

# EECS 4313 Assignment 1

Q1.

- A) We see that python has the only difference in the values of modulo but JAVA and C++. The value of modulo is different as python (answer given = 1) uses a different interpretation of “%” than the rest (answer given = -2).
- B) Again, we see that the integer division provides a different value in python (answer as -4) than the division in JAVA and C++ (answer given = -3). These findings are directly related to task 1 as we first calculate the remainder while performing the “%” in Java and C++ as it is considered the “remainder” operator in it.
- C) In JavaScript we can replicate the same division results from all the languages by using the Math.Ceil and Math.floor functions as a design choice which help us convert the result from a decimal to an integer result as done in the other languages but according to their result, we match we language used what type of processing on their result. In Task 1 we calculate the remainder of the operation “%” but not in python here we get actual modulo operation as programmed in the language.
- D) As python performs a very similar operation on the result of the “%” operation like “floor”. This floors the result from -3.6 -> -4 (-4 comes after -3 in negative numbers we count the opposite way). In Java and C++, the result is calculated without the – sign and converted to the nearest whole integer i.e., -3.6 -> -3. This is like the “Ceil” operation which rounds it to the highest whole value because we are doing integer division. In java and C++ when we perform integer division the results are automatically rounded off to their whole number values according to the left-hand side of the decimal.
- E)
  - 1. Developers need to be informed before using any language in pairing with another one and need to test their program extensively while using built in

functions and see if their programs work accordingly. Developers can also use math libraries which have defined functions for all the languages.

2. Standards can be set for any professional environment to use specific Math libraries and provide cross platform support from that single library maintained by one organization and specific compilers can be used that tackle these issues and can only be used in the professional development environments.