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Homework 2 Written Answers Exercise 1

Exercise 1

To better understand how to compute the output of HelloWorld(uint[], bool) → ([1993, 1994], true), let's take a look at the provided algorithm on slide 11. We should sum the sizes of: the function selector, the memory location of uint[], the bool, the length of the array, and the values in the array. In our case, we have 4 bytes for the function selector, 32 bytes for the "pointer" (which, in a nutshell, tells where to look for the array data), 32 bytes for the bool, 32 bytes for the array length, and finally, as the uint[] contains 2 elements (from slide 10), we have 2 times 32 bytes. Thus, 4 + 32 + 32 + 32 + (2x32) = 164 bytes.

When using encodePacked (which is characterized by no zero padding, no length and no memory offset, as well as no decode equivalent due to ambiguity, as seen in Class), we drastically reduce the size of the output call. It will only take into account the size of the elements in the array and the bool. Thus, we will obtain (2 x 32) + 1 = 65 bytes.