Summary 4 Jianfeng Jia

THE EARLY HISTORY OF SMALLTALK

Alan C. Kay

In this paper, Kay introduced the early history of the Smalltalk. Smalltalk is an object-oriented, dynamically typed, reflective programming language. Smalltalk was the product of research led by Alan Kay at Xerox Palo Alto Research Center (PARC). The first version, known as Smalltalk-71, was created by Ingalls in a few mornings on a bet that based on the idea of define the "most powerful language in the world" in "a page of code." It was implemented based on the idea of message passing. A later variant actually used for research work is now known as Smalltalk-72 and influenced the development of the Actor model. Smalltalk-80 was the first language variant made available outside of PARC. Smalltalk was the first true object-oriented programming language.

SELF: The Power of Simplicity

In this paper they present the implementation of the SELF, which is designed to support exploratory programming. SELF has adopted a prototype metaphor for object creation.In SELF, everything is an object. But, instead of a class pointer, a SELF object contains named slots which may store either state or behavior. If an object receives a message and it has no matching slot, the search continues via a parent pointer. A point object would have slots for its non-shared characteristics, its parent would be an object that held the behavior shared among all points. In SELF, there is no direct way to access a variable; instead, objects send messages to access data residing in named slots.

SELF offers a new paradigm for object-oriented languages that combines both simplicity and expressiveness. It eliminated the metaclass regress, dispel the difference between instantiation and subclassing. Reducing the number of basic concepts in a language can make the language easier to explain,understand, and use.