

# Lecture 27 – Course Review

## COSE212: Programming Languages

Jihyeok Park



2023 Fall

## Learn **Essential Concepts** of **Programming Languages**

- Why?
  - To **learn new programming languages** quickly.
  - To **evaluate** and pick the best language for a given task.
  - To design a **specialized language** for a specific task.
- How?

### By Implementing **Interpreters** using **Scala**

- You will learn how to define **syntax** and **semantics** of target languages.
- You will implement **interpreters** of the target languages.
- You will use **Scala** as an implementation language.

**(Part 1)**  
**Untyped Languages**

**(Part 2)**  
**Typed Languages**

**Arithmetic  
Expressions**

**AE**

(Lecture 2 & 3)

**(Part 1)**  
**Untyped Languages**

**(Part 2)**  
**Typed Languages**

**Arithmetic  
Expressions**

**AE**

(Lecture 2 & 3)



**VAE**

(Lecture 4 & 5)

**Identifiers**

## (Part 1) Untyped Languages

## (Part 2) Typed Languages

Arithmetic  
Expressions

**AE**

(Lecture 2 & 3)



**VAE**

(Lecture 4 & 5)

Identifiers



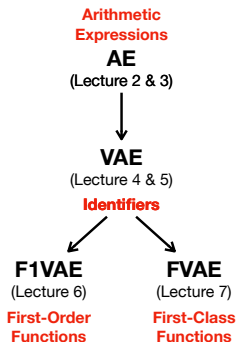
**F1VAE**

(Lecture 6)

