Computer History Museum

Volunteer Information Exchange

Sharing what we know with those we know

Volume 1 Number 4 March 30, 2011

For the use of CHM volunteers and staff. Please do not forward.

What a great celebration!

Thanks to all those who put together the docent celebration last Saturday. I think that I can speak for all the docents in saying "Thank you." That kind of support is one more reason that we love to be part of the CHM.

And hats off to whoever designed the Revolution memento. I will treasure it.

Jim Strickland

Please share your knowledge.

Many thanks to those who have contributed to the first issues of the VIE.

To all those who have not contributed, we ask, "Why not?"

We are sure those of you who have been volunteers for a while have stories that you like to tell visitors. Not all of us know those stories, please share your knowledge.

And, we are sure that our newer volunteers have been doing research and have found interesting stories or background that the rest of us could use. Please share your knowledge.

And, share your questions! If there is something that you would like to know, probably some of us know the answer and others would like to. Share your questions, too.

CHM staff, you have so much information for us! Please don't assume that if you said something once, everybody heard it and/or remembers it. If you have a story or fact or factoid that helps get our history across, please share your knowledge.

Jim Strickland jlstrick@aol.com

OPEN QUESTIONS

Q: On the Hollerith machine, just to the left of and behind the "waffle iron" card reader are six switches. Do we know what they do? And next to the switches are what seem to be two terminals. Do we know what they are for?

ANSWERS

The "flip book" on the Univac I exhibit says that the Univac had core memory, and shows a picture of both the mercury delay line memory and core memory. Univac I never had core memory, so this was probably some sort of "see coming attractions" advertisement. See Alex Bochannek's complete answer on page 3.

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If you understand a piece of technology, it is probably obsolete.

James Burke, Connections

STORIES

Do you have a favorite story? Did you just learn something new that you want to share. Even if you think, "Everybody knows that ...", please let us hear from you.

Running at "half-speed"

In issue 3, Jeff Katz wrote of the 1964 Univac 1004 which was built to run at "half speed" so that the next model, the 1005, could be made to run at full speed by removing a jumper wire that had disabled every-other clock pulse in 1004.

The IBM analog to that was the "Series 50 Unit Record Equipment." In 1959, when computers really began to arrive in quantity and customers were returning punched card equipment en masse, IBM took those machines and changed a gear or pulley to make them run at half speed. Then they sold/leased them to small users, charging half as much. Better than making boat anchors out of them.

IBM Customer Engineers were told to keep a lookout for customers who changed the equipment back to full speed. - Jim Strickland

Johnniac is a 1953 computer built by RAND Corp.. It was based on the von Neumann architecture that had been pioneered on the IAS (Institute for Advanced Study at Princeton, NJ) machine. The name Johnniac was short for "John von Neumann Numerical Integrator and Automatic Computer.

It had, early been decided that the machine was to have a closed cycle air conditioning system. Cool, really cold, air was to be pumped up the center of the frame, returned along the outside of the frame, and re-cooled in the basement. The air conditioning installation designed for Johnniac may never have an equal--lots of cold water to make cold air, duplication of equipment to give reliability, and a temperature control system to end all.

Most equipment in the cooling system had backup units, so there evolved a maze of plumbing and valves second to none. When it came time to service the machine, someone had to open a door. It was like standing in the deep freeze, and the staff had to wear ski jackets--with hoods.

That gave Johnniac its early nickname – Pneumoniac. - Jim Strickland

The following is excerpted and edited from the web site of The Inquirer. - Jim Strickland

More on Colossus

PC Beats WWII Computer:
German Finally Takes Out Colossus!

Nick Farrell Mon Nov 19 2007

Britain's National Museum of Computing organized a contest between a rebuilt Colossus machine, which was developed to crack Nazi enigma messages, and anyone with a PC who would like to try their hand at beating it.

Not only was Colossus beaten by a home PC, but it was owned by a German. Bonn-based software engineer Joachim Schueth deciphered the message, which was encrypted by a Nazi-era Lorenz cipher machine and transmitted by radio from Paderborn, Germany.

According to *AP*, it took Schueth two hours to decrypt the message which was an hour and 35 minutes faster than Colossus.

