

# Programming Language Implementation – Introduction

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# Recap

So far, we have learned:

- 1 A set of programming language features (mostly related to types) that could help in classification of PLs
- 2 Functional programming
- 3 Logic programming

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<sup>1</sup>inspired from a premier conference in the area of programming languages

# Recap

So far, we have learned:

- 1 A set of programming language features (mostly related to types) that could help in classification of PLs
- 2 Functional programming
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Helpful in:

- 1 Learning a new PL
- 2 Choice of a new PL for programming
- 3 Programming Language Design and implementation (PLDI<sup>1</sup>)

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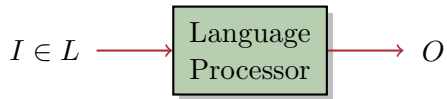
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# Preview of the Rest of the Course

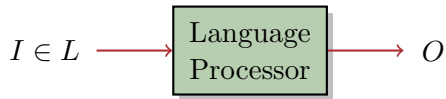
## PLDI

- 1 Knowledges + skills for implementing programming languages
- 2 **Language processors.**
  - Software systems embodying the concepts of a programming language
  - Input: text in the implemented (input) language
  - Output: Some action based on the input
- 3 **Examples.** Compilers, interpreters, editors, IDEs, browsers, RDBMS query processors, OS command processors etc.

# Language Processors

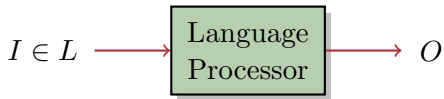


# Language Processors



- Input ( $I$ ), Input text
- Input Language ( $L$ ), Implemented language
- Output ( $O$ )

# Language Processors

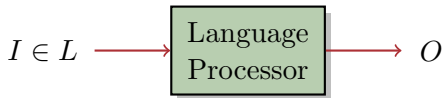


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## Two Languages:

- Input Language ( $L$ ), Implemented language
- Implementation Language

# Language Processors



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## Two Languages:

- Input Language ( $L$ ), Implemented language
- Implementation Language
- Examples:

	Input Language	Implementation Language
GCC	C	C
COQ	Gallina	OCaml
ESTEREL	ESTEREL	OCaml



## Next Module

An Example of Language Processors – Compilers