First-Order  
Functions

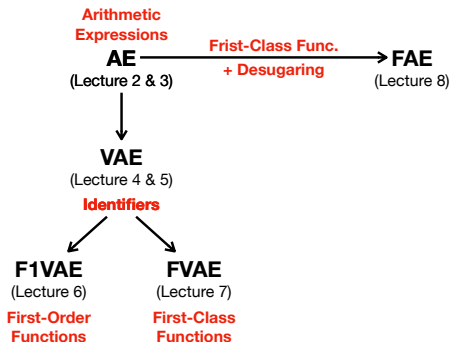
**(Part 1)**  
**Untyped Languages**

**(Part 2)**  
**Typed Languages**



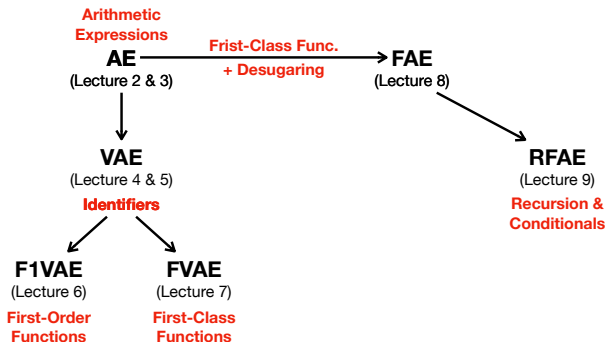
## (Part 1) Untyped Languages

## (Part 2) Typed Languages



**(Part 1)**  
**Untyped Languages**

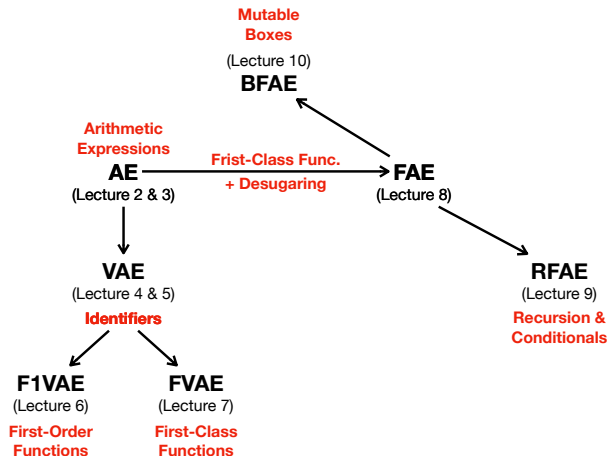
**(Part 2)**  
**Typed Languages**





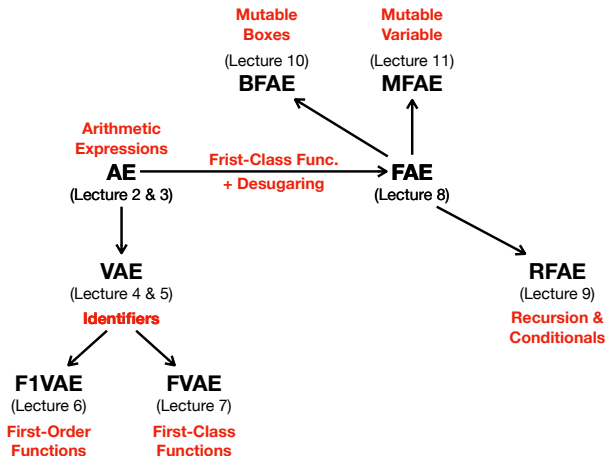
**(Part 1)**  
**Untyped Languages**

**(Part 2)**  
**Typed Languages**



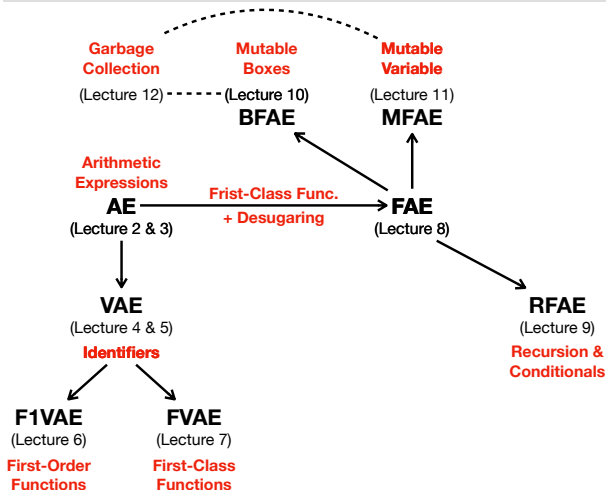
