments, helpful variable names, clear constructs.

You need to provide a comment that includes test data in a format or with instructions on how to run that test data.

Create and test this calculator in the framework and language as specified by the lecturer/parent question. Show your lecturer.

**QUESTION TWO - Client Consumer**

Consume the above remote service method with a client   
as specified by the lecturer/parent question

This client web page or app will take user input of **length**, **weight**, **year of birth** and **species** and use the remote service of QUESTION ONE to calculate and return the **danger score.**

Follow this design for the UI

|  |  |
| --- | --- |
| Title and other heading elements. | |
| Length in metres: | [textbox] |
| Weight in kilograms: | [textbox] |
| Year of Birth | [textbox] |
| Species: | [dropdown list] |
|  | [Submit] (button) |
| Danger Score: | [readonly textbox OR label] |

Your code and/or webpage needs to VALIDATE in some way that these inputs are valid.

Include relevant self-documentation eg comments, helpful variable names, clear constructs.

END OF TEST