

CS335A: Compiler Design

Lexer

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I Languages

Source	Implemented in	Target
Golang	Python	x86_32

II Extra Features

Golang already has extra features which are not present in **vanilla "C"** language. Along with most of the Golang features, we will be implementing the following features as well:

2.1 List Comprehensions

Following is an example of a list comprehension.

```
xs := []int{1, 2, 3}
doublexs := [x * 2 | _, x := range xs]

doubleOddxs := [x * 2 | x % 2, x := range xs]
```

2.2 High Order Functions

Following is an example for syntax of function currying (higher order functions):

```
func myFunc(a int, d int)(b int)(c int) int {
    if (d == 0) {
        return a + b;
    } else {
        return b + c;
    }
}

var1 = myFunc(2, 3);
var2 = var1(4);
var3 = var2(5);
var4 = myFunc(3, 4)(1);

// Types of above variables

func(int, int)(int)(int) int    // myFunc
func(int)(int) int              // var1
func(int) int                   // var2
int                             // var3
func(int) int                   // var4
```