

 visual programming

# Operators



Bachelor of Information Systems  
Institut Teknologi Del



# Learning Objective(s)

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*This material should address the following question(s).*

- What are operators and their importance?
- What are the types of operators?

# Discussion Point

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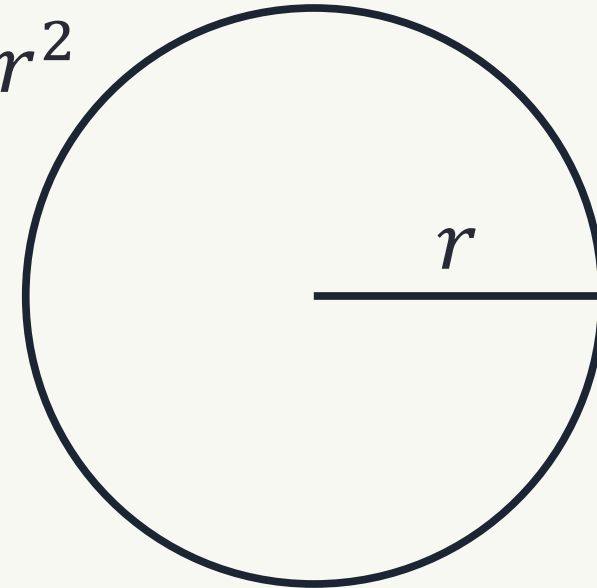
**Operators:**  
The Core Concepts.



# Problem

- In the circle area calculation, there are three **operations**, using three distinct **operators** on the three values.
- The three operators are:
  - $\times$  multiplication;
  - $^$  exponential, and
  - $=$  assignment.

$$A = \pi r^2$$



using **assignment** operator.

assignment operation

using **exponential** operator.

exponential operation

$$A = \pi r^2$$

multiplication operation

using **multiplication** operator.



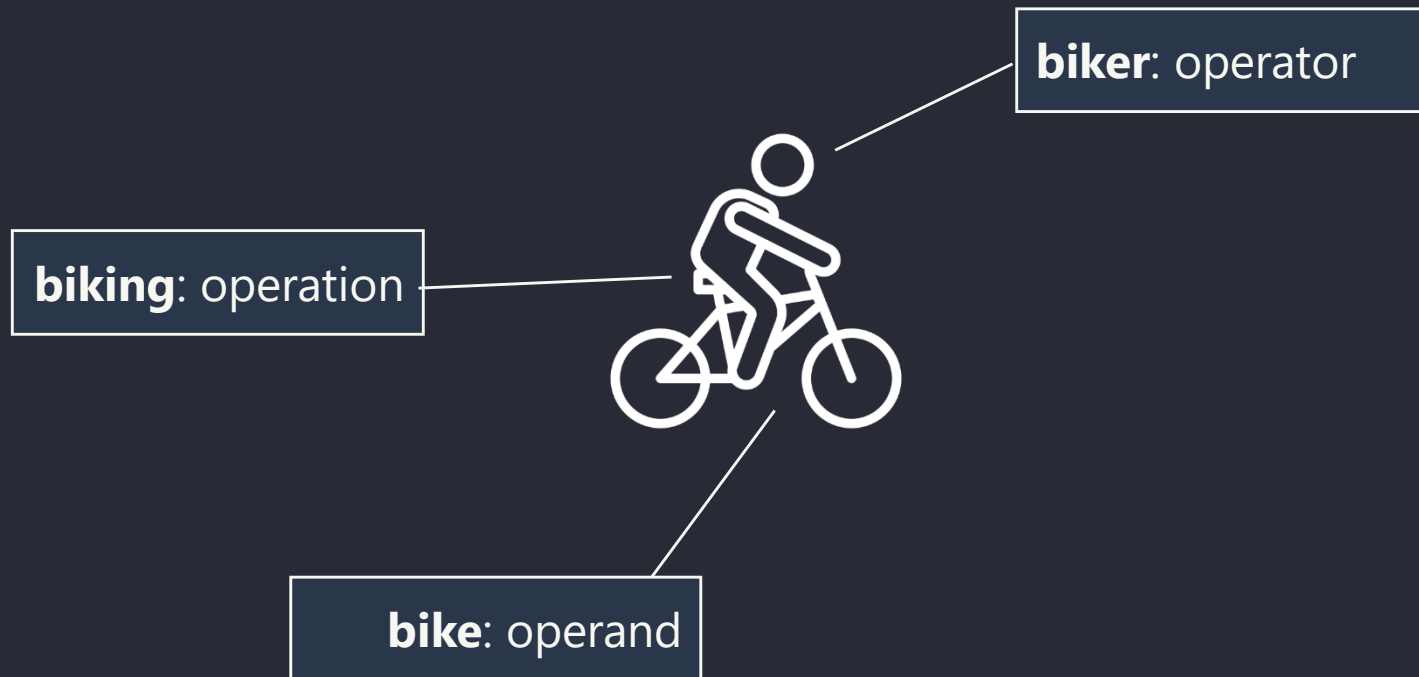
# Question

What is an **operator**?

# Definition

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*An **operator** operates one or more operands (values), including values hold by variables or constants.*





# Discussion Point

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**Types** of Operator.

# Types of Operator

- Nature of the operation:
  - **Arithmetic** operators.
  - **Assignment** operator.
  - **Logical** operators.
  - **Relational** operators.
  - **Concatenation** operator.
  - ***Increment/decrement*** operators.
  - ***Bitwise*** operators.
- The number of operand:
  - **Unary** → one operand.
  - **Binary** → two operands.
  - **Ternary** → three operands.

# Final Thoughts.



# Conclusion

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1. An operator is used to operate value(s).
2. Operators are clustered based on:
  - The nature of the operation.
    - Assignment, arithmetic, logical, relational, and concatenation.
    - Increment/decrement and bitwise are not supported by Flowgorithm.
  - The number of operand they operate.
    - Unary, binary, and ternary.

# References

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

*Operators – Flowgorithm*

<http://www.flowgorithm.org/documentation/operators.html>



– EOF –



# Course Lecturer

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@dasar-pemrograman



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