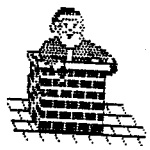
L.V.A.U.G. NEWS

MEMBER OF NEAR US

NOVEMBER-DECEMBER-1995

ISSUE #6

MERRY
CHRISTMAS



HAPPY
NEW YEAR

MEETING NOTES
OCTOBER 5, 1995

Meeting called to order and opened in due form by President Art Paolini Jr.

Art reported that stores do have CD-Roms for sale for the Jaguar.

NEARUS meeting Saturday over in Long Island at the LIAUG club meeting headquarters.

Art asked who is interested in attending a Sig on Machine Language, after some discussion by the interested parties it was decided to start the Sig on the First Sunday in November at Rich Kohn's office at 38 North 16th St. Sig will start at 3.00 PM.

There is no disk of the month this meeting.

Rich Kohn the Treasurer reported that the balance is still at $1200.00.

Art demoed a Software Automatic Mouth Program on his 130XE, it will play poker and blackjack with you and talks to you. He then demoed another talking program this one used a microphone, as he spoke the words first appeared on the screen then it talked back, it also shows pitch and intensity of your voice using bar graphs on the screen to show it to you.

Bill Folsom demoed his program that does word puzzles and can send it to a disk or printer and he has made improvements on this program since the last time that he demoed it for us.

Art explained numerous Atari word processors to us and the advantages and disadvantages of these different word processors.

After a break Rich Kohn and Elias Grim went to work on a 286 PC.

We had three visitors in attendance, hope that we will see them again next month.

That is all the meeting notes for this month folks.

Larry Tischbein
Secretary

WE SINCERELY HOPE THAT ALL LVAUG MEMBERS HAD A GREAT THANKSGIVING HOLIDAY

HOW MANY BITS IS JAGUAR? (And what does it mean anyway?)

The number of bits used to characterize a computing system is, in general, a fairly straightforward issue. The candidates for the number to use are:

1) The mumber of bits in the data bus. This is the number of bits that can be transferred from one part of the system to another at one time.

2) The number of bits in the ALU (Arithmetic Logic Unit). This is the number of bits that can be computed at once.

3) The mumber of bits in a data register. This is the number of bits that make up a value when stored inside a chip.

The number usually used is the first one, the width of the data bus. This is because there are bottlenecks in all systems. These need to be avoided. The transfer of data is a vital aspect of performance and it has been seen to be an important way to judge overall s system performance.

First, a bit of history. The first popular microprocessor was the Intel 8080. It had an 8-bit data bus (meaning 8 bits of data could be transferred at one time.), an 8-bit ALU(Arithmetic Logic Unit. so it could compute 8 bits at once), and 8-bit wide registers. There was a universal agreement tha this should be called an "8-bit processor". Another popular 8-bit processor is the 6502. Like the 8080, the 6502 has an 8-bit data bus, an 8-bit ALU and 8-bit registers. There was also universal agreement that this should be called an 8-bit processor.The 6502 is the processor used as the computation base of many popular systems. These include: game systems such as the Atari 2600, 5200,7800, and the Nitendo Entertainment System (NES), as well as computer systems such as Atari 400,800, Commodore VIC-20, C-64 and Apple II. these are the classic 8-bit machines.

Now the confusion starts. Consider the INtel 8088. The chip has an 8-bit data bus, a 16-bit ALU and 16-bit Registers. Intel called this an 8-bit processor because it has an 8-bit data bus to distinguish it from the 8086 which is the 16-bit bus version. The 8088 was used in the first IBM PC and IBM called it 16-bit. This was probably because the Apple II was 8-bit and IBM wanted to be bigger. In this case, the stretch is not completely ridiculous the 8088 is identical to the 8086 except for the width of the databus.

Next consider the Motorola 68000. This has an 16-bit data bus, a 16-bit ALU and 32-bit registers. It is also known as a 16-bit processor. The 68000 was the heart of the orginal Apple Macintosh. For reasons no doubt similar to IBM's, Apple chose to call the Mac a 32-bit machine (although no one really really believed them).

Intel actually worked a clever way around this problem when the 386 came out. The 386 is a true 32-bit chip with a 32-bit data bus, a 32-bit ALU and 32-bit registers. Intel also produced a version of the 386 that was identical except that it had a 16-bit data bus. Intel called the 32-bit bus version the 386DX and the 16-bit version the 386SX. The performance difference between these two chips demonstrates the validity of the data bus criterion. By the convention, the 8088 and 8068 should be called the 8086SX and 8086DX

respectively. The concept of system architecture is quite useful here. The 386 is a 32-bit architecture and the 386SX is a 16-bit implementation of that architecture. Just to add confusion Intel changed the meaning of DX and SX with the 486. The 486SX is missing an on-chip coprocessor.