## (Part 1) Untyped Languages

## (Part 2) Typed Languages



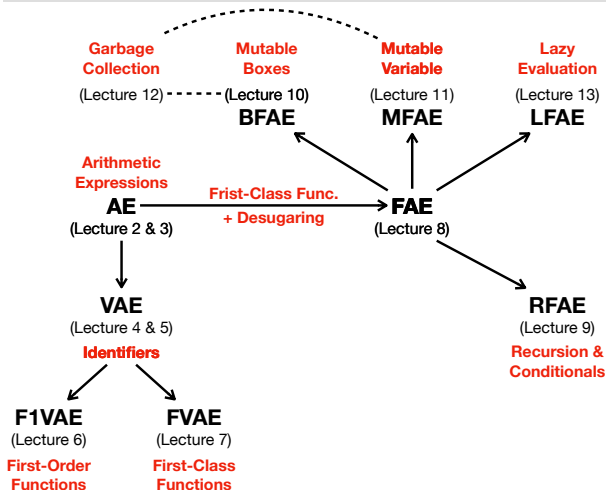
## (Part 1) Untyped Languages

## (Part 2) Typed Languages



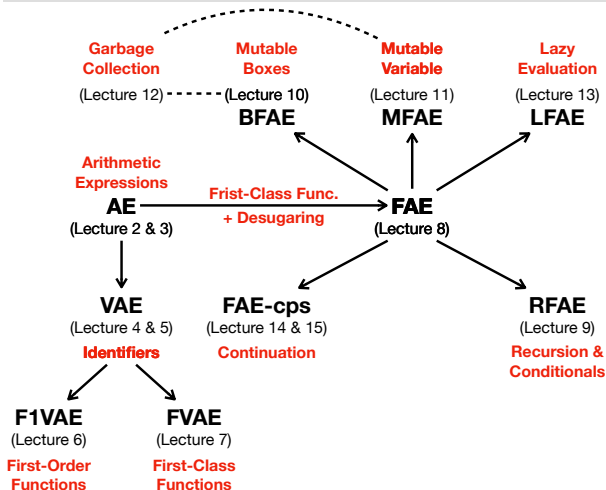
## (Part 1) Untyped Languages

## (Part 2) Typed Languages



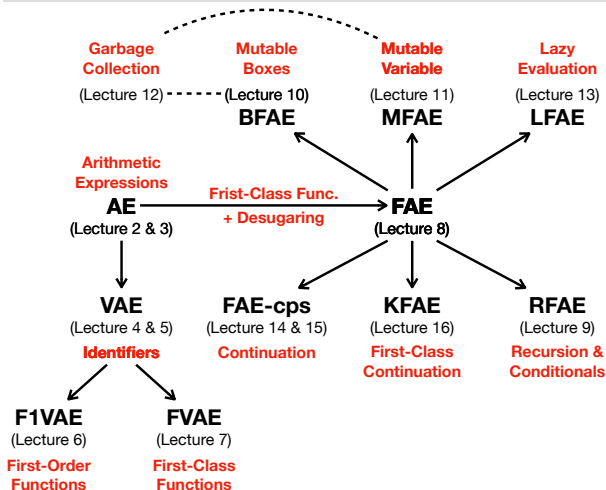
## (Part 1) Untyped Languages

## (Part 2) Typed Languages



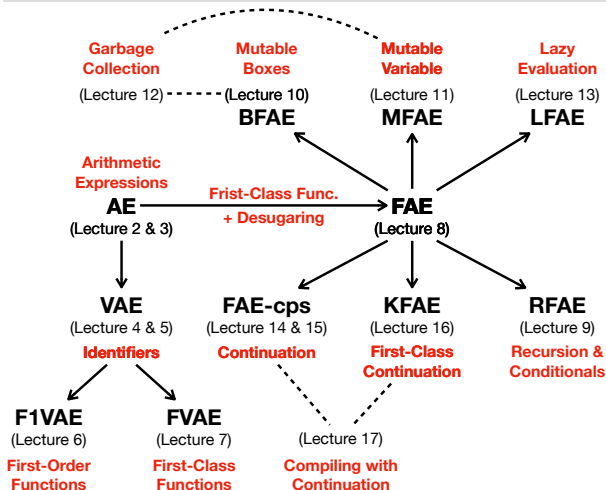
## (Part 1) Untyped Languages

## (Part 2) Typed Languages



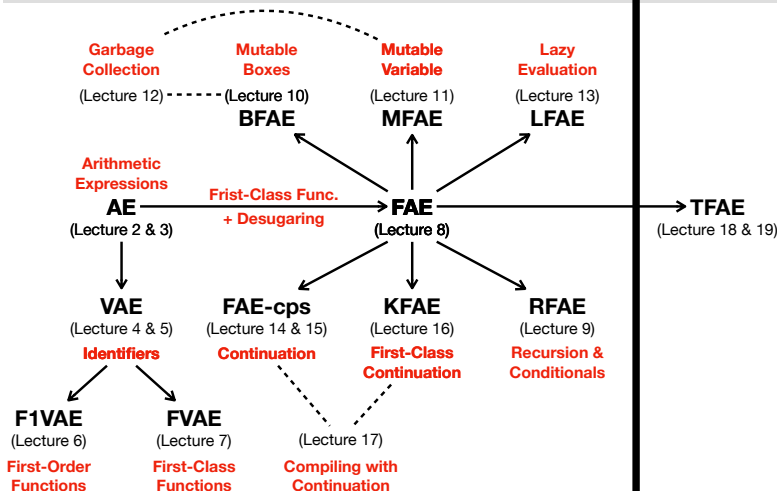
