

Programming Language Engineering - Lab

Session 1

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1 Beginners

- What is the easiest way to extend Slip with a new native function?
Hint: There are two ways to do this.
- Implement a new native function “++” that takes two numbers as arguments and calculates the squared sum of them.
- Can we use this technique to implement a new special form for Slip? Why?
- Implement the **let** special form.
- There are two ways to implement this special form. Which one did you use? What is the other one?
- Apply the same techniques to implement the **cond** special form for Slip.

2 Advanced

- Explain why Slip currently does not support tail-call optimization.
- Make Slip properly tail-call optimized. **Hint:** Try to exploit the tail-call optimization of the underlying interpreter.