In the video game arena, things were quite a bit simpler. The Sega Genesis used, as its' main processor, the 68000. Either as result of a failure of marketing imagination or due to Apple's failure to convince anyone that the orginal Mac was 32-bit, Sega called the Genesis a 16-bit machine. The Super Nintendo Entertainment System(SNES) is based on a 65816, a 16-bit version of the 6502. This is also a 16-bit system. Both of these systems use 16-bit graphic chips. This means that the graphic chips in the system are capable of moving data around the system 16-bits at a time. The NEC Turbo Graphics 16 is an interesting machine. It used an 8-bit processor but contained a 16-bit graphics hardware. This is the first popular example of the bit size of a system not being determined by the central processor, but by other parts of the system. Another example of a 16-bit system containing an 8-bit processor is the Atari Lynx.

To recap the discussion above, there are several different numbers that can be used to classify a computing system. The one that has had the best historical success is the width of the data bus. At present, this is relatively easy to do. Just count the number of wires carrying data. As Technology advances, this will become harder since the busses will be on-chip. This means that the actual 64 wires may not be visible on the circuit board, as they are now. The details may change, but the basic principal will remain the same.

NOW, HOW MANY BITS IS THE JAGUAR?
The heart of the Jaguar architecture is a 64-bit data bus. This allows several of the system components to operate on 64-bits of data simultaneously and pass those results arond the same way. These components are:
OBJECT PROCESSOR
This system element takes an image from DRAM(main memory) to draw it on the screen. It reads DRAM 64-bits at a time.

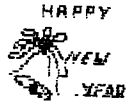
BLITTER
This moves data around the system. It is optimized for the transfer of graphics data. The BLITTER is capable of 64-bit reads and writes.
GPU
This is the true computational heart of the system. It is a custom RISC processor, with a 64-bit data bus, a 32-bit ALU and 32-bit registers.

There are other support components in the Jaguar that are not 64-bit in nature. This does not prevent the system from being 64-bit.

From this, it should be easier to see that the Atari Jaguar really is a 64-bit system.

(This document issued at Atari's "Fun 'N'Games" press event held June 20, 1995 at Atari headquarters in Sunnyvale, California. Tradenames used are Trademarks or Registered Trademarks of their owning companies.)
.GIF

Editor's notes: This article reproduced the the August 1995 issue of The Sage Scroll of Erie, PA. Thought it would be interesting as some members have expressed interest to see if we can't bring Jaguar enthusiasts to come to our Atari Computer Club.



OS BLUES
by Mark Butler

Suppose your operating system ran your car, what would a drive to the store be like? Here are some ideas, some are from Will Strang at GRiD Computer Systems and some are from me.

MS-DOS: You get in your car and try to remember where you put the keys.

Microsoft Windows: You get in the car and drive to the store very slowly, because attached to the back of the car is a frieght train.

Macintosh System 7: You get in the car to go to the store and the car drives you to church.

Unix: You get in the car and type "grep st." After reaching speeds of 2000 miles per hour, you arrive at the barber shop.

Microsoft Windows NT: You get in the car and write a letter that says, "Go to the store." Then you get out and mail the letter to your dashboard.

IBM OS/2: After fueling up with 6,000 gallons of gas, you get in the car and drive to the store with a motorcycle escort and a marching band in procession. Halfway there, the car blows up, killing everyone in town.

VM (mainframe): You get in the car and drive to the store. Halfway there you run out of gas. While walking the rest of the way, you are run over by kids on mopeds.

Amiga: You get in the car and begin driving very slowly. Halfway there the car crashes and is recalled; the salesman informing you that you need to but a better model.

Atari ST: You walk out intending to go to the store, then you remember that there are no domestic cars, they are only sold in Europe.

Atari XL/XE: You get in the car and are dismayed to see a blank dashboard. But a dedicated user group member tells the car where to go.

As if that were not enough, how about these about how to program in different languages. Most of these came from Joe Salemi, the SysOp on ZiffNet in Compuserve.

C: You shoot yourself in the foot.

Assembly: You crash the OS and overwrite the root disk. The system administrator arrives and shoots you in the foot. After a moments consideration of the work involved to get everyone back on-line, the administrator shoots himself in the foot.

C++: You accidentally create a dozen instances of yourself and shoot them all in the foot. Providing emergency medical care is impossible because you can't tell which are bitwise copies and which are just pointing at others and saying: "That's me over there."

Atari XE Basic: You seem unable to do anything but after writing several assembly routines coded as BASIC data statements and switching GTIA modes, you succeed in shooting yourself in the foot.

Ada: If you are dumb enough to actually use this language, the US Departement of Defense will kidnap you, stand you up in front of a firing squad and tell the soldeirs to shoot at your feet.

Modula/2: After realizing that you can't actually accomplish anything in this language, you shoot yourself

in the head.

APL: You hear a gunshot and ther's a hole in your foot, but you don't know enough linear algebra to understand what happened.

Microsoft Visual Basic: You spend so much time playing with the graphics and windowing system that your boss shoots you in the foot, takes away your work station and makes you develope in COBOL on a 3270 dumb terminal.

GFA Basic: After carefully assembling the gun and bullet from the building blocks provided, you shoot yourself in the foot faster than you could have imagined.

