Listeners in ANTLR

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Compiler Design (Dr. Saeed Parsa)

In previous session…

- You got familiar with ANTLR
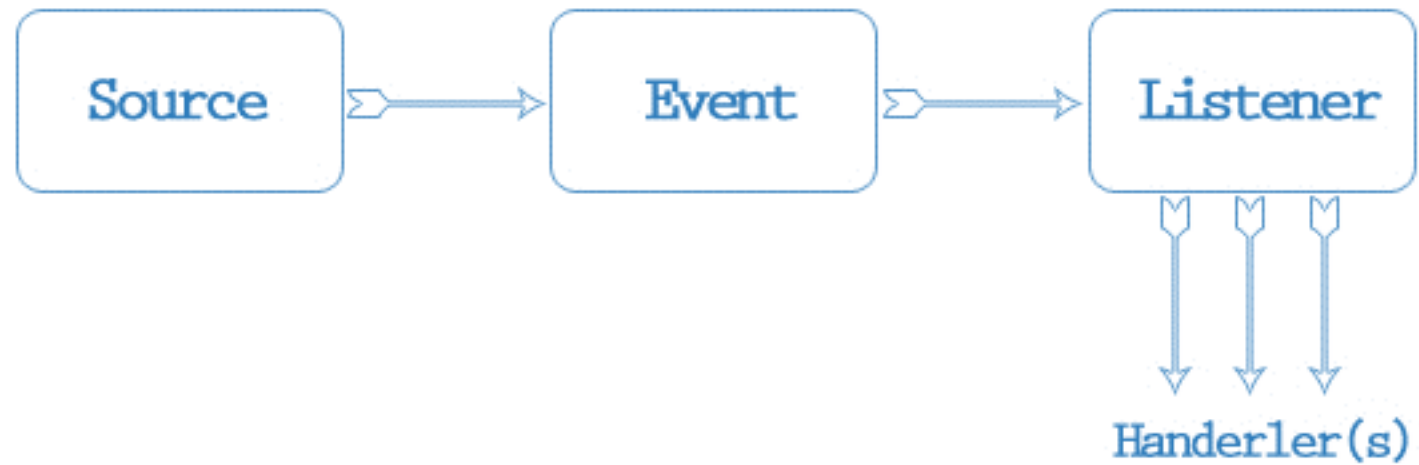- You'd installed ANTLR
- You saw a parse tree generated by ANTLR

In this session…

- We are going to traverse a parse tree using Python programming language!
- What are listeners?

What is a listener?

- In general?

- An event listener is a procedure or function in a computer program that waits for an event to occur. Examples of an event are the user clicking or moving the mouse, pressing a key on the keyboard, disk I/O, network activity, or an internal timer or interrupt. The listener is programmed to react to an input or signal by calling the event's handler.

- The term event listener is often specific to Java and JavaScript. In other languages, a subroutine that performs a similar function is referred to as an event handler.
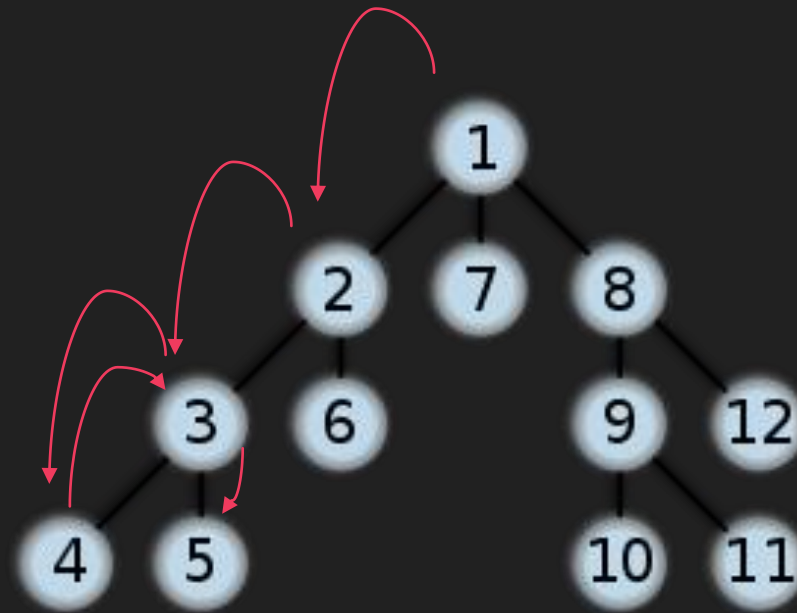
What is a listener?

Source ⇒ Event ⇒ Listener ⟱ ⟱ ⟱ Handerler(s)

