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Assignment 10 - Report

Java:

Java defaults to using double for variables that contains decimals and does not support unsigned integers. Unlike C++, Java does not have pointers and does not allow direct memory access. Because of this, in order to convert an IEEE 754 floating point number to an integer while keeping the same bit pattern, a function call is required instead of simply “type punning” as with C++.

Javascript:

The main difference between C++ and JavaScript is the ability to directly manipulate addresses and their values. For JavaScript, the only way of binary manipulation is through the use of DataView. DataView provides an interface to manipulate ArrayBuffer; not memory. So, we pretty much never directly manipulate the memory itself. In addition, variables in JavaScript are not strongly typed as in C++ and thus, Javascript does not require typecasting between number type such as integer, float, and double. JavaScript is also typically interpreted rather than compiled. Furthermore, floating point numbers in JavaScript are 64 bits, as opposed to the 32 bits used by many common C++ implementations.

Python:

The difference between C++ and Python is there are too many things to import in Python. Python also cares too much about whitespace and alignment. Another difference is how the variables are not declared in Python and how much casting was needed when printing out values. The length also needed to be declared because you can’t access the bit format of the float numbers therefore it was stored in a bitstring so that we could access it. Also, we need to cast any numbers into a string before we can use it inside print method.