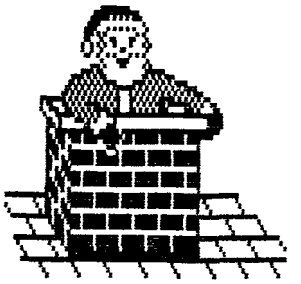
Atari ST Basic: You shoot at your foot, but the bullet travels so slowly that you have plenty of time to get out of the way.

Well there they are... hope you like them.

(This article was reprinted from April 1993 Issue of "The DACE Desktop)

SEASONS GREETINGS

MEETING NOTES
NOVEMBER 2, 1995



Meeting called to order and opened in due form by President Art Paolini Jr.

Nearus meeting was held on October 7, 1995, with another scheduled in the near future.

Art, then set up Eli Grim to give us a demo with a light gun and he gave us a very good demo, Thanks Art and Eli.

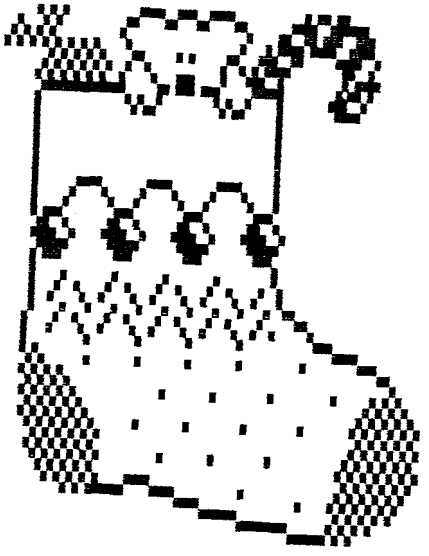
Art, then demoed the club disk for the month, the one side has lots of Paper Airplanes and the other side is full of great Atari utilities, and Art also demoed these utilities for the members present.

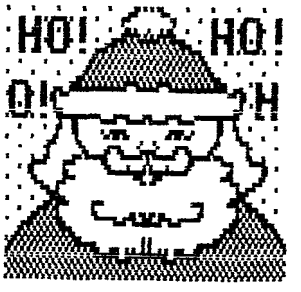
The first machine language Sig will be held on Sunday afternoon November 12, 1995 at Rich Kohn's law office in Allentown.

Rich Kohn, the treasurer reported that our balance in the treasury is still in the $1200.00 range.

That is all the meeting notes for tonight folks.

Larry Tischbein
Secretary





STOLEN CODE COST MORE THAN MONEY

If you are on line with the Internet or a bulletin board, you possess something more valuable than your wallet: Your password.

Some who steals your password can do more damage than one who grabs your wallet. Although a person could run up huge bills with your credit cards the worst damage is about $50. But a stolen password can cost you more than money.

Can you put a price on your reputation? It is possible for someone using your password to seriously damage your reputation.

Not long ago, someone used another college student's account to send out racial hate messages on the Internet. After the messages became public, the innocent student was overwhelmed with flaming e-mail messages.

The student was eventually cleared but not before his e-mail account was shut down from the weight of all the hate mail sent to him.

You can take several steps to protect your password, said Brian Connelly, who works for The Computer Group/USConnect and is an officer of SuperNet, a local Internet provider. Those steps include: Don't use automatic dial-up scripts.

"I know it's a pain to type in your user name and password each time," Connelly said, "but using those scripts makes it very easy for someone to steal your password."

Also, when typing in your password, be aware of people "shoulder surfing," trying to watch your keystrokes. Don't use a word that's in the dictionary. "If you use something that's not a word, then there is a lot less chance someone can guess your password and use, " Connelly said.

He also recommends using a mix of upper and lower case characters, along with some numbers or symbols, to make the chance of someone guessing your password remote. Use a different password for each service you use. That way, someone can't steal your password on one service and use it on another one, Connelly said.

He said with the advances in Internet tools and computers, it's becoming more difficult for hackers to grab someone's password. "It's not as easy as it used to be," he said.

He also said SuperNet has a system that notifies a user if his or her account is being used by someone else.

Greg Ferrante, vice president of operations at Carolina Conputer Products, which sells Internet access through Netside, agrees current equipment makes it difficult to steal passwords. He also adds a word of caution to those who would steal and use passwords.

"We have a program to trace who's using someone else's password," he said, "it's a nice little feature we pay for. We would let it go on for awhile so we can figure out who's doing it and where it's coming from."

Ferrante said he's been using bulletin boards for more than 10 years and has never had any of his passwords stolen.

"I don't tell ayone my password. I don't write it down anywhere and it has nothing to do with me, such as a birthday or an anniversary."

LEHIGH VALLEY ATARI
USERS GROUP
Post Office Box 796
Whitehall PA 18052-0794

LEHIGH VALLEY ATARI USERS GROUP
Meets the first Thursday of every month at 7:30 P.M. at the
Lincoln Technical Institute
5151 Tilghman Street
Allentown, PA 18105

MERRY XMAS AND HAPPY NEW YEAR
TO ALL
LVAUG MEMBERS

FIRST CLASS MAIL

ABBUL C/O WOLFGANG BURGER
WIESHEN BECK 45
D-4352 HERTEN GERMANY