Week4 Summary

General idea of this paper:

This paper introduced the early history of an object-oriented programming language, Smalltalk. The paper also introduced many innovative features of Smalltalk. First thing is the objected-oriented programming method, which exert a great influence on the following OOP languages like Java, Python Ruby, etc. Besides, today's popular model-view-controller (MVC) design pattern and graphical user interface (GUI) design method are also highly influenced by Smalltalk. The author also introduced his Dynabook, which is tablet computer which is just like the iPads today.

Details about the paper:

The first part of the paper told us the development history of early OOP languages. There are two main centrals, the large scale one is to find a better module scheme for complex systems, the small scale one is to find a more flexible version of assignment. Then the author introduced the history of the FLEX Machine, which is a first attempt at an OOP-based personal computer.

In the second part, the author told a story about how the intuition of design the Smalltalk was developed and its applications and improvements afterwards. The author told the history about Smalltalk-72, Smalltalk-74 and Smalltalk-76 and some important features like inheritance and the user interface. The author analyzed the advantages and drawback of Simula and adapted it in Smalltalk, including single inheritance and other things. The author also introduced the influential "Smalltalk-style" overlapping interface which had a great impact on today's UI designs.

In the last part, the author shared his understandings about the relationship between the hardware and the software and OOP's programming style.

My Personal Thoughts:

After reading this long paper, I learned many things about how OOP languages were developed and the how computer scientists made their thoughts into practice. The Smalltalk is a very early stage OOP language and many languages including Objective C, Java, C#, JavaScript were highly influenced by it. We can still find many traces and features of Smalltalk while using Java. The reflection mechanism, the inheritance and concurrency. I think I got deeper understandings of OOP programming features and its advantages and drawbacks through reading this paper.