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Operator Precedence

Bachelor of Information Systems
Institut Teknologi Del

Learning Objective(s)

....

This material should address the following question(s).

> What is operator precedence?

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Discussion Point

Operator **Precedence**:
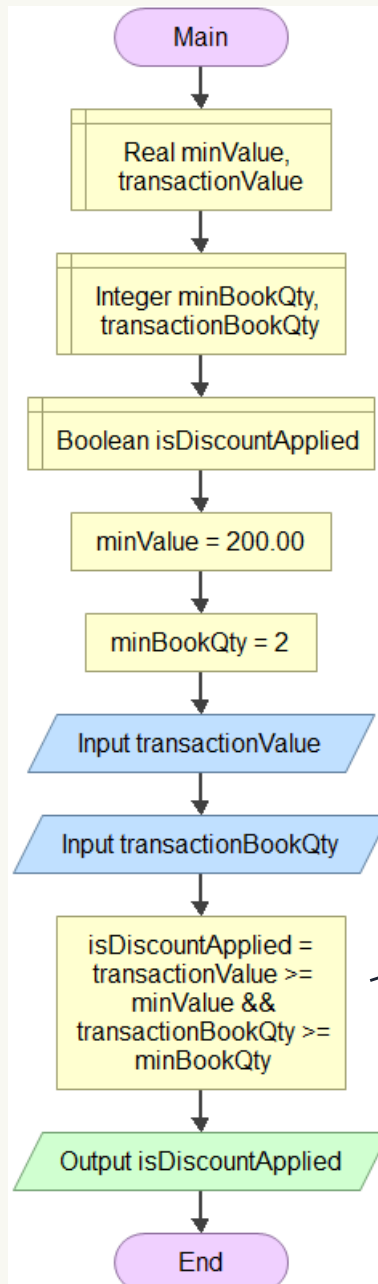The Core Concepts.

Problem

- A book store is currently making a clearance sale.
  - The discount is gigantic, **50%**.

- To be eligible for the discount, a transaction is must be at least worth $200 **and consists of at least 2 books**.

Possible Solution

- The solution combines:
  - Two **relational** operations; and
  - A **logical** operation.

multiple operations in a single instruction.

| 1st operator | 2nd operator | 3rd operator |

```
transactionValue >= minValue && transactionBookQty >= minBookQty
      ??              200              ??                    2
```

Which operation should go **first**?
Which operation **precedes** the others?

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Question

What is operator **precedence**?

Definition

....

Operator precedence *dictates which operator gets prioritized over the others.*

The precedence depends on the programming language

Operator Precedence

Level	Operator	Symbol
8	Unary	- !
7	Exponential	^
6	Multiplication, division, and modulo	* / %
5	Addition and subtraction	+ -
4	Concatenation	&
3	Relational	== != > >= < <=
2	Conjunction	&&
1	Disjunction	||

prioritized, lvl 3.

this operator will
run later, lvl.2.

prioritized, lvl 3.

```
transactionValue >= minValue && transactionBookQty >= minBookQty
        ??                200               ??                       2
```

The 1st and the 3rd operations are prioritized
followed by the 2nd operation.

When all of the operators are in the same level then the evaluation groes from left-to-right direction.

$$r = x + y - z$$

In the example, the 1st operation is evaluated first followed by the 2nd operation.

Use **parentheses** ( ) to override the prioritization.

$$r = x + (y - z)$$

Final **Thoughts.**

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Conclusion

1. Operator precedence dictates which operator gets prioritized over the others.

2. Use parentheses to override the prioritization.

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References

Wassberg, J. (2020). Computer Programming for Absolute Beginners. Packt.

Operators – Flowgorithm
http://www.flowgorithm.org/documentation/operators.html

– E O F –

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Inovasi Modul Digital 2022