January

MTAC Begins

Jan. 1943

The first computing journal was probably “Mathematical Tables and Other Aids to Computation” (MTAC), whch was founded by Raymond Clare Archibald in Washington D.C. during this month.

As the name suggests, it initially focussed on maths, but also found space to publish the landmark article, “The Electronic Numerical Integrator and Computer (ENIAC)” by Herman H. Goldstine [Sept 13] and Adele Goldstine [Dec 21] in July 1946.

By 1960, reflecting the increasing obsolescence of tables, the journal changed its name to “Mathematics of Computation”.

ERA Founded

Jan. 1946

During WWII, code-breaking work in the US Navy was run by a clandestine group with the deliberately vague title, "Communications Supplementary Activity – Washington" (CSAW). For example, CSAW was responsible for building versions of the UK's Colossus [Jan 18] for breaking Japanese codes.

After the war, budgets were cut for most military projects, including CSAW, and the Navy was worried that the group’s expertise would be lost. The answer was private enterprise – Engineering Research Associates, Inc. (ERA) was formed in Jan. 1946. It was based in the hangars of a former aircraft factory in St. Paul, Minnesota.

The technical side of ERA was headed by Howard Engstrom, William Norris [July 14], Ralph Meader, and around forty other former members of CSAW.

In 1947 the Navy awarded ERA the “Task 13” contract to build the ERA Atlas for the NSA [Oct 24]. In 1950 ERA started selling this machine commercially as the ERA 1101 [Dec 10], 1101 being binary for 13 of course.

Seymour Cray [Sept 28] joined the company in 1951, and his first design credit was the ERA 1103 [Oct 00].

In 1952, Remington Rand [Jan 25] acquired ERA, and continued to sell the 1101, although now as the “UNIVAC 1101”; naturally, the 1103 became the “UNIVAC 1103”.

The ERA group within Remington maintained close ties to the NSA, creating the "Bogart" for them in 1954. It was the first computer to employ solid state diodes, and also used core memory [May 11]. Disappointingly, it wasn't named after the actor Humphrey Bogart, but John B. Bogart, city editor of *The New York Sun* newspaper. Bogart is chiefly remembered for the quote: "When a dog bites a man, that's not news. But if a man bites a dog, that's news."

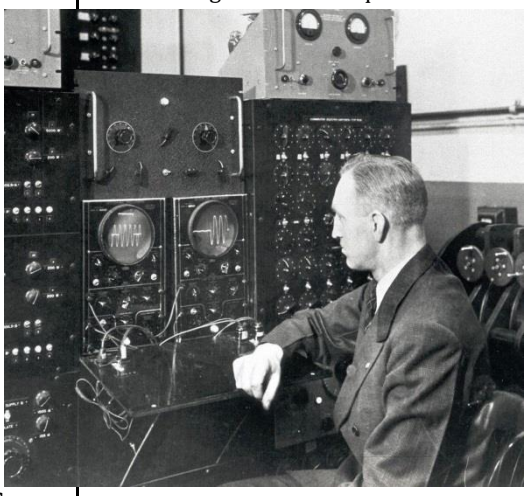
The Anacom

Jan. 1948

Westinghouse's Edwin L. Harder led the team that built the first general-purpose analog computer, the Anacom (short for ANAlog COMputer). A description of the device by Harder and G.D. McCannappeared in the Jan. 1948 issue of *AIEE Transactions*.

The Anacom comfortably filled a 40-foot long room. It noisily employed mechanical relays until 1953 when the machine was upgraded to use vacuum tube-based switches.

Before the rise of digital computers, the Anacom was the workhorse calculating device at Westinghouse, used for oil-flow problems, nuclear reactor design, and other problems involving differential equations.



Harder perusing a prototype Anacom (1946). Photo by Edwin Harder.

The Anacom continued to be employed until the end of the 1980's for analyzing nonlinear electric power systems, although it became increasingly unique. Vannevar Bush‘s [March 11] much better known differential analyzers [June 23] were all decommissioned by the early 1960's.

For the oldest working digital computer, see [April 00].

Faster Than Thought

Jan. 1953

The 'popular' textbook, “Faster than Thought: A Symposium in Digital Computing Machines,” edited by Bertram Vivian Bowden (later Baron Bowden), was published in the UK. Bowden is sometimes called England’s first computer salesman due to his involvement in promoting the Ferranti Mark 1 [Feb 12].

