Exercise 1.1

- Imagine an artificial computer language, which can be utilized to solve a practical problem, i.e. the application of the language.
  - Tips 1. Language is an alternative approach to problem solving.
  - Tips 2. First find a proper problem, then design a language to solve the problem.
- Give an example of a complete piece written in the proposed language.
- Discuss how to define the new language and try your approach.
- Describe the process of changing the thinking of your language to a reality, i.e. how to make the artificial language usable.

答：（1）需要解决的问题：发明一种中文编程语言，便于那些不懂英文的人也能够进行简单的编程。

（2）举例：

```
类别 坐标类 {
    横 = 纵 = 0 。
    定义 到达 （ 横坐标， 纵坐标 ） {
        横 = 横坐标， 纵 = 纵坐标 。
    }
}

函数 坐标 ( 坐标一 , 坐标二 ) {
    返回 根号 ( 平方 ( 坐标一.横 − 坐标二.横 ) + 平方 ( 坐标一.纵 − 坐标二.纵 ) ) 。
}
```

坐标类 坐标一， 坐标二 。

坐标一.到达 (1 , 1)。

坐标二.到达 (2 , 2)。

输出 (距离 (坐标一， 坐标二))

（3）定义：利用 C++，python 等编程语言将中文编程中的各种关键词，操作等进行转换即可实现

（4）描述：虽然是中文编程，但仍然利用了面向对象的设计方法，使得该人工语言可用。

Exercise 1.2

- Draw a T-diagram with two stages of bootstrappings.
  - Given a new programming language L++, we firstly implement L, a small subset of L++.
  - Then we use L to implement L+, a subset of L++ and a superset of L.
  - Finally, L++ is implemented using L+.

答：