Event-Driving Programming Model

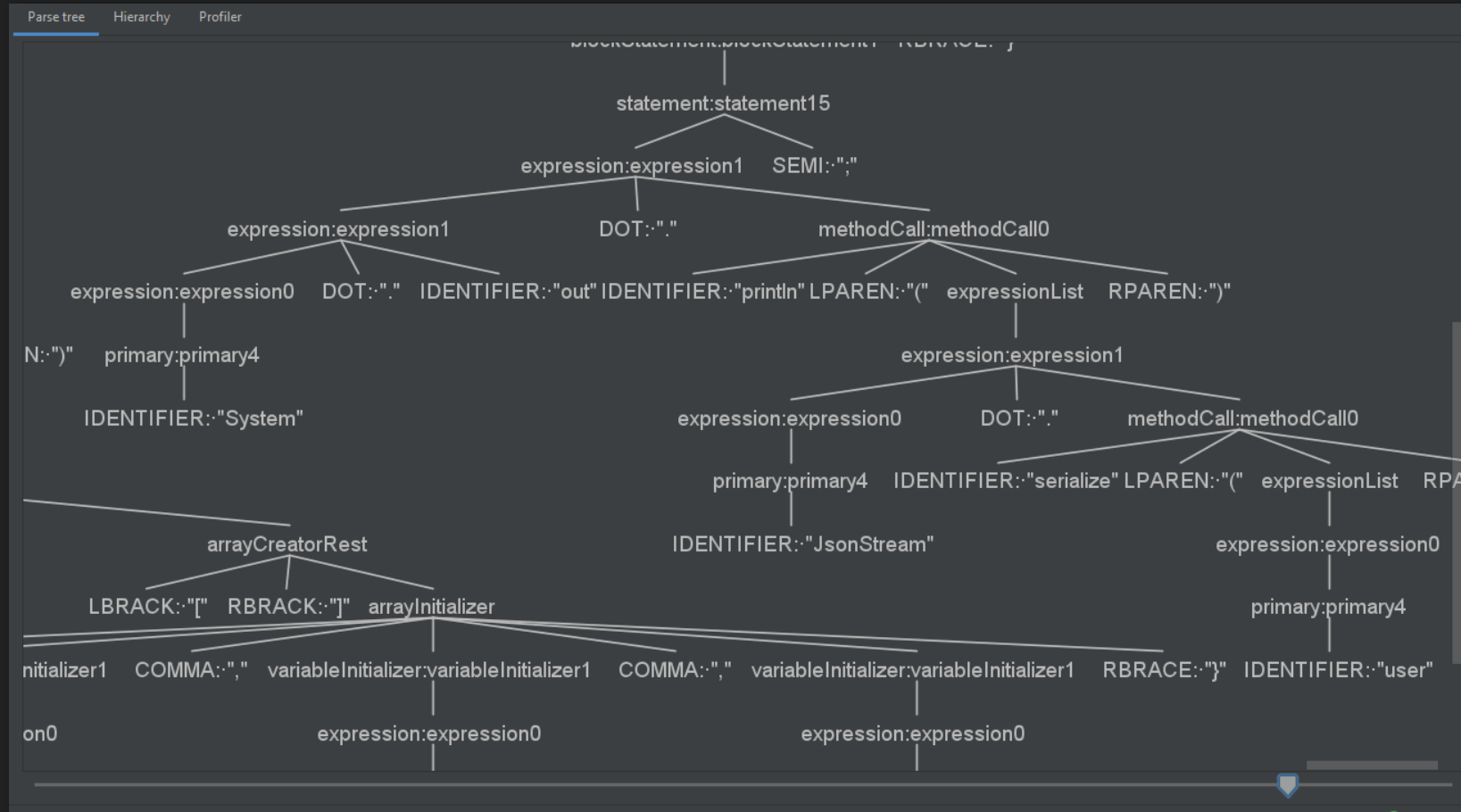# DFS Algorithm

○ What is it?

○ Depth-first search (DFS) is an algorithm for traversing or searching tree or graph data structures. The algorithm starts at the root node (selecting some arbitrary node as the root node in the case of a graph) and explores as far as possible along each branch before backtracking.

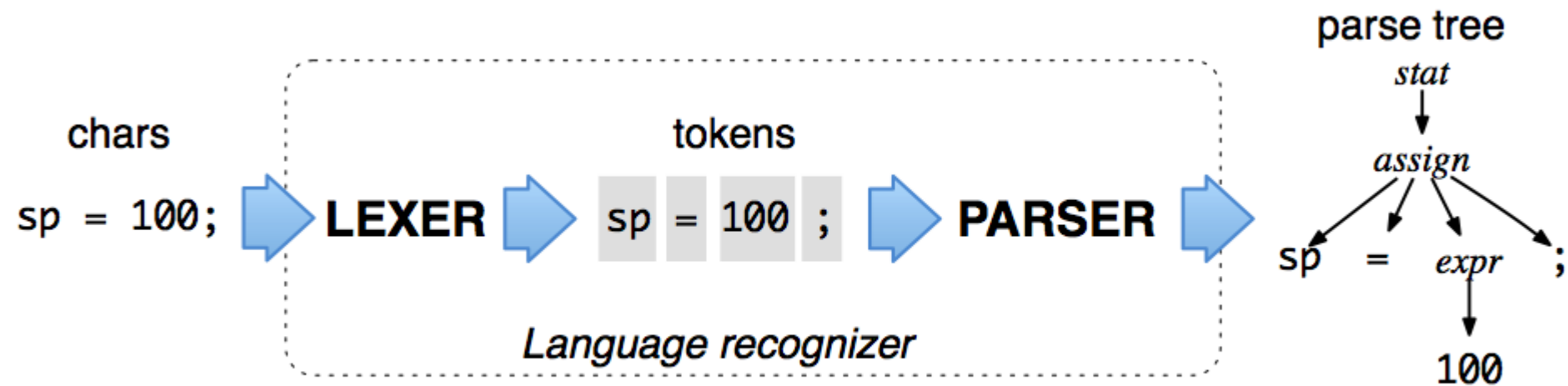# DFS Algorithm

Listener in ANTLR → DFS + Event Listeners

How ANTLR Works?

Let's Write Some Codes!

- In this practical example we are going to find class names in a Java project!

- Your homework is similar to this example!

- GitHub Repository:

  - https://github.com/cpt9m0/iust-compiler992