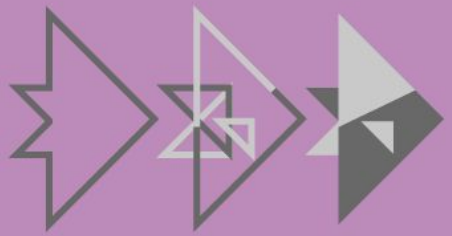
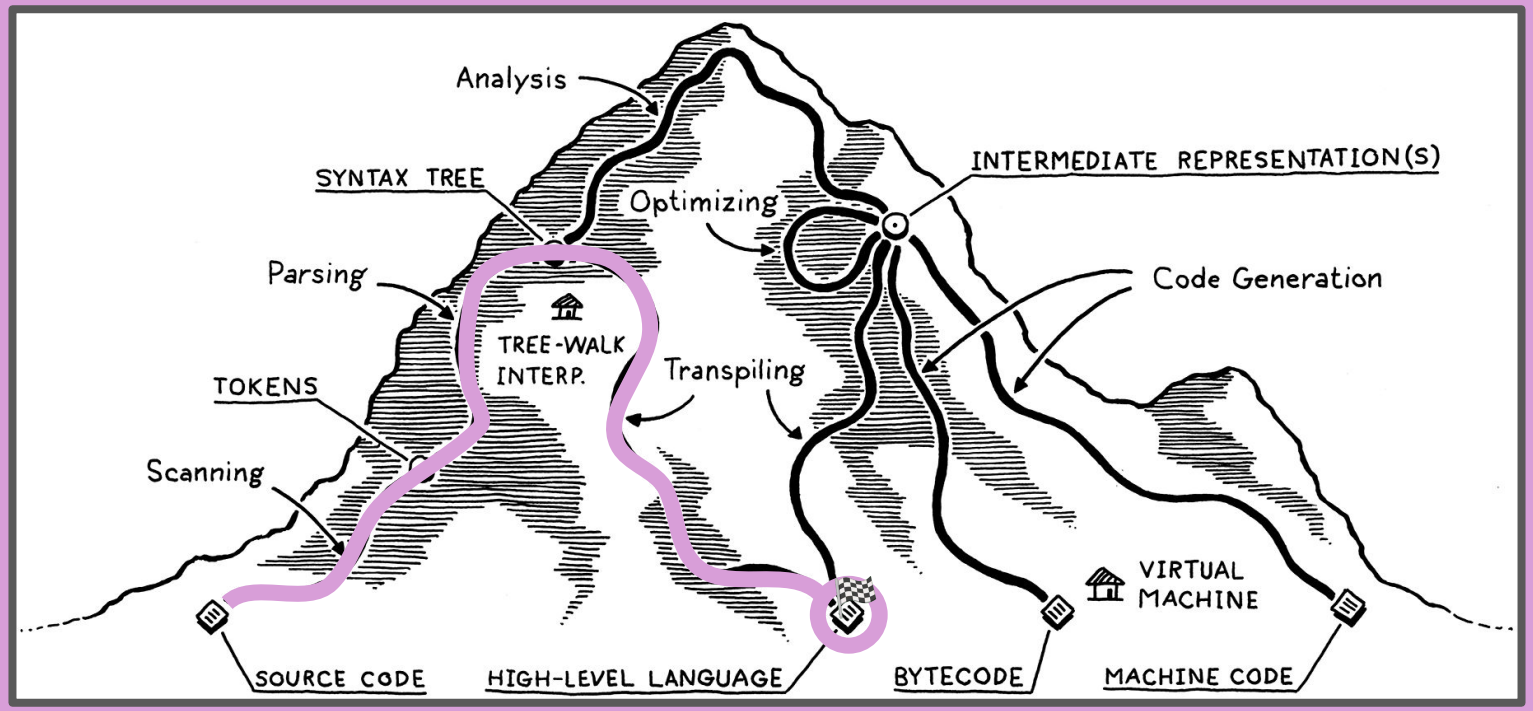
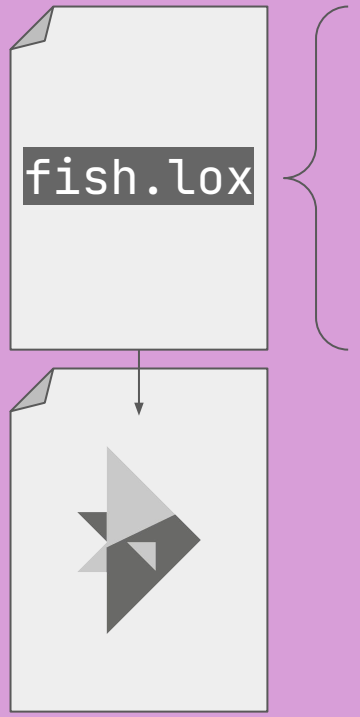