The book's preface begins: “During the last year or two most people must have heard of the remarkable devices often called “Electronic Brains”; every schoolboy knows that there are in existence some very complicated machines which are capable of astounding feats of

arithmetic. This book contains descriptions of several of these monsters…"

Incidentally, the use of "electronic brain" had become popular after a speech by Lord Louis Mountbatten [Oct 31] in 1946.

"Faster than Thought" wasn't the first 'popular' book on digital computers (e.g. see [Feb 22], [March 27], and [Nov 26]), but it was remarkable for its range of contributors, a stellar cast of mostly British researchers, who contributed 26 chapters covering the history of computing, and current application areas. They included John Bennett [July 31], Tom Kilburn [Aug 11], Christopher Strachey [Nov 16], Alan Turing [June 23], Maurice Wilkes [June 26], and Frederic Williams [June 26].

Turing and Strachey collaborated on a chapter about games, which looked at chess [June 25], draughts (checkers), and Nim (specifically the inner workings of the Nimrod [May 5]).

Appendix 1 was a copy of Ada Lovelace's [Dec 10] "Sketch of the Analytical Engine Invented by Charles Babbage . . . with Notes by the Translator" [July 10], the first account in English of Babbage's [Dec 26] Analytical Engine [Dec 23].

The book remained in print until 1968.

George in the Whirlwind

Jan. 1954

The "Algebraic System" (sometimes known as "George") was perhaps the first compiler for a "high-level" language, in that it translated mathematical formulae into machine code.

"George" was implemented by J. Halcombe Laning and Neal Zierler on the Whirlwind [April 20], and described in "A Program for Translation of Mathematical Equations for Whirlwind I." John Backus [Dec 3] called it "an elegant concept elegantly realized."

Laning and Zierler were members of Charles Adam's [Feb 6] Science and Engineering Computation Group at MIT, which was responsible for many of the programming firsts associated with the Whirlwind.

Other possibilities for first compiler are those for Hopper's A-2 [May 00] and IBM's Speedcoding [Sept 9].

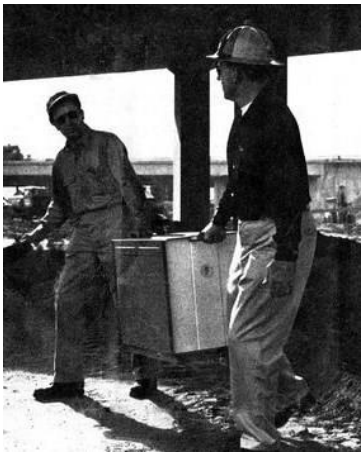
Another caveat is that "George" wasn't a general-purpose programming language, instead focusing on solving algebraic equations.

Unfortunately, "George" could generate code that took ten times longer to run than hand-crafted machine code for the same task. It was only with FORTRAN [Dec 00] that this problem of speed vs. abstraction was solved.

RECOMP II is Portable

Jan. 1958

The Autonetics RECOMP II was an early transistorized computer, which was proudly advertised as being 'portable'. However, the computer weighed around 200 pounds, and was 4.7 cubic feet large. Tellingly, the ads showed two men carrying it across a building site.



Part of a Autonetics Recomp II ad (1958). Evan Koblentz. (c) North American Aviation, Inc.

It was designed to sit under a (big) desk, and came with several largish peripherals that sat on top of the desk – a tape reader, typewriter, tape punch, and console.

The RECOMP II may have been the first commercial transistorized computer, but the IBM 608 [Oct 7] probably shipped first, in Dec. 1957, but was marketed as a calculator. IBM's first transistorized stored-program 'computer' was the IBM 7070 from 1960, introduced as part of the 7000 series [April 26].

For those of you wondering about the "II", the RECOMP I was designed for the military, and completed the previous year.

For the world's first 'mobile' computer, in the very general sense of being able to move about, see the DYSEAC [April 00]. For the first mass-produced portable microcomputer, see [April 3].

RPG Introduced

Jan. 1961

In 1959, IBM assigned the task of designing software for ordinary business users to Barbara Wood and Bernard Silkowitz. Their answer was "Report Program Generator" (RPG), introduced a few months after the first IBM 1401's [Oct 5] had shipped.

A user filled out "specification sheets" for a business problem, such as a payroll calculation which listed the input, the output format, and the calculation to be executed in between.

RPG was part of an attempt to move customers away from IBM Electric Accounting Machine (EAM) equipment, towards computers. IBM's flagship EAM product was the 407, which goes some way to explaining RPG's design. RPG parallelled how a user had to wire a 407's control panel which had specific areas for input, calculations, and output.

