Niklaus Emil Wirth
Childhood

- Born in 15 February 1934, Winterthur, Switzerland
- Mother tongue German
- Father Geography teacher
Early Education

- BS Electronics Engineering
- ETH Zurich
- In 1959
Masters Degree

- Laval University, Quebec Canada
- In 1960
Ph.D

- UC Berkeley, Electrical Engineering
- Completed in 1963
- Advisor Harry Huskey
Harry Douglas Huskey 1916-

- Computer Design Pioneer
- 100 years old
Family Life

- Married twice
- Three children
- Currently Widower
Professional Career

- Assistant Professor at Stanford 1963-1967
- Computer Science department
ETH Zurich

- Professor 1968-1999
- Influential for creating CS department
- Head of Department in 1980s
- Retired since April 1999
- Still visits his department
Xerox PARC, California

- Sabbaticals years
- 1976-1977
- 1984-1985
Scientific Contributions
ALGOL

- Ph. D dissertation topic “A Generalization of ALGOL”
- Member of core team
- Purposed extension of ALGOL-60 based on Euler
- Resigned in 1968
- Published ALGOL-W
Euler

- Designed and developed with Helmut Weber
- Influenced by ALGOL-60
- Two main purposes
- Simple and flexible compared to ALGOL
- Efficient programming language can be defined in formal way
- Dynamically typed language
- Return value type of procedures can vary between calls
- Type conversion and type test operators
Pascal

- Released in 1970
- Named after French Mathematician Blaise Pascal
- Influenced by ALGOL
- Structured and efficient language
- Dynamic variables with pointer, sets, records
- Complex data structures defined easily
Pascal Continued

- Also developed Pascal compiler
- Adopted by ETH Zurich in 1971
- Apple Lisa mainly used Pascal
Modula

• Based on Pascal
• Language for process control systems
• Multiprogramming
• Module structure for information hiding
Modula-2

- Programming language for Lilith OS
- Based on Pascal
- Procedural language
- Module based information hiding
- Developed on PDP-11
- Ported to Lilith in 3 weeks
- OS, editors, utility program for Lilith
Lilith

- Inspired from Xerox park personal workstations
- Creation of personal workstation
- Developed in 3 years by team of 7 people
- Used even today by ETH Zurich, universities and Companies
- Wirth also developed text and graphical editors
Oberon

- Xerox Parc Cedar OS
- Huge clumsy and unstructured code base
- Simple, structured and understandable OS
- Developed in Oberon language
- Type extension added to Modula-2
- OS, compilers, editors for Oberon developed by Wirth
- Developed helicopter's control system in Oberon
Academic Honors

- 10 honorary doctorate degrees
- Turing award, 1984
- Emanuel Prize, 1983
- Computer Pioneer award IEEE, 1988
- Max Petitpierre Prize 1989
- Member of Swiss Academy of Engineering
- Foreign Associate, US Academy of Engineering
Books & Publications

- Systematic Programming: An Introduction 1973
- The Pascal User Manual and Report
- Algorithms + Data structures = Programs, 1976
- Theory and technique of Compiler Construction
Niklaus as a Person

- Gustav describes him as a good-natured, humble man
- Fond of reading literature
- Loved Music
- Good physical health
- Fluent in many spoken language
- Hobby of developing plane models
Conclusion

- Influenced field of software engineering
- A great teacher
- Always strived for efficiency
- Designed and developed many languages
- Excellent in both theory and practical development of language
- Good with both hardware and software development
Interviews

- IEEE Computer's July 2012
  https://youtu.be/BJIqHIYSDrk?t=41s

- Association for Computing Machinery (ACM), Programming Languages -- Past Achievements and Future Challenges
  https://youtu.be/xLTUvFboveM?t=22m51s