# CMPSC 201: PROGRAMMING LANGUAGES


Analysis
SYNTAX TREE
Optimizing
INTERMEDIATE REPRESENTATION(S)
Parsing
Code Generation
TREE-WALK
INTERP.
TOKENS
Transpiling
Scanning
VIRTUAL
MACHINE
SOURCE CODE
HIGH-LEVEL LANGUAGE
BYTECODE
MACHINE CODE

# Inheritance



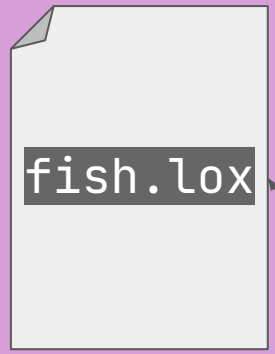

- type
- swim()

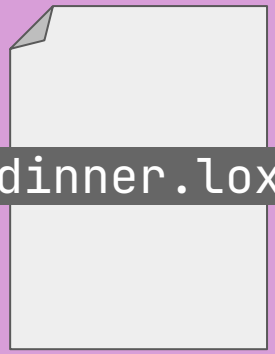
Our catch is a fish, and can do fish-y things

```
var food = catch();
food.type
food.swim();
```

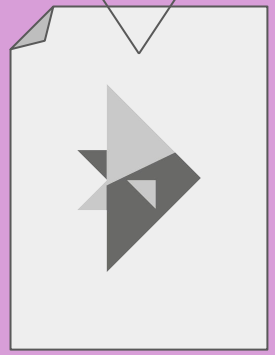
# Inheritance

- type
- swim()




- cook



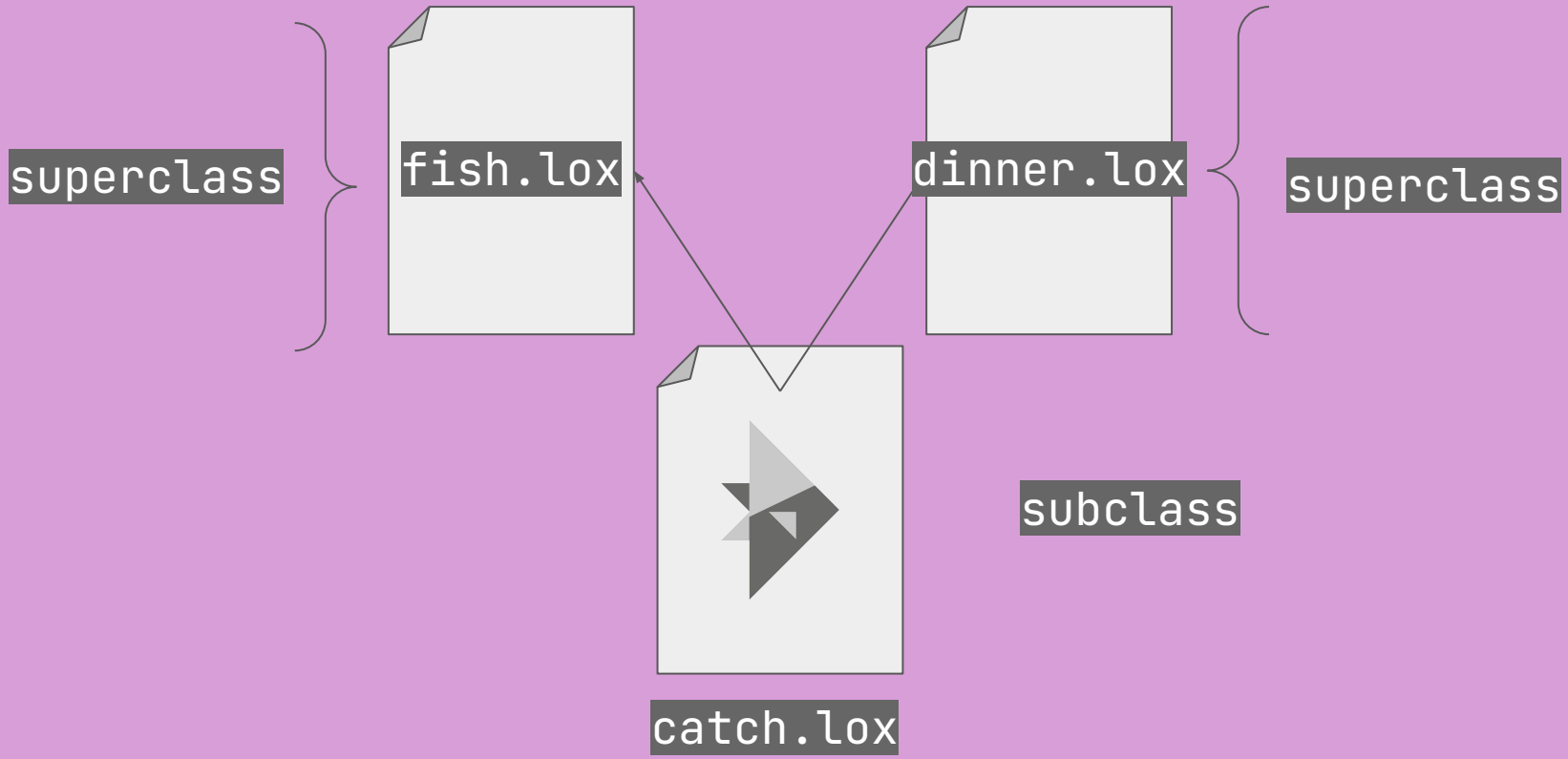

```
var meal = catch();
meal.type
meal.swim();
meal.cook();
```

