



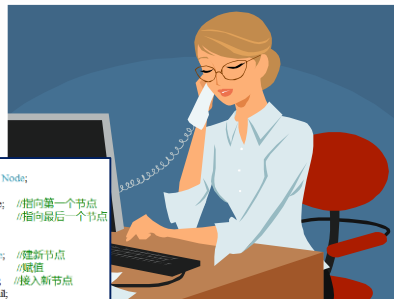
从结构化到面向对象

——从 C 到 C++

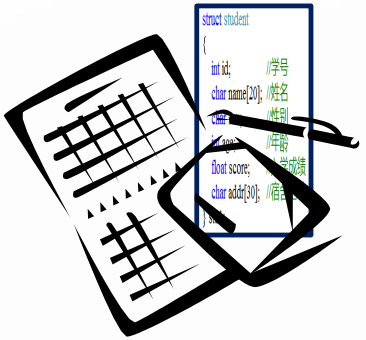
我们已经学过.....



```
struct student
{
    int id;           //学号
    char name[20];   //姓名
    char sex;        //性别
    int age;         //年龄
    float score;     //入学成绩
    char addr[30];  //宿舍地址
} stu1;
```



```
int n = 1;
Node * node = new Node;
node->num = n;
Node * head = node; //指向第一个节点
Node * tail = head; //指向最后一个节点
while (n++ < N)
{
    node = new Node; //建新节点
    node->num = n; //赋值
    tail->next = node; //接入新节点
    node->ahead = tail;
    tail = tail->next; //尾巴后移
}
tail->next = head;
head->ahead = tail;
```

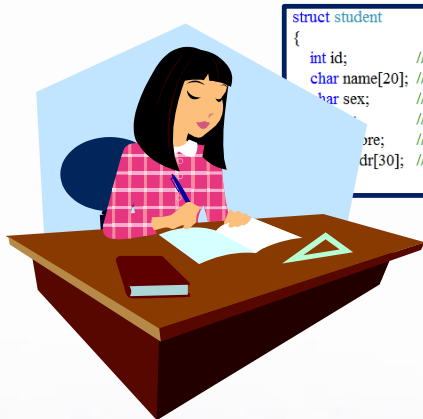


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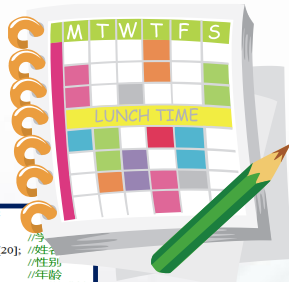


```
int count = 1;
Node *temp = head;
while (count <= M) //寻找第M个节点
{
    temp = temp->next;
    count++;
}
temp->ahead->next = temp->next;
temp->next->ahead = temp->ahead;
cout << temp->num << endl;
head = temp->next; //释放第M个节点
delete temp;
```