## (Part 1) Untyped Languages

## (Part 2) Typed Languages



## (Part 1) Untyped Languages

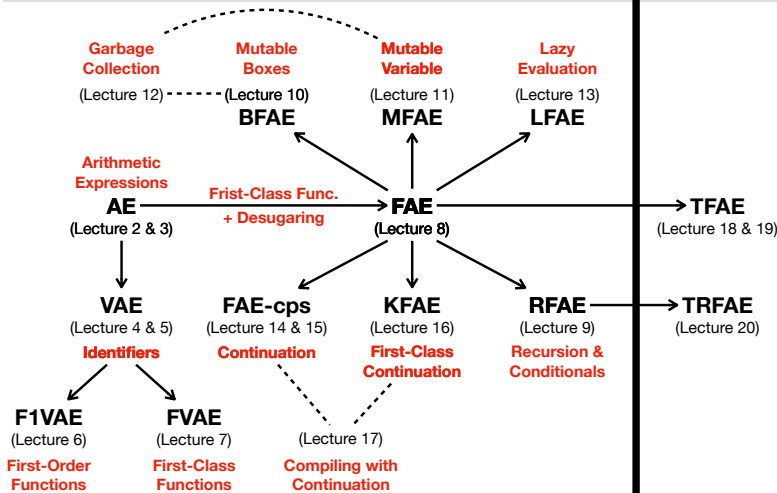
## (Part 2) Typed Languages

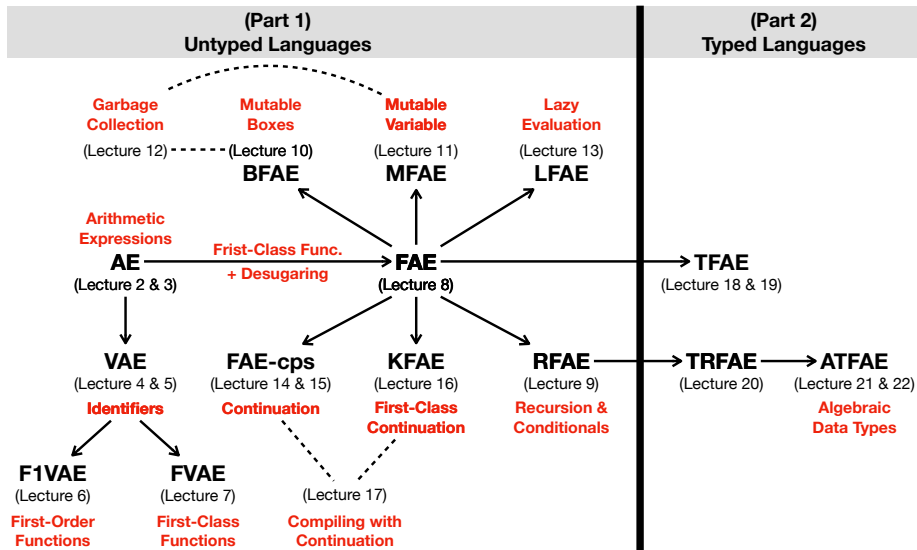


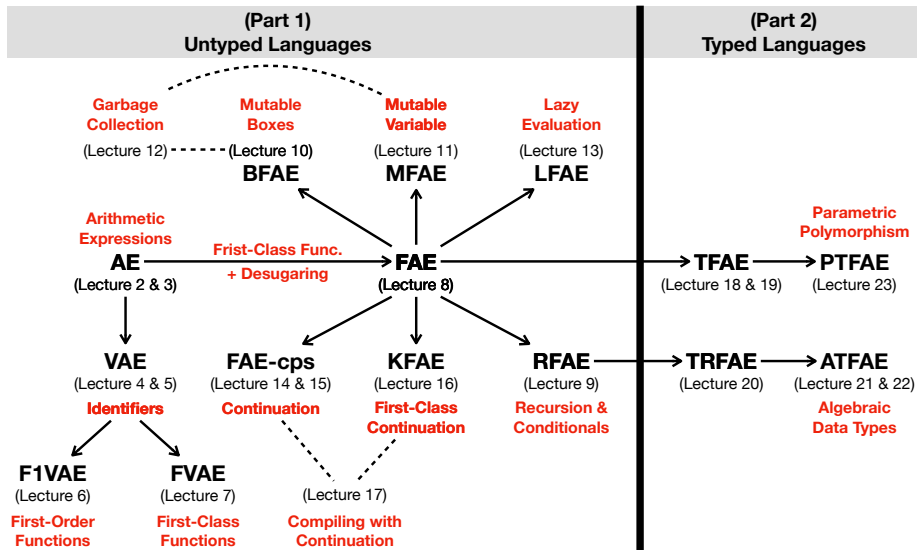


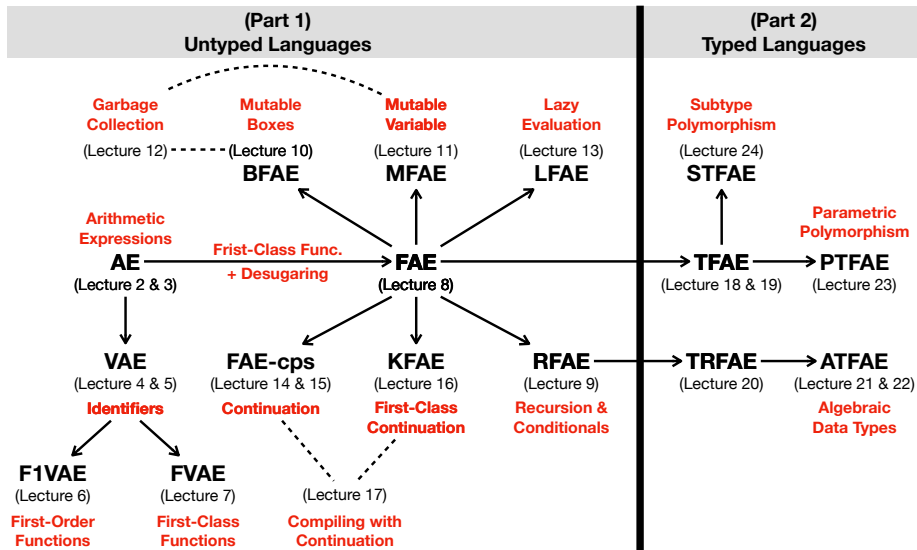
## (Part 1) Untyped Languages

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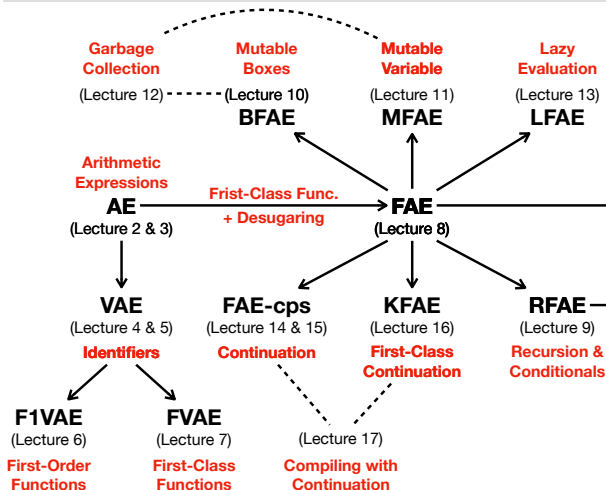




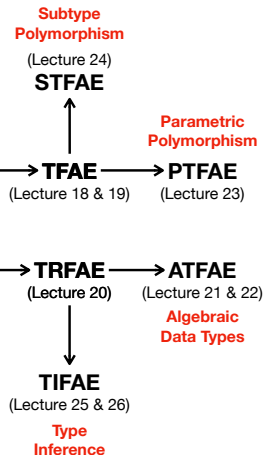




## (Part 1) Untyped Languages



## (Part 2) Typed Languages



- The final exam will be given in class.
- **Date:** 13:30-14:45 (1 hour 15 minutes), December 20 (Wed.).
- **Location:** 535, Asan Science Building (아산이학관)
- **Coverage:** Lectures 14 – 26
- **Format:** 7–9 questions with closed book and closed notes
  - Fill in the blank in a Scala code snippet.
  - Define the syntax or semantics of extended language features.
  - Write the evaluation results of given expressions.
  - Yes/No questions about concepts in programming languages.
  - etc.
- Note that there is **no class** on **December 18 (Mon.)**.

- I hope you enjoyed the class!

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