

CMSC 245 – Principles of Programming Languages

Lab#2: Conditional Expressions in C, Java, Python, and other languages

In this lab you will explore the ternary conditional expressions in C, Java, Python, and the language you are studying with your group.

Ternary Conditional Expressions

Consider the following statement (in C, C++, Java, etc.) to compute the maximum of two values *a* and *b* and place it in a variable *max*:

```
if (a > b)
    max = a;
else
    max = b
```

The ?: Operator

In C, C++, Java, and many other languages there is a ternary (requires 3 operands) conditional expression that has the following syntax:

```
<condition> ? <expression1> : <expression2>
```

The above is an expression, it yields a value which is either the result of *<expression1>* (if *<condition>* is true), or the value of *<expression2>* (if it is false). Thus we can write the above if-statement using the *?:* operator as below:

```
max = a > b ? a : b;
```

Question 1: What does the following do (in C):

```
printf("It will take %d minute%c\n", m, (m > 1) ? "s" : "");
```

Question 2: Does Python have a conditional expression like the one above? Yes/No?

If Yes, write the computation of *max* using the conditional operator.

Question 3: Does the language you are studying in your group have a conditional expression like the one above? Yes/No?

If Yes, write the computation of *max* using the conditional operator.