Assignment -4

1. Bitwise Complement :

Bitwise complement, also known as bitwise negation, is a unary operation that flips each bit in a binary number, changing 1s to 0s and 0s to 1s. It is denoted by the tilde (~) symbol.

To illustrate the concept, let's take an example of a 8-bit binary number

Bitwise complement: 11010001

So, the bitwise complement of the binary number 00101110 is 11010001

2. Logical Compenent:

In logic, the complement of a proposition is a statement that is true if and only if the original statementis false. It is denoted by the symbol ¬ (negation). The logical complement of a proposition can be understood as the opposite or contradictory statement.

For example, let's consider the proposition "It is raining." The logical complement of this statement would be "It is not raining." If the original statement is true (i.e., it is indeed raining), then the complement is false (it is not the case that it is not raining). Conversely, if the original statement is false (i.e., it is not raining), then the complement is true (it is indeed not raining).

Here's a truth table illustrating the logical complement:P

(Original Statement) ¬P (Complement)

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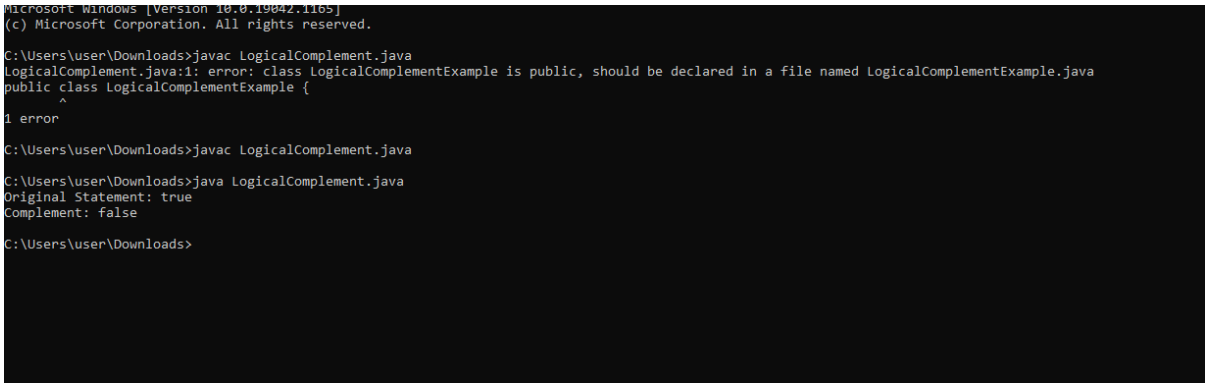
True

Fals

eFalse true



3. What is the value greater than long,how to store it ,can we Store it or not?how?

In programming languages, the long data type typically represents a signed integer that can hold a larger range of values than the standard int data type. However, there are situations where you may need to work with values that exceed the range of long. In such cases, you can use libraries or data structures specifically designed to handle large numbers.

4. what is range of float and double

The float and double data types in most programming languages are used to represent floating-point numbers, which are numbers with fractional parts or numbers that can be expressed in scientific notation. The range and precision of float and double values depend on the specific data type and the implementation of the programming language or platform.

In general, the float data type is a 32-bit floating-point type, and the double data type is a 64-bit floating-point type. Here's an overview of their ranges and precision:

float:

Range: Approximately ±1.4e-45 to

±3.4e38Precision: Roughly 7 decimal

digits

double:

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Range: Approximately ±4.9e-324 to ±1.7e308

Precision: Roughly 15 decimal digits