# Learning Objective(s)

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

❯ What is concatenation operator?

❯ How to use the concatenation operator?
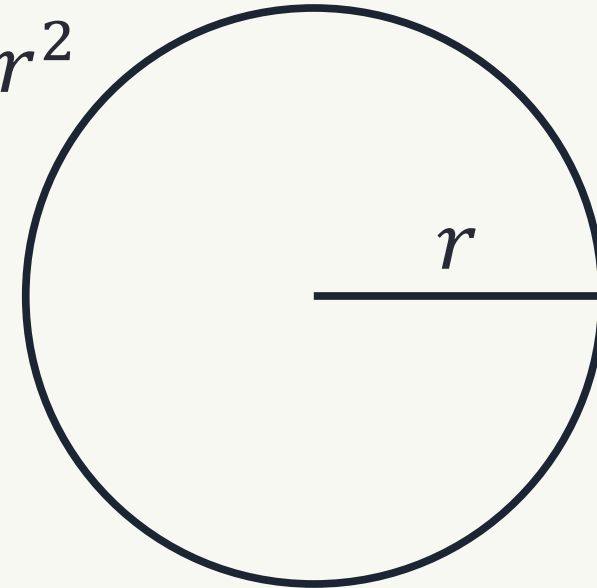
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# Discussion Point

**Concatenation** operator:
The Core Concepts.

# Problem

- In the circle area calculation, we have three values, some of them described with metrics.
  - $\pi$ has no metric.
  - $r$ and $A$ have.
    - E.g. cm and cm$^2$ respectively.

- Variables or constants store values **without** the metrics.

$$A = \pi r^2$$

# Joining Texts

- For the user experience sake, sometimes, we need to put a little sugary.
  - E.g. displaying the metrics together with the values.

- We need to **join** the value and the metric into a single text.
  - **Concatenating** the value and the metric.

Without metric          `78.54`

With metric    `78.54` *cm²*

in some instances, this form is preferred.

# Question

What is **concatenation** operator?

# Definition

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*Concatenation operator* *is a binary operator that joins two values into a new textual value.*

This value is fractional but seen as textual value.

$$78.54 \quad cm^2$$

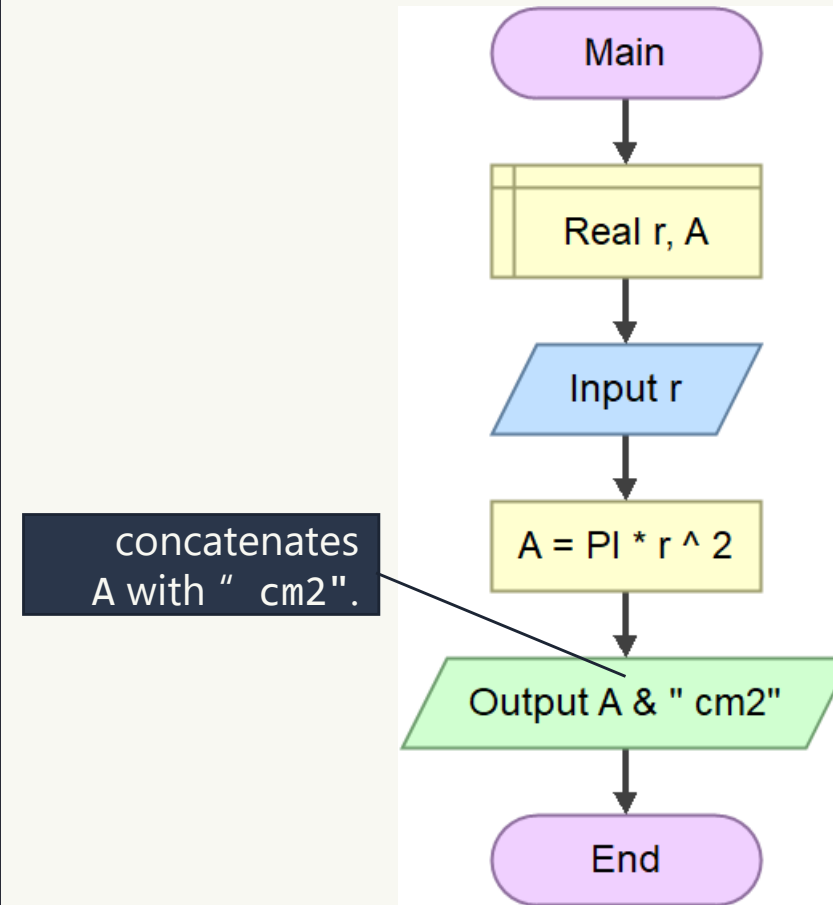Glued with another value also seen as a text.

# Concatenation Operator

- Concatenation is like **gluing** a value behind the other in textual context.

- The support for this operator is vary from language to language.
  - Please consult the language specifications.

- Specific to Flowgorithm, the ampersand (&) symbol is used to concatenate values.
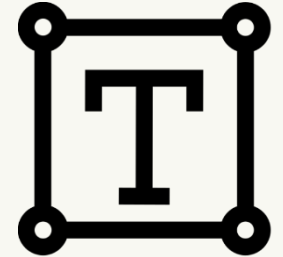
# Hands On

- In the example, the value stored in the variable A is joined or concatenated with " cm2".

- The concatenation operator is symbolized with the &.

- Can we concatenate another, say integer value, before A?



Main

Real r, A

Input r

A = PI * r ^ 2

concatenates A with " cm2".

Output A & " cm2"

End

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Final **Thoughts.**

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# Conclusion

1. The concatenation operator joins two values into a single text.

2. The support to this operator vary from language to language.

# References

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

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

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# Supported by

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