Dial F for Frankenstein

Jan. 1964

"Dial F For Frankenstein" a short story by Arthur C. Clarke [Dec 16], appeared in the Jan. 1964 issue of *Playboy* magazine. It recounts how a complex telephone network becomes sentient, and thereafter causes global chaos. Namely, "At 0150 GMT on December 1, 1975, every telephone in the world started to ring"! Next day will see chaos all over - radio stations shutting down, stock markets and banks shutting down, traffic signaling systems down, electricity grid behaving erratically, military weapons launched without human authorization, planes almost crashing, …"

At some point, Tim Berners-Lee [June 8] read the story (perhaps not in *Playboy* since he was only nine years old at the time), and it became one of his inspirations for developing the Web [March 12]. This seems a tad strange since the intelligent network had taken over the world by the end of the story.

CDC 449-2 Mini

Jan. 1967

The first published appearance of the phrase "mini-computer" was in *Datamation*'s Jan. 1967 "New Products" section, which announced CDC's [July 8] 449-2; the term was used as an abbreviation for "Special Miniature Computer"

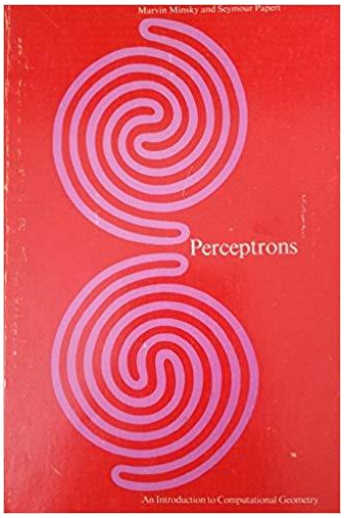
CDC delivered a prototype 449-2 to the US military the next year (probably to the NSA [Oct 24]). It weighed 12 (or 13) pounds, and measured just 4 x 4 x 9 inches – small enough to fit into an overcoat pocket.

In other words, the 449-2 wasn't a minicomputer in the sense of DEC's PDP-1 from [Nov 00] 1960, which is usually considered the first commercial example of that type of machine. The first use of "minicomputer" for talking about a minicomputer is probably due to DEC's John Leng [Aug 26], by way of fashion designer, Mary Quant.

Perceptrons Published

Jan. 1969

"Perceptrons: an Introduction to Computational Geometry" was written by Marvin Minsky [Aug 9] and Seymour Papert [Feb 29]. It should not be confused with the revised edition from 1987, which spent a considerable number of pages addressing the criticisms of this first edition.



First Edition of Perceptrons (1969). Marvin Minsky, Seymour Papert. (c) The MIT Press.

As the title suggests, Minsky and Papert's main topic was the perceptron, a type of neural network developed in the late 1950's and early 1960's [July 7]. In retrospect, perhaps the book spent too much time highlighting the limitations of perceptrons, which most readers took as a criticism of the entirety of neural networks. The result was a dramatic shift in AI research towards symbolic logic based techniques.

These techniques proved fragile when applied to real-world problems, and the ensuing disappointment was a major reason for the onset of the so-called AI winter [Oct 28] of the late 1980's.

In particular, Minsky and Papert rejected the use of multi-layer neural nets, which they termed a "sterile" extension of the perceptron idea. This was before it was realized just how powerful such multi-layer extensions actually were.

The book's hypnotic cover (pink spirals on a neon red background) refers to one of the perceptron's limitations – defining a function that correctly determines a shape's connectedness.

Frank Rosenblatt [July 7] published the first paper on perceptrons in 1958. He and Minsky knew each other at the Bronx High School of Science.

Minsky later compared the first edition of his and Papert's book to the fictional "Necronomicon" in H. P. Lovecraft's stories, because it was known to many, but read only by a few. According to Lovecraft, the "Necronomicon" is a textbook of magic capable of summoning the Old Ones. The very act of studying the text is inherently dangerous, as those who attempt to master its arcane knowledge generally meet a terrible end. There is supposedly a copy in the Widener Library of Harvard University, a short distance from Minsky's office at MIT.

ANIMAL

Jan. 1975

On the face of it, ANIMAL was a mildly diverting question-and-answer game, written by John Walker for the UNIVAC [March 31] 1100/42. It asked the user twenty questions in an attempt to guess their chosen secret animal.