# Inheritance

Basing or extending the functionality of a given class object using superclasses to derive new subclasses.

- Subclasses “inherit” the functionality of superclasses
- Subclasses do not affect the functionality or content of superclasses
- Subclasses can call properties and methods of superclasses as if they contain them

# Inheritance



# Gone fishin’

Python

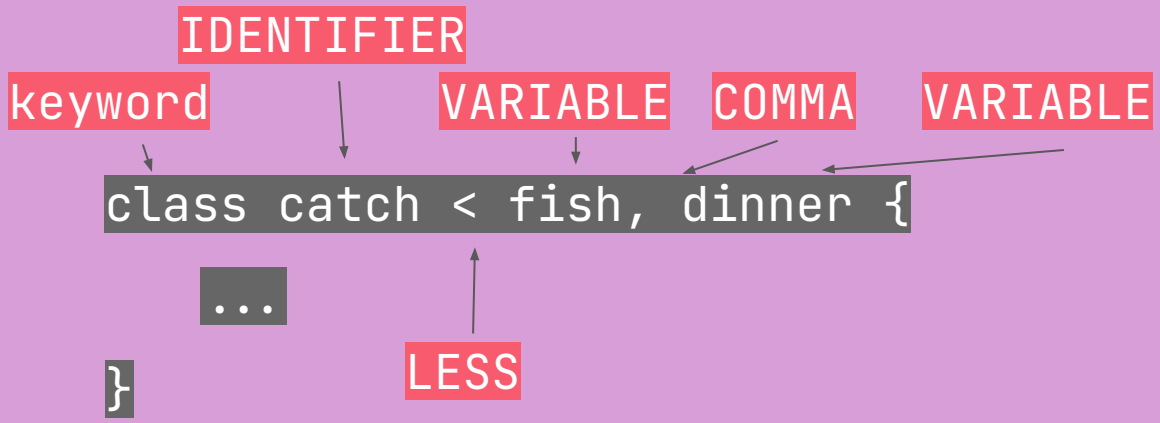
```
class catch(Fish, Dinner):
    ...

food = catch()
print(food.type)
food.cook();
```

