

# OOP Introduction: basic definitions & concepts of object-oriented programming

The real world can be accurately described as a collection of objects that interact.

## 1. Programming:

procedure-oriented 面向过程

↓ 一步步解决, 数据 & 行为分离

object-oriented 面向对象

通过 object 交互解决

数据 & 行为封装一起

更方便创建/扩展功能

encapsulation

inheritance

polymorphism

how you program:

Prob → input

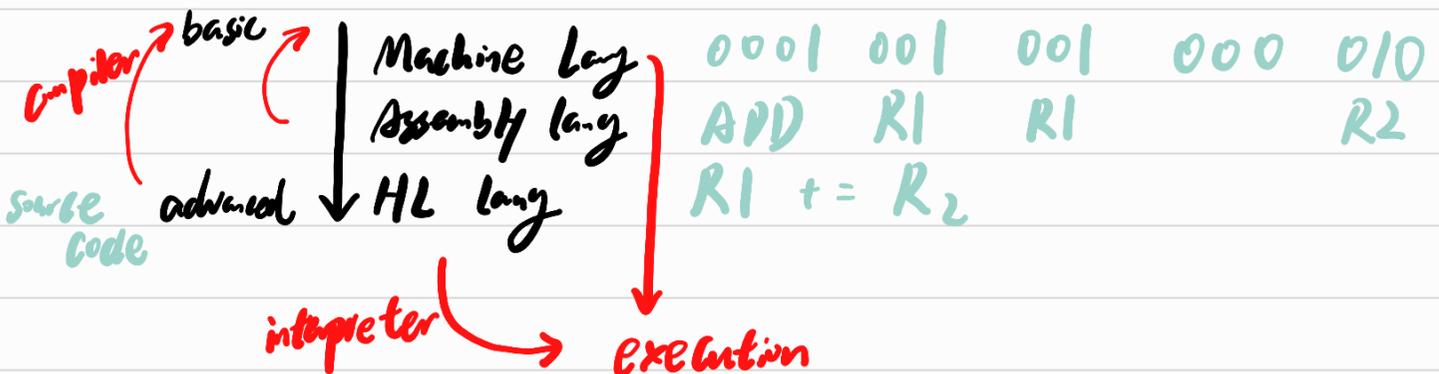
↓

comp prog a sequence of instructions in comp ~ algorithm

↓  
output → sol.

↓ developed by

object code assembler prog lang ~ a set of instructions for comp



Shows you a basic Java prog example:

Access Modifier class className {

instance variables (states)

Constructors

methods

(main method)

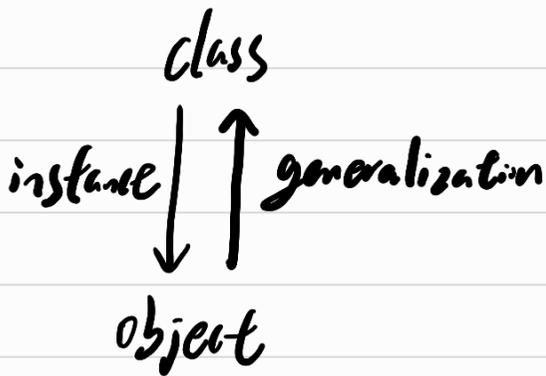
ret data-type

Access Modifier static void main (data-type variable) {

statements

}

}



各个规则: 有用

优点:

Modularity

Info-hiding

Code re-use

Java & Hello world: Java Definitions & program syntax



JVM features: Garbage Collection

JDK = JRE + Java Compiler + other tools  
develop                      ↓ runtime  
                                 JVM + Java libraries

Comments: /\* \*/ , //

one class only one main method

} Syntax : grammar  
  } Semantics : meaning

} Syntax error : detect before run  
  } run-time error : detect when run  
  } Logic error : undetectable