Schueth said that Colossus "helped to shorten the lifetime of the Nazi dictatorship" but was no match for its electronic descendants. In fact he felt that putting Colossus in a competition with modern computers may be a bit unfair.

IN MEMORIAM
PAUL BARAN

Innovator and entrepreneur Paul Baran was one of the genuine fathers of the Internet. In the 1960s he came up with the idea of "packet switching." And as valley futurist Paul Saffo said, "no packet switching, no Internet."

He died at his home in Palo Alto over the weekend at 84.

ABOUT OUR RAMAC

- The product number for the disk drive was 350, the product number for the RAMAC itself, the CPU, was 305.
- We believe that our 350 came from the IBM Endicott plant where it was probably used for Education and test. We don't think it was ever installed in a customer shop.
- During restoration, Joe Feng recorded every track of the 50 disc surfaces with a digital scope and analyzed the data, which took between 100 and 200 hours.
  - There was insurance related data, probably from Canada. It had Canadian addresses and references to Vauxhall and Daimler cars.
  - There was data from 1963 regarding Sandy Koufax and the 1963 World Series. (The Dodgers swept the Yankees in four games.)
  - There was a reference to the Montreal World's Fair of 1967.
- Why do the disks on our restored 350 RAMAC have a diameter of 24 inches?
- Here's the story from John Best who heard it from Jack Harker, an IBM engineer who worked on the RAMAC and many subsequent disk projects. The story is confirmed by the CHM's oral history of Jack Harker's years with IBM.

The team needed a non-ferrous metal plate that was extremely flat. They found a vendor who made rotogravure printing plates. To quote Jack Harker: [They were] ALMAG [AlMg, aluminum-magnesium] alloy. They're very flat and expensive, about an eighth of an inch thick. And we'd get them in two-foot sheets, so we had a two-foot diameter disk. And we made the disk by first drilling a hole in the center of the plate and then you had a wooden arm with two routers on it, one of which came from Bill Goddard's own shop, and a pin in the middle. And you'd just rotate this arm around and it would cut [the corners off.]

Regarding Univac I and Core Memory

To the best of my knowledge, there was no core memory version of or retrofitted upgrade for the UNIVAC I. The UNIVAC II work was done in St. Paul (not Philadelphia) and core memory was one of the principal advances over the UNIVAC I. Remember that the ERA 1103A, also done in St. Paul, was using core memory when introduced in late 1954 and the ERA team had the expertise to re-engineer the UNIVAC I for core. Cooperation between the two sites was limited and beyond the engineering manuals, there wasn't any additional information provided to the ERA engineers when they were shipped a UNIVAC I in early 1955.

I believe that even though brochure shows UNIVAC I components and peripherals (e.g., original Uniservos), the core memory advertised was not available for the machine pictured. Note that the other components pictured on that page are photographs while the core memory is a drawing. It also is singled out as new. No doubt, IBM's October 1954 announcement of the core memory 705 (before its 702 predecessor even shipped!) contributed to UNIVAC's desire to announce a UNIVAC commercial computer using core, especially since the already had made that transition for their scientific product.

Even though the UNIVAC II was announced to customers probably as early as 1955, it didn't actually ship until the spring of 1958. The UNIVAC II brochure in our collection shows some of the same UNIVAC I pictures as the one used for the flip-book. I can't say for sure when the name UNIVAC II was applied, but the other brochure in the collection is catalogued as being from 1957. The one used for the flip-book is most likely from 1955 or 1956: There is a reference made to the government fiscal year 1956 as well as the Census Bureau machine having been in use for four years. The GE and U.S. Steel machines mentioned were installed in 1954. Also, the Unityper II was introduced in 1955, as far as I can tell. That's why I chose 1955 as the year for this brochure although 1956 seems equally likely.

The time between machine announcement and first customer shipment for large or high-end machines has traditionally been months or years. We use announcement dates in *Revolution*. The brochures don't always show what ends up shipping (e.g., the Cray-2 cooling tower looks very different on the brochure) and one shouldn't take it so literally.

I hope this helps.