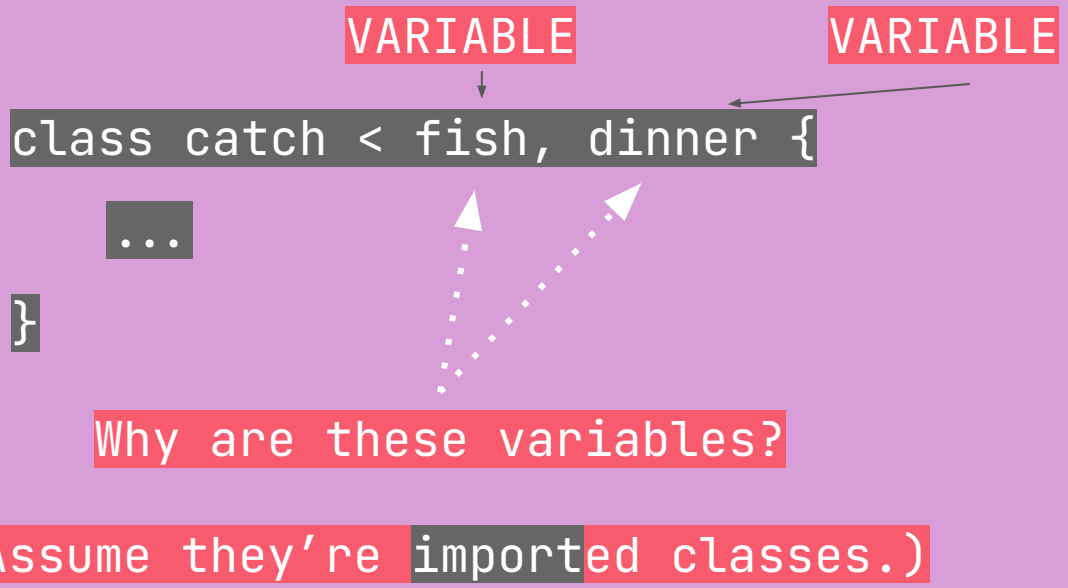
Lox

```
class catch < fish, dinner {
    ...
}
var food = catch();
print food.type
food.cook();
```

# Gone fishin’


IDENTIFIER
keyword
VARIABLE
COMMA
VARIABLE
class catch < fish, dinner {
...
}
LESS

# Gone fishin’


VARIABLE
VARIABLE
class catch < fish, dinner {
...
}
Why are these variables?
(Assume they’re imported classes.)

# Gone fishin’

WHY.

(If these are variables, what isn’t happening?)

```
[line 4] Error at 'dinner': Local variable is never used.
```

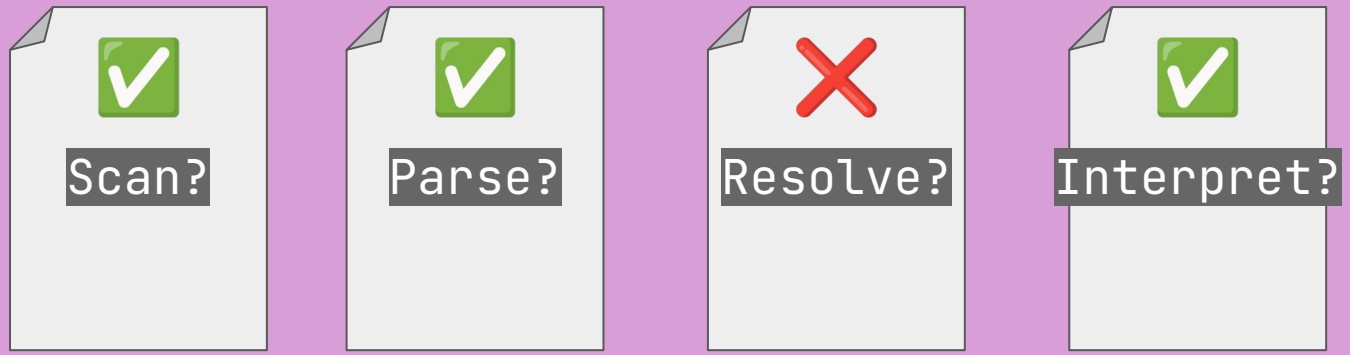
Your job is to discover the issue and fix it.

# Gone fishin’

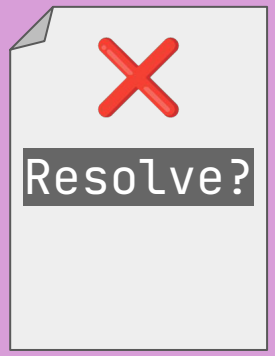
WHY.

(If these are variables, what isn’t happening?)

```
[line 4] Error at 'dinner': Local variable is never used.
```



# Steeling your resolve(to finish the assignment)




Issue may stem from any of the following:

- adequate creation/binding of Expr.Variable to correct scope
- program not equating calling a method from the class as a read or use
- incorrect scope resolution (i.e. resolving too late)

tl;dr

¯_(ツ)_/¯