Pascal
The B6700 Era

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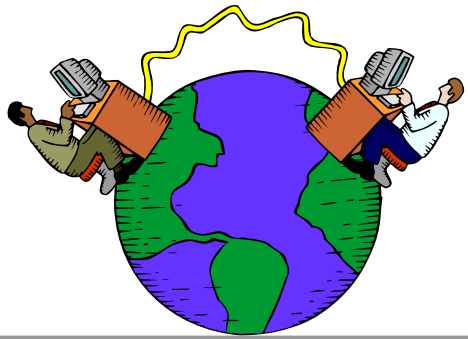
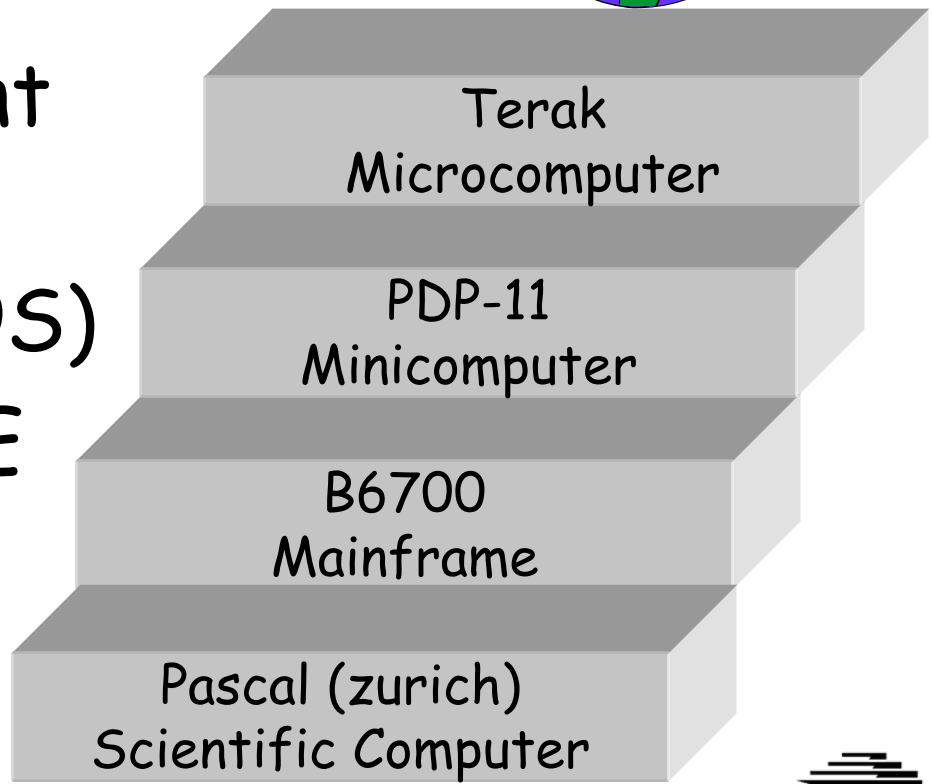
The Starting Point

- Zurich-ETH Pascal compiler, written in Pascal (of course!)
  - Original Compiler – 4000 lines of Pascal
  - Today, "hello world" in Visual Studio C is 300 lines of code!
- P-code emulator (assembly language?)
- Documentation

Stepping Stones and Global Visions



- Pascal (zurich)
- B6700 Emulator
- PDP-11 – co-resident with RT-11 DOS
- Terak (native, no OS)
- All computers (THE WORLD!)



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B6700 Issues

- Arithmetic (16-bit vs. 48-bit!)
- Character set (ASCII vs EBCDIC)
- Strict Data Types enforced in hardware
- Real-world issues (I/O)
- Other problems
  - Compiler construction was not considered to be a known art in the early 70's (the classic Dragon book was first published in 1977!)
  - Emulator construction was also new

Solutions

- Added a few syntactic elements to match the environment
- Multiple evolutions of the compiler/emulator to end up with a compiler that compiled itself
- Debugging was like bringing up new HW CPU
  - Emulator was also being created at the same time (thank you Mark Overgaard)
  - No debugging tools

Second Version – A Native B6700 Compiler

- Written in large part by Howard Green, Roger Sumner, and John VanZandt
- Much bigger problems – could not directly write compilers for B6700
  - Security issues
- VERY different code structures
- Wanted some of the power of the Algol language
- Offering it to Burroughs (years later Burroughs offered their own Pascal compiler)

Addendum

- UCSD Pascal is known around the world!
  - I still see resumes of new graduates from universities in far-off lands with "Pascal" or "UCSD Pascal" – 30 years later.
- An untold number of versions of Pascal have been created – almost all because of people's experience with UCSD Pascal
  - from microcomputers to supercomputers