选课管理系统



```
struct student
{
    int id; //学号
    char name[20]; //姓名
    char sex; //性别
    int age; //年龄
    float score; //入学成绩
    char addr[30]; //宿舍地址
};
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软件的本质

——现实世界的解决方案在计算机系统映射

现实世界

解决方案

计算机程序

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现实世界

解决方案

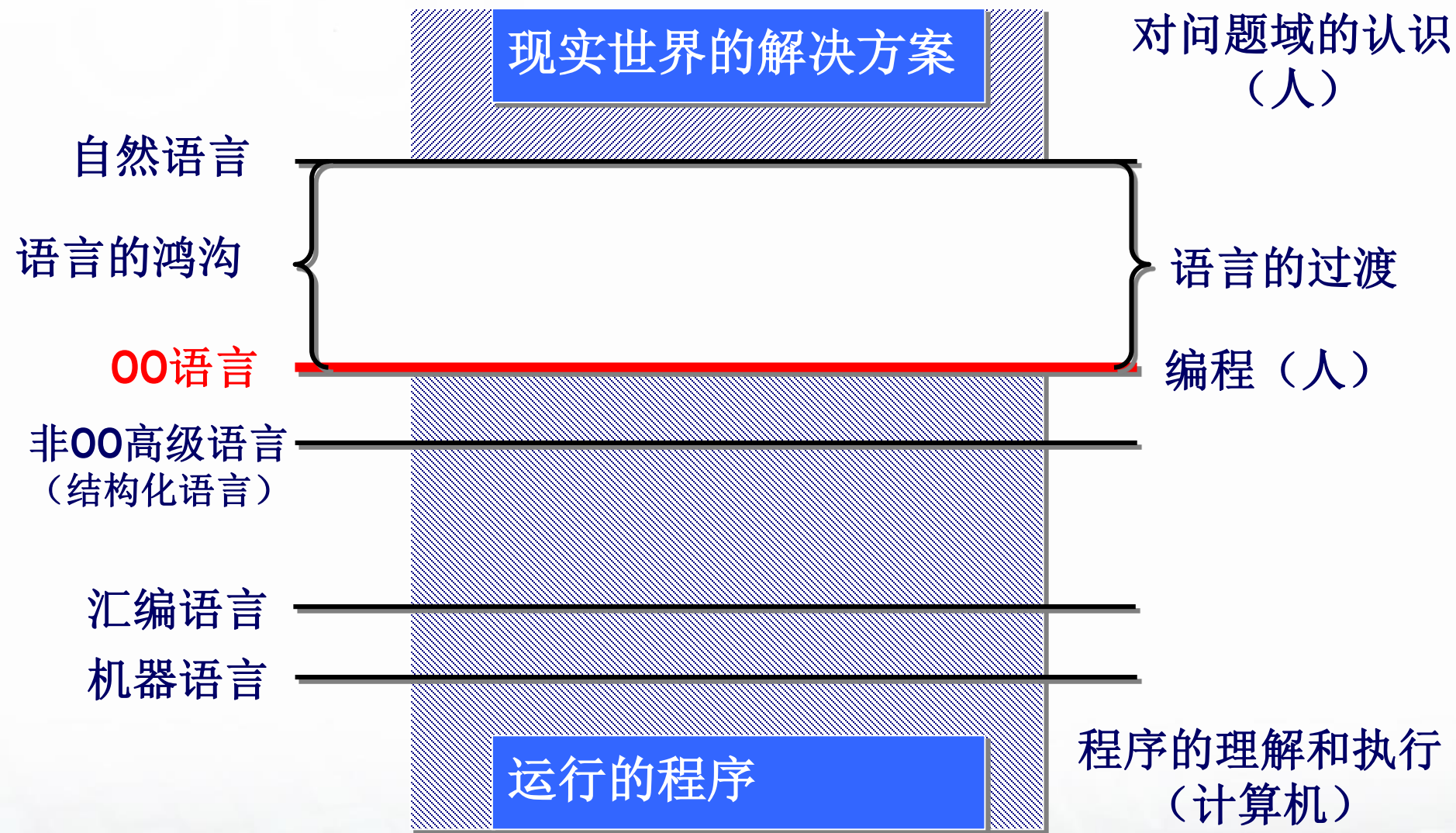


计算机程序

计算机系统



程序设计语言的发展



引自：邵维忠，杨芙清，《面向对象的分析与设计》

接下来的问题

- 怎么理解软件的本质？
- 什么是对象？
- 什么是面向对象的程序设计？
- 面向对象语言的作用？
- 如何通过面向对象的视角来观察世界？
- 如何进行面向对象的分析？
- 如何进行面向对象的设计？
- 如何进行面向对象的程序设计？

.....

感谢各位同学!



Happy
New
Year

A 3D rendering of the words "Happy New Year" in a bold, red, sans-serif font. The text is arranged in three lines: "Happy" on top, "New" in the middle, and "Year" at the bottom. The letters are thick and have a slight shadow on the surface below them. The background is white and filled with numerous small, red, diamond-shaped confetti pieces scattered throughout. The overall scene is bright and celebratory.