

Entrance Quiz

Write your answers in your language(s) of choice, pseudo-code only if necessary.

1) Write the method **sumSquares** which takes two integers as inputs. The first integer is guaranteed to be less than the second integer. **sumSquares** *does not print anything*. It returns the sum of the squares of the integers between the two inputs (inclusive).

Here are sample usages:

```
print sumSquares(1,5)           // prints 55 (1 + 4 + 9 + 16 + 25)
print sumSquares(-2,2)         // prints 10 (4 + 1 + 0 + 1 + 4)
```

2) Write the method **sumList** which takes an array of real numbers as its input. **sumList** *should not print anything*, but it should return the sum of the elements in the list. You can assume that there's a method called "Length," or a function that takes a one-dimensional array as input and returns the number of elements in the array.

Usage:

```
array<float> theList = new array<float>()
theList.add(1.5);
theList.add(2.0);
theList.add(3.2);
theList.add(4.8);
print sumList(theList) // prints 11.5 (1.5 + 2.0 + 3.2 + 4.8)
```

3) Write the method **initArray** which takes *any* two-dimensional array of integers as its input. **initArray** returns nothing; the result of the call to **initArray** is that all of the elements are set to the products of their indices *except when the row and column indices are equal, which should be 0*. You can assume that the “Length” function is still available to use.

Usage:

```
int[][] array2D = new int[3][6];
initArray(array2D);           // initializer -result-> 0  2  3
print array2D[2][4]           // prints 8 (2*4)         2  0  6
print array2D[3][5]           // prints 15 (3*5)        3  6  0
print array2D[3][3]           // prints 0 (as above)     4  8 12
                                5 10 15
```

4) Below is the truth table for the boolean operator XOR, which takes as input two boolean (True or False) values. Write a function **xor(A, B)** that returns the XOR of its two inputs.

A	B	xor(A,B)
TRUE	TRUE	FALSE
TRUE	FALSE	TRUE
FALSE	TRUE	TRUE
FALSE	FALSE	FALSE