Alex Bochannek Curator

USING OUR EDUCATION COLLECTION

Docents, if you need artifacts from our Education Collection for your tours, please note the following and see Jim McClure for directions on how to access the cabinet.

- Many Education Collection artifacts now are stored in a black rolling cabinet in the "Babbage closet."
- There is a check out/return log at the rolling cabinet – please use it. A record of the frequency of use of different artifacts will be very helpful in adjusting our collecting and storage strategy.
- Objects sometimes are used by different docents in the course of one day. Please only take the things you need for your tour. Take them shortly before your tour starts and return them promptly after your tour ends. Please do not take Education Collection objects home.
- There can be sound bleed between the Orientation Theater and the Babbage Closet, so please try to minimize noise and use a quiet voice.
- The rolling cabinet contains only a portion of the Education Collection. We hope to have a complete inventory of the available artifacts shortly, with storage locations included.

Coming Events

Date	Day	Time	Event
Apr 06	Wed.	6:00 PM 7:00 PM	In The Plex: How Google Thinks, Works, and Shapes Our Lives. Author Steven Levy in Conversation with NPR's Laura Sydell Member Reception (Museum Members Only) Program (Free)
Apr 25	Mon.	06:00 PM	Paul Allen Presentation and Book Signing
Apr 30	Sat.	TBA	CHM Fellow Awards
May 11	Wed.	12 Noon	CHM Soundbytes - Computer Conservation in the United Kingdom: The EDSAC Replica Project
May 11	Wed.	07:00 PM	CHM Presents Revolutionaries Sir Maurice Wilkes: The Man and His Machine
Jun 29	Wed.	12 Noon	CHM Soundbytes - The History of Magnetic Striped Media Technology – A Lecture by Jerome Svigals

Where did the word Wiki come from?

A wiki is a website that allows the creation and editing of any number of interlinked web pages via a web browser using a simplified markup language or a WYSIWYG text editor. Wikis are typically powered by wiki software and are often used to create collaborative works.

WikiWikiWeb was the first wiki.Ward Cunningham started developing WikiWikiWeb. It was named by Cunningham, who remembered a Honolulu International Airport counter employee telling him to take the "Wiki Wiki Shuttle" bus that runs between the airport's terminals. According to Cunningham, "I chose wiki-wiki as an alliterative substitute for 'quick' and thereby avoided naming this stuff quick-web."

Excerpted from Wikipedia.

	Theme	Curator / Contact	Icon
	R|Eevolution - overall	Len Shustek / Kirsten Tashev	
	Orientation film	Kirsten Tashev	
1	Calculators	Jim McClure	Abacus
2	Punched Cards	Chris Garcia	Hollerith Tabulator
3	Analog Computers	Alex Bochannek	Nordsiek Differential Analyzer
4	Birth of the Computer	Alex Bochannek	ENIAC
5	Early Computer Companies	Alex Bochannek	Univac I
6	Real Time Computing	Alex Bochannek	SAGE
7	Mainframes	Jim McClure	IBM /360
8	Memory and Storage	Len Shustek	Ramac
9	Software	Len Shustek	(none)
10	Super Computers	Dag Spicer	Cray 1
11	Mini computers	Kirsten Tashev	PDP 8
12	Digital Logic	David Laws	Moore's Law
13	AI and Robotics	Len Shustek	Shakey
14	Input and output	Jim McClure	Xerox Alto
15	Graphics Music and Art	Chris Garcia	Utah Teapot
16	Games	Chris Garcia	Pong
17	Personal Computers	Chris Garcia	Apple II & IBM PC
18	Mobile Computing	Marc Webber	Palm Pilot
19	Networking and the Web	Marc Webber	Google Server Engine
	Exit Experience	Kirsten Taschev	
	Babbage	Contact: Tim Robinson	Babbage
	Chess and Deep Blue	Kirsten Taschev	Chess and Deep Blue
	PDP 1	Contact: Steve Russell, Peter Samson	PDP 1
	IBM 1401	Contact: Rob Garner, Ed Thelen	IBM 1401

Please contribute to the Computer History Museum
Volunteer Information Exchange.

Share your stories, your interesting facts (and factoids) and your knowledge.
Send them to Jim Strickland jlstrick@aol.com