Fundamental Programming Structures in Java
IFT 194: Lab 2

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Pre-Lab Exercises

A. Textbook Sections 5.1–5.3

1. We are tasked with rewriting various conditions in valid Java syntax.

   (a) The condition `x > y > z` may be written in Java as `x > y && y > z`, i.e. we need to join the two comparisons by the $\wedge$–logical operator. This is a result of the type of objects the relational operators act upon; because `x > y` returns a `boolean` type, we receive a compile-time error (invalid types).

   Interestingly enough, this *is* valid Python syntax due its recursive comp_op Grammar definition, so we may (hypothetically) write an inifinite sequence `expr comp_op ... expr comp_op expr`. $\wedge$–logical operators are automatically inserted.

   (b) The statement "x and y are both less than 0" may quite simply be expressed as `x < 0 && y < 0`.

   (c) The statement "neither x nor y are less than 0" may be expressed as `x >= 0 && y >= 0`, or the negation of the previous predicate, i.e. `!(x < 0 && y < 0)`. I think the former is more readable, however.

   (d) The statement "x equals y but not z" may be written as `x == y && x != z`.

2.

Conclusion

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