However, ANIMAL had a nefarious side: it included a PERVADE subroutine which attempted to copy ANIMAL to every directory accessible to the player. Although ANIMAL was first released in April 1974, the

PERVADE component was only added in Jan. 1975.

Walker let the program loose in San Francisco, and it reached Washington DC. after just a week It multiplied so quickly because UNIVAC users often had very permissive file permissions, and the program jumped to other computers so easily because tapes containing the game were shared widely.

ANIMAL's spread was only halted by an upgrade to the UNIVAC's Exec-8 OS which modified the file status tables that PERVADE employed. ANIMAL continued to work but PERVADE would now quietly terminate.

The story that a HUNTER program was developed to track down and kill PERVADE is sadly just a story. It's probably derived from the true history of Creeper [March 15], the first virus, which did have counter-attack software written for it, called the Reaper.

Walker later became the co-author of AutoCAD [Nov 29], and founded AutoDesk.

DDJ

Jan. 1976

Dr. Dobb's Journal (in full: "Dr. Dobb's Journal of Tiny Basic Calisthenics and Orthodontia"; in short: DDJ) was created by Dennis Allison and Bob Albrecht [Feb 18] at the non-profit "The People's Computer Company" (PCC) [Oct 00]. DDJ was the first regularly published magazine to focus on software rather than hardware.

There was no Dr. Dobb – "Dobb" was a contraction of Dennis and Bob. The reference to orthodontics was expanded upon in the magazine's subtitle: "Running Light without Overbyte." The basis of the joke was that microcomputer memory was very expensive, so compact coding was essential, which meant using as few bytes ("bites") as possible. Eric Bakalinsky was responsible for coming up with the title.

The magazine was originally intended as a short-term, three issue explanation of Tiny Basic [Oct 10]. However, good sales persuaded a switch to regular publication, with editoral duties taken over by Jim C. Warren from the second issue. Warren would later co-organize the West Coast Computer Faires [April 15]; [March 3].

Old SCO Founded

Jan. 1979

Santa Cruz Operation (SCO), based in Santa Cruz (not unsurprisingly), was best known for selling three UNIX variants for Intel x86 machines: Xenix [Aug 25], SCO UNIX (later known as SCO OpenServer), and UnixWare. The company was founded by Doug Michels and his father, Larry.

Eric Raymond [Dec 4], in his book "The Art of UNIX Programming", called SCO the "first UNIX company" because earlier vendors had been hardware manufacturers or Telco's.

In 2001, SCO sold its UNIX rights to Caldera Systems, which later confusingly changed its name to SCO, and then to "The SCO Group". Santa Cruz Operation (the original SCO) is now sometimes referred to as "Old SCO", "Santa Cruz", or the classier "SCO Classic".

Unlike "Old SCO", "The SCO Group" (i.e. the new one) was not based in Santa Cruz, but hailed from Utah, and was later incorporated in Delaware. The founder of Caldera was the evocatively-named Ransom Love.

It was "The SCO Group" that pursued a series of legal battles known as the SCO-Linux controversies; see [March 6]; [Aug 10].

Nibble Begins

Jan. 1980

The *Nibble* magazine focused on hobbyist Apple II [June 5] programming. It was founded by Mike Harvey in his living room.

A highlight was a regular column called "Disassembly Lines", in which Sanford Mossberg M.D. presented assembly listings he had reverse-engineered from interesting parts of Applesoft's BASIC.SYSTEM, DOS 3.3 [Aug 12], and PRODOS [April 24]. In later issues, he turned his attention to the Apple IIGS, dissecting its ROM routines.

"Nibble" stands for half a byte or four bits. If you're something of a Medievalist, it may also be spelt "nybble" or "nyble". David B. Benson may have possibly coined the term in 1958 at the Los Alamos National Lab.

Eric Raymond's [Dec 4] "The New Hacker's Dictionary" lists other (somewhat unlikely) names for various bit sizes, including:

- 2 bits: crumb, quad, tydbit, morsel;
- 5 bits: nickle;
- 10 bits: deckle;
- 16 bits: playte, chawmp (on a 32-bit machine).

Seiko UC-2000

Jan. 1984

The Seiko UC-2000, the self-proclaimed "Wrist Information System" was perhaps the first commercial wearable computer.

It featured a ten-character, four-line 50×28 pixels monochrome LCD screen, a 4-bit CPU running at 32 kHz, 2 KB of RAM, and 7.5 KB of ROM. Functionally it was more like a programmable calculator than a computer, but two add-ons increased its capabilities. One was the rather ridiculous-looking UC-2100 QWERTY keyboard, that strapped to your forearm. This dubious idea had debuted the year before in Seiko's Data-

2000. The more useful extra was the UC-2200 docking station, which included a small thermal printer, a keyboard, an extra 4 KB of RAM, and a plug-in 26 KB ROM pack with Microsoft BASIC.

A Seiko UC-2000 (center top) plugged into a UC-2200. Note the thermal printer of the right and ROM pack on the left (1984). (c) Seiko

Other ROM packs contained games and you could even transfer a game off the 2200 onto the watch, and so play it anywhere. The 2200 could also be connected to a desktop machine to transfer data between the computer and watch.

During the 1980's, Seiko kept releasing new versions of the watch, looking for a winning formulae. Some of them could be directly connected to PCs through a RS232 cable, removing the need for the 2200 docking station, such as the RC-1000 (the "Wrist Terminal") from 1984.

A 1985 model, the Epson RC-20, was equipped with a touch-screen, perhaps the first ever, long before the Apple Watch [April 24].

None of them achieved the success that Seiko had hoped for, despite the fact that the UC-2000 was worn by Tommy Lee Jones in the 1986 action film "Black Moon Rising".

For more wearables, see [June 8]. For secret wearables of the 1960's see [Aug 14], [?? 1934]

TMS34010 Shipped

Jan. 1986

The Texas Instruments [Oct 1] TMS34010 was the first programmable graphics chip, and was used in several famous arcade games, such as Mortal Kombat [Oct 8].

Unlike other microprocessors of the time, the TMS34010 supported instructions for drawing 2D bitmaps, and arithmetic operations for manipulating pixel data. Later versions added support for floating point and 3D.

In 1990-1992, the TMS34010 became the basis for the Texas Instruments Graphics Architecture (TIGA) video co-processor boards used by MS-DOS and Windows. However, TIGA eventually lost out to Super VGA [April 2], even though it was technically superior.

MIPS R2000

Jan. 1986

John L. Hennessy's [Sept 22] MIPS Computer Systems released the R2000, the first commercially-available microprocessor to implement a MIPS architecture, and the first widely available commercial RISC (Reduced Instruction Set Computer [May 30]) processor.

MIPS (an acronym for "Microprocessor without Interlocked Pipeline Stages"), employed a unique five stage pipeline design that became a benchmark for judging later RISC processors. It could complete one instruction per cycle in an era where non-RISC microprocessors needed several cycles per instruction.

The R2000 was a 32-bit MIPS design that competed with the Motorola 68000 [Sept 26] and Intel 80386 [Oct 17] microprocessors. It included a separate floating-point unit (FPU), a canny decision since math performance was becoming essential.

Another clever decision was to adopt a fabless manufacturing model. MIPS licensed its chip designs to semiconductor vendors who had access to a foundry, and so they shouldered the expensive burden of manufacturing the chips.

Java Named

Jan. 1995

Prev: [Sept 3] Next: [Feb 23]

Sun Microsystems' Green Project [April 8] had shifted away from smart appliances for interactive TV to embrace the Web. At the time, its programming language, designed by James Gosling [May 19], was called Oak

Unfortunately, a trademark search for the name showed that it was already taken – by a video card manufacturer called Oak Technology. As a stopgap, Oak was renamed O.A.K. so the system's source code didn't need to be modified, but a proper name change was eminently desirable.

The first semi-public alpha release of the language was planned for March 1995, so a brainstorming session was called to come up with naming ideas. By now, the team had moved to new offices at 100 Hamilton Ave. in Palo Alto (the former DEC Western Research Lab). At some point during the session someone suggested Java, in honor of their favorite drink from the "Peets Coffeehouse" nearby (probably the one at 153 Homer Ave).

Gosling remembers: "The meeting, arranged by Kim Polese, was fundamentally continuous wild craziness. Lots of people just yelled out words. Who yelled out what first is unknowable and unimportant. It felt like half of the words in the dictionary were yelled out at one time or another."

When the company lawyers reviewed the names, they cleared three possibilities from a trademark standpoint: Java, DNA, and Silk. A vote revealed that the name DNA got the most "most liked" and the most "least liked" votes, so was dropped. James Gosling pushed for Java over Silk, and thus Java was christened.

However, Kim Polese, as product manager, had the final say over the moniker, so she should probably